NSW EPA
Environment Protection Authority

Community Recycling Centres

Operations and management handbook – 2nd ed.

Waste matters
Drop off your household problem waste for recycling

Published by

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Disclaimer

This Handbook is intended to assist in the design of Community Recycling Centres (CRCs) to maximise the efficient operation of the centre or service and maximize resource recovery. It does not constitute legal or regulatory advice on any issue. It does not dissolve the user or facility from compliance with NSW waste regulations or environmental license conditions. Councils and others should seek and rely on their own advice in relation to issues such as environmental licensing, Work Health and Safety and planning approvals in relation to specific facilities. The NSW Environment Protection Authority (EPA) accepts no responsibility for errors or omissions in the Handbook or for any loss or damage arising from the use of the Handbook.

Community Recycling Centres program

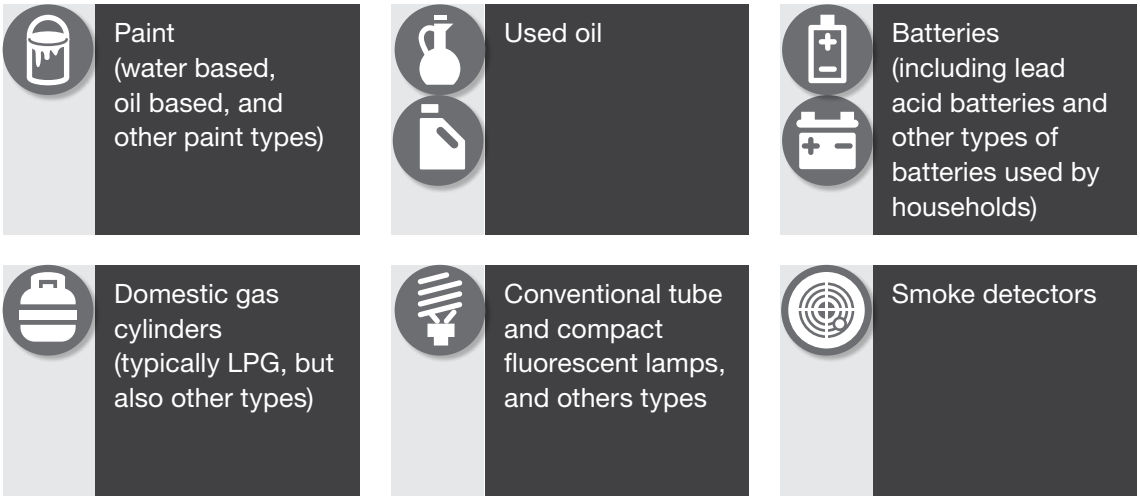
The NSW Environment Protection Authority (EPA) is establishing a network of Community Recycling Centres (CRCs) across NSW. The primary aim of this program is to make it easy for householders in NSW to safely dispose of materials that can be hazardous to the environment or to public health. CRCs are to be designed and operated to temporarily store these materials safely until they can be recycled or disposed of appropriately.

The materials being targeted by the EPA for collection at CRCs are referred to as CRC materials in this Handbook and are listed below.

Facility operators may collect other materials, but are to do so at their own discretion and cost.

The program is aimed at householders, who wherever possible will be able to have their materials accepted at any facility in the network of CRCs. Materials accepted from commercial or business operators will not form part of this program, and their collection and disposal will not be funded by the EPA.

CRC materials



Purpose of this Handbook

The EPA has prepared this Handbook to assist facility owners and operators to establish and operate a CRC. The Handbook outlines minimum standards for infrastructure, risk management, operating procedures, training, record keeping and reporting. These standards require CRC operators to ensure facilities and equipment, processes and documented procedures are in place to protect the health and safety of customers and staff at the facility, and for managing the impact of the facility on the environment.

This Handbook must be kept at the CRC for reference by operations staff.

The Handbook contains the following sections:

1.
Establishing a Community Recycling Centre

Outlines the requirements for locating a CRC, standards for infrastructure, buildings, site control measures, and equipment required for handling materials appropriately.

2.
Risk management

Describes the elements of risk management and how they can be applied to the design and operation of CRCs. A worksheet is provided that can be used by CRC operators to undertake a Risk Assessment and prepare a Risk Management Plan for a particular CRC.

3.
Operating a Community Recycling Centre

Provides procedures to protect the health and safety of customers and staff, and for managing the impact of a CRC on the environment. This includes advice on safe handling of materials and emergency response, that can be used by CRC operators as is or to update their own procedures.

4.
Induction and training

Outlines the requirements for induction and training of staff involved in establishing and operating a CRC. An induction checklist and templates are provided for keeping records of induction and training.

5.
Record keeping and reporting

Outlines the requirements for record keeping and reporting in relation to quantities of materials kept on site and collected, risks, induction and training, and performance self-assessments. Guidance is provided in using the online reporting system for CRCs.

6.
Mobile Community Recycling Centre Operations

Outlines requirements for infrastructure and equipment, storage control measures, procedures to protect the health and safety of customers, and manage the impact on the environment for mobile CRC services.

7.
Important references

Provides a list of important references and links relevant to establishing and operating a CRC.

8.
Safety data sheets

Provides safety data sheets for the hazardous materials received at a Community Recycling Centre.

Emergency contact numbers

(Write in contact details for this CRC)

NSWFB / RFS	
Hazmat	
Police	
Local hospital / medical	
Poisons information	
Local EPA	
EPA contractor for CRCs	

REFER TO EMERGENCY RESPONSE PLAN AND NOTE THE PRIORITY CALL LIST HERE:
(i.e. who to call in what order)

Important contacts

(Write in contact details for this CRC)

Collection contractor	Company: **Toxfree** Address: **40 Christie Street, St Marys NSW 2760** Phone: **1300 869 373** **Primary contact:** Name: **Ian Parkes** Title: **Major Contract Manager** Phone: **02 9851 4200** Mobile: **0409 938 553** Email: **i.parkes@toxfree.com.au** **Alternate contact:** Name: Title: Phone: Mobile: Email:
Local EPA contact	Name: Title: Phone: Mobile: Email: Location: Address:

Council contacts	**Site supervisor:** Name: _____ Title: _____ Phone: _____ Mobile: _____ Email: _____ **Education officer:** Name: _____ Title: _____ Phone: _____ Mobile: _____ Email: _____
Communication and education contact	Location address: _____ Name: _____ Title: _____ Phone: _____ Mobile: _____ Email: _____
Data reporting information	Centre ID: _____ Password: _____ **Registered users:** Name: _____ Login: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

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7. Important references

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1.
Establishing a Community Recycling Centre

General requirements

Infrastructure and building requirements

Site control measures

Collection of deposited materials

Equipment and handling procedures

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Establishing a Community Recycling Centre

1.1 General requirements

1.1.1 Preferred locations

Where drop-off centres for waste and recyclables are already in operation, it is preferable, where practical, that these existing facilities are adapted to establish CRCs.

To ensure ready access and maximise participation by the community, new centres should be located in or close to population centres.

Any adjacent facilities or activities should be taken into account to ensure that any impact on or by the CRC is minimised.

1.1.2 Site management

The council or site operator shall manage the site(s) and be responsible for ongoing risk assessment and management, and adherence to operational procedures.

1.1.3 Community involvement

A desired outcome of the program is for the local community to engage with, and feel welcome at, CRC facilities. The community should clearly understand what materials can be dropped off and where they should be placed.

As the CRCs evolve there may be opportunity for expansion to include additional household wastes that have been identified by the community as a problem waste. Facility operators are encouraged to support activities that will achieve better waste and resource recovery outcomes.

1.1.4 Site approvals and consents

Facilities are to be operated so that the volume of materials held on site remains under 'Manifest' quantities in accordance with applicable regulations and standards. Generally the local council will be the consent authority authorised to deal with Development Approvals (DAs) and other applications if required.

An EPA Environment Protection Licence is required for any activity above the scheduled size for waste storage under the *Protection of the Environment Operations Act 1997* Schedule 1 (42), which is more than 5 tonnes of hazardous waste, restricted solid waste, liquid waste, clinical or related waste, or asbestos waste stored on the premises at any time. The CRC will be designed and operated not to exceed the Schedule 1 thresholds for waste storage.

Where a CRC is established at an existing facility that is currently licensed for solid waste only, the EPA will assist in amending as appropriate the licence to accept liquid and hazardous wastes from domestic sources as described. If a licence amendment is required the CRC operator must advise the relevant EPA office.

Waste levy exemption for facility construction

Where a CRC is located at a waste facility in a regulated area where the waste levy applies on materials entering the site, the facility manager can apply to the EPA for a levy exemption for construction materials such as concrete slabs, footings, roofs, floors, posts and collection infrastructure through the Operational Purpose Deduction. The waste levy guidelines are available at: **www.epa.nsw.gov.au/wasteregulation/waste-levy.htm**.

To apply for these waste levy exemptions contact the EPA Waste Strategy and Innovation Unit at **waste.operations@epa.nsw.gov.au**.

1.1.5 Work Health and Safety

Under the *NSW Work Health and Safety Act* (WHS Act), a person conducting a business or undertaking has the primary duty to ensure, so far as is reasonably practicable, that the health and safety of workers and other persons are not put at risk from work carried out as part of the conduct of the business or undertaking.

The NSW Work Health and Safety Regulations (WHS Regulations) include specific duties for a person conducting a business or undertaking to manage the risks to health and safety associated with using, handling, generating and storing hazardous chemicals at a workplace. The duties applicable to CRCs include:

- correct labelling of containers using warning placards, outer warning placards and displaying of safety signs
- maintaining a register of hazardous chemicals and providing notification to the regulator of manifest quantities if required
- identifying risk of physical or chemical reaction of hazardous chemicals and ensuring the stability of hazardous chemicals
- ensuring that exposure standards are not exceeded
- provision of health monitoring to workers
- provision of information, training, instruction and supervision to workers
- provision of spill containment system for hazardous chemicals if necessary
- ensuring Safety Data Sheets appropriate to the materials being stored are available
- controlling ignition sources and accumulation of flammable and combustible substances
- provision and availability of fire protection, firefighting equipment and emergency and safety equipment
- preparing an emergency plan if the quantity of a class of hazardous chemical at a workplace exceeds the manifest quantity for that hazardous chemical.

Officers, such as company directors, have a duty to exercise due diligence to ensure that the business or undertaking complies with the WHS Act and Regulations. This includes taking reasonable steps to ensure that the business or undertaking has and uses appropriate resources and processes to eliminate or minimise risks that arise from hazardous chemicals at the workplace.

Workers have a duty to take reasonable care for their own health and safety and must not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to the use, handling and storage of hazardous chemicals at the workplace.

1.1.6 Risk management

The quantity of materials held on site (in particular oil based paint) will generally be above the threshold quantities under the NSW Work Health and Safety Regulation. As a result, facility operators must prepare a risk management plan for the drop-off and storage area covering both design and operations, and comply with the placarding signage requirements.

1.1.6.1 Managing the risks of hazardous chemicals

Part 2 of this Handbook provides guidance in identifying, assessing and managing the risks associated with the hazardous materials that are collected at CRCs.

The WHS Act requires CRC operators to consult, as far as reasonably practical, with workers involved in the operation of the CRC in conducting the risk assessments and implementing controls.

The WHS Act also requires that CRC operators consult, co-operate and co-ordinate activities with all other persons who have a work health or safety duty in relation to the same matter, as far as is reasonably practicable. This is particularly relevant where a CRC site has co-located activities undertaken by an external party such as a contractor, or where the CRC is operated by a contractor to the organisation which has established the CRC.

1.1.6.2 Register of hazardous chemicals

CRC operators must ensure that a register of hazardous chemicals is prepared and kept up to date. The register must be readily accessible to workers involved in using, handling or storing hazardous chemicals and to anyone else who is likely to be affected by a hazardous chemical at the workplace. The register is a list of all hazardous chemicals used, handled or stored at the workplace accompanied by the current SDS (one that is not more than five years old) for each hazardous chemical listed. It must be updated as new hazardous chemicals are introduced to the workplace or when the use of a particular hazardous chemical is discontinued.

The online dropoffwaste reporting system is appropriate for use as a register of hazardous materials stored at a CRC.

1.1.6.3 Safety Data Sheets

CRC operators must ensure Safety Data Sheets (SDSs) for the hazardous chemicals being stored at the CRC are obtained as soon as practicable.

CRC operators must also ensure the current SDSs are readily accessible to workers who handle the hazardous chemical at the workplace and emergency service workers, or anyone else, who is likely to be exposed to the hazardous chemical.

The SDSs should be kept in a location near the work area where the substance is stored. All workers likely to be exposed to the hazardous chemical must know how to find the SDS. In some cases it may be practicable to provide workers with access to SDS via an electronic database. However, this should be readily available to workers, workers should know how to use it, and a backup means of providing the SDSs should also be provided, for example as hard copies in a filing system.

The EPA has prepared a set of ten SDSs applicable to the materials that will be received at a CRC. These SDSs are provided at Tab 8 of this Handbook. NSW WHS Regulation 2011 Schedule 7(2) allows SDSs for waste products to be less detailed than those for non-waste products, and this has been taken into account in preparing SDSs for use at CRCs.

The EPA also provides a waterproof box to hold the sheets in a convenient location near the entrance to the CRC building. CRC operators are responsible for installing the box and keeping the SDSs inside it.

The waterproof box is also an appropriate location to hold a copy of emergency response procedures and other associated information.

1.1.6.4 Labels

CRC operators must ensure that containers of hazardous chemicals are correctly labelled. The collection contractor supplies labels for receptacles of CRC materials, and CRC operators must ensure these labels are correctly affixed to the relevant receptacle as soon as it is brought into service. These labels will correctly designate the receptacle both for storage and for transport of the material.

Correct labelling of receptacles as soon as they are brought into service must be included in the Safe Work Method Statements or Safe Operating Procedures for the CRC. Operations staff at the CRC must be trained in correct labelling procedures.

Additional placards as required by Schedule 11 and Schedule 13 of the WHS Regulation must be installed at a CRC. Refer to **Section 1.3.1.2** for more information.

1.1.6.5 Fire and explosion

CRC operators must manage the risk to health and safety associated with a hazardous atmosphere or an ignition source in a hazardous atmosphere at the workplace. This includes preventing ignition sources in the CRC via both design (e.g. intrinsically safe electrical equipment) and procedures (e.g. preventing customers and staff from smoking or using mobile phones in the CRC). Refer to **Part 2** of this Handbook for more detailed information on the fire and explosion risks arising from specific CRC materials.

1.1.6.6 Personal protective equipment (PPE)

PPE includes overalls, aprons, footwear, gloves, chemical resistant glasses, face shields and respirators. CRC operators must ensure that PPE is:

- selected to minimise risk to health and safety
- suitable for the nature of the work and any hazard associated with the work
- a suitable size and fit and reasonably comfortable for the person wearing it
- maintained, repaired or replaced so it continues to minimise the risk
- used or worn by workers, so far as is reasonably practicable.

Staff working in a CRC must, so far as reasonably able, wear the PPE in accordance with any information, training or reasonable instruction.

In most circumstances, PPE should not be relied on to control risk. It should be used only as a last resort when all other reasonably practicable control measures have been used and the risk has not been eliminated, or as interim protection until higher level controls are implemented. There may also be situations when the use of other controls is not practicable.

1.1.6.7 Containing spills

CRC operators must ensure, so far as is reasonably practicable that where there is a risk of a spill or leak of a hazardous chemical in a solid or liquid form, provision is made for a spill containment system. This system must contain within the workplace any spill or leak of a hazardous chemical and any resulting effluent.

When a spill, leak or accidental release of hazardous chemicals occurs, appropriate actions must be taken to contain the hazardous chemicals within the workplace. The spill containment system must describe how to contain, clean up and dispose of the spill or leak and any resulting effluent. The system must not create a hazard by bringing together different hazardous chemicals that would react together to cause a fire, explosion, harmful reaction or evolution of flammable, toxic or corrosive vapour.

1.1.6.8 Maintaining control measures

CRC operators must ensure that the implemented control measures remain effective. This includes checking that the control measures are fit for purpose, suitable for the nature and duration of the work and are installed and used correctly.

They must also ensure that a system used at the workplace for the use, handling or storage of hazardous chemicals is used only for the purpose for which it was designed, manufactured, modified, supplied or installed. It must be operated, tested, maintained, installed, repaired and decommissioned having regard to the safety or workers and other persons at the workplace.

1.1.6.9 Providing information, training, instruction and supervision

CRC operators must ensure that information, training and instruction provided to workers is suitable and adequate to:

- the nature of the work carried out by the workers
- the nature of the risks associated with the work at the time the information, training or instruction is provided, and
- the control measures implemented.

CRC operators must also provide any supervision necessary to protect workers from health and safety risks arising at the workplace, if workers:

- use, handle, generate or store a hazardous chemical
- operate, test, maintain, repair or decommission a storage or handling system for a hazardous chemical, or
- are likely to be exposed to a hazardous chemical.

Information, training, instruction and supervision must be provided not only to workers, but also to other persons at the workplace such as visitors.

Information, training and instruction should include:

- the nature of the hazardous chemicals involved and the risks to workers
- the control measures implemented, how to use and maintain them correctly
- the arrangements in place to deal with emergencies, including evacuation procedures, containing and cleaning up spills and first aid instructions
- the selection, use, maintenance and storage of any personal protective equipment (PPE) required to control risks and the limitations of the PPE
- any health monitoring which may be required and workers' rights and obligations
- the labelling of containers of hazardous chemicals, the information that each part of the label provides and why the information is being provided
- the availability of SDSs for all hazardous chemicals, how to access the SDSs, and the information that each part of an SDS provides
- the work practices and procedures to be followed in the use, handling, processing, storage, transportation, cleaning up and disposal of hazardous chemicals.

Information, training and instruction must be provided in such a way that it is easily understood. The amount of detail and extent of training will depend on the nature of the hazards and the complexity of the work procedures and control measures required to minimise the risks.

Records of training provided to workers should be kept, documenting who was trained, when and on what.

1.1.6.10 Emergency preparedness

CRC operators must prepare an effective emergency plan for the workplace. The purpose of the emergency plan is to plan for, and thus minimise the effects of, any dangerous occurrence or near miss at a workplace resulting from handling of hazardous chemicals.

The emergency plan should have provision for notifying appropriate authorities and any neighbours of the CRC that may be affected.

1.1.7 Insurance

The facility operator is to maintain adequate property, public liability, and workers compensation insurance cover for the facility and its operations.

1.1.8 Site appraisal

Upon acceptance of an Environmental Trust grant the CRC operator must provide a copy of the site plan and designs to the EPA's Community Recycling Unit for approval before construction commences. The EPA will appraise each site and provide comment on design plans and designs for the facility and its operations. Prior to the opening of each facility the EPA will provide training for site staff including guidance in conducting risk assessments.

1.1.9 Site layout and access

The site layout should support the safe and smooth flow of traffic through the facility, minimise customer waiting times, reduce the likelihood of congestion, and provide the minimum possible distances that customers need to carry materials they are delivering to the facility.

The facility should have separate entry and exit points for householder vehicles, and accessible parking immediately adjacent to the storage receptacles for materials.

The facility should provide sufficient space for truck and forklift movements including allowance for turning circles. The facility should have enough room to safely and easily move full receptacles into a storage area and to replace them with empty receptacles. It should also allow sufficient area for the loading of full storage receptacles for transport. The layout of the facility should as far as practicable ensure that truck, forklift, and customer vehicle movements do not intersect when materials are being collected. The separation of these site users may also be achieved by suitable operational procedures that are based on a risk management approach.

If a CRC is established at a works depot or other similar site where it is not desirable to allow householders access, consideration could be given to providing a drop-off area just inside the perimeter of the site that is adjacent to an external roadway. In this situation the facility layout must ensure that material storage areas can be secured out of hours.

All facility operators must obtain concept design advice from the EPA which can assist to ensure the proposed layout is operationally sound and conforms to the relevant Australian Standards. The EPA's Community Recycling Unit must approve the initial concept design and the final design. Funding may be withheld or delayed without these approvals.

1.1.10 Opening times

A considerable degree of latitude will be granted to the site host in regard to opening times. However, as a minimum it is expected that the site is supervised during householder access times which should be a minimum of 2 days during the week and 3 hours on some part of the weekend. Ideally operation 7 days per week is preferred to maximize availability and convenience for residents. Consistent and regular opening times are also preferable to encourage use by residents.

Depending on the site it may be necessary to close during periods where the receptacles are being moved or collected for the safety of members of the public and staff. Opening times for each specific centre will be incorporated into the agreement between the EPA and the facility operator.

1.1.11 No charge to householders

All materials accepted under this program are to be accepted at no charge to the householder whilst the EPA is paying the collection and processing costs. An existing facility that currently accepts the targeted materials at a charge to the householder must cease charging to be eligible for support under the CRC program.

1.2 Infrastructure and building requirements

The materials accepted should be stored out of the weather. As a minimum requirement materials are to be stored in a well-ventilated shed consisting of three sides and a roof, on a concrete or bitumen sealed surface, and with sufficient awning overhang on the open side to prevent rain ingress and provide cover for householders unloading. An appropriately designed building may also be used for storage where it has adequate forklift access and ventilation.

1.2.1 Receiving area and roadway surfaces

All surfaces where target materials are to be unloaded from householder vehicles and deposited in the storage receptacles must be sealed to contain inadvertent spills. Road surfaces should be designed and reinforced to withstand the loads applied by repeated use by heavy vehicles such as trucks collecting materials, and forklift movements, without degradation. Drainage in the immediate area should be designed and managed to prevent any spillages from entering waterways. Drainage should also be provided to minimise flooding from heavy rain within the unloading and storage areas, and within the approaches and exits from these areas.

1.2.2 Rain cover

The facility structure should provide protection from the weather, including a covered area where materials are accepted and moved from customers' vehicles to storage receptacles. Where it is intended or likely that the collection vehicle will pass under this area then it must have a minimum height of 5 metres.

1.2.3 Ventilation

Ventilation is a means of maintaining a safe atmosphere by the introduction or recirculation of air by natural, forced or mechanical means. Maintaining a safe atmosphere in the storage and handling area of hazardous chemicals is an important control measure. A CRC building or structure must be provided with adequate natural or mechanical ventilation. Natural ventilation is preferred and can be achieved by providing:

- at least two external sides completely open to the outside atmosphere
- one external side completely open to the outside atmosphere, with no other vents, provided that the distance to and the length of the opposite wall do not exceed the length of the open side
- one external side open to the atmosphere, and vents in one opposite or adjacent wall
- vents in one external wall, provided that such a wall is at least 6m long and the opposite wall is not more than 5m away from it
- vents in opposing walls.

Open or mesh sides with adequate roof overhang are recommended for natural ventilation. If an enclosed shed is to be used for either drop-off of materials and/or storage of full receptacles, vents are to be included at both the top and bottom of the shed walls and should be louvered to provide weather protection.

For guidance on providing ventilation, refer to *AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers*.

The storage of LPG gas cylinders requires unconfined air space, and in most cases locating the receptacle cage external to a building (if used) will be most appropriate.

1.2.4 Arrangement and nominal size of facility

The CRC program targets six material groups (in nine separate storage receptacles).

AS/NZ53833:2007 specifies that incompatible dangerous goods must be segregated. Receptacles used at CRCs should provide adequate segregation. However, as lead acid batteries (corrosive class 5) are usually not placed in a receptacle, they should be segregated from other materials, and in particular from LPG cylinders by a distance of at least 3 metres.

A typical arrangement for the nine storage receptacles is in a straight line including walking space between the receptacles. This would require an unloading length of between 16 and 18 metres. A roofed area of around 70 to 100 square metres is suitable for initial operation of an average size facility. However, the structure or area in which the CRC is located may be larger and may have multiple uses particularly if other materials are accepted.

Nominal dimensions above represent minimum requirements. Centres that serve large population centres may require larger areas than described above.

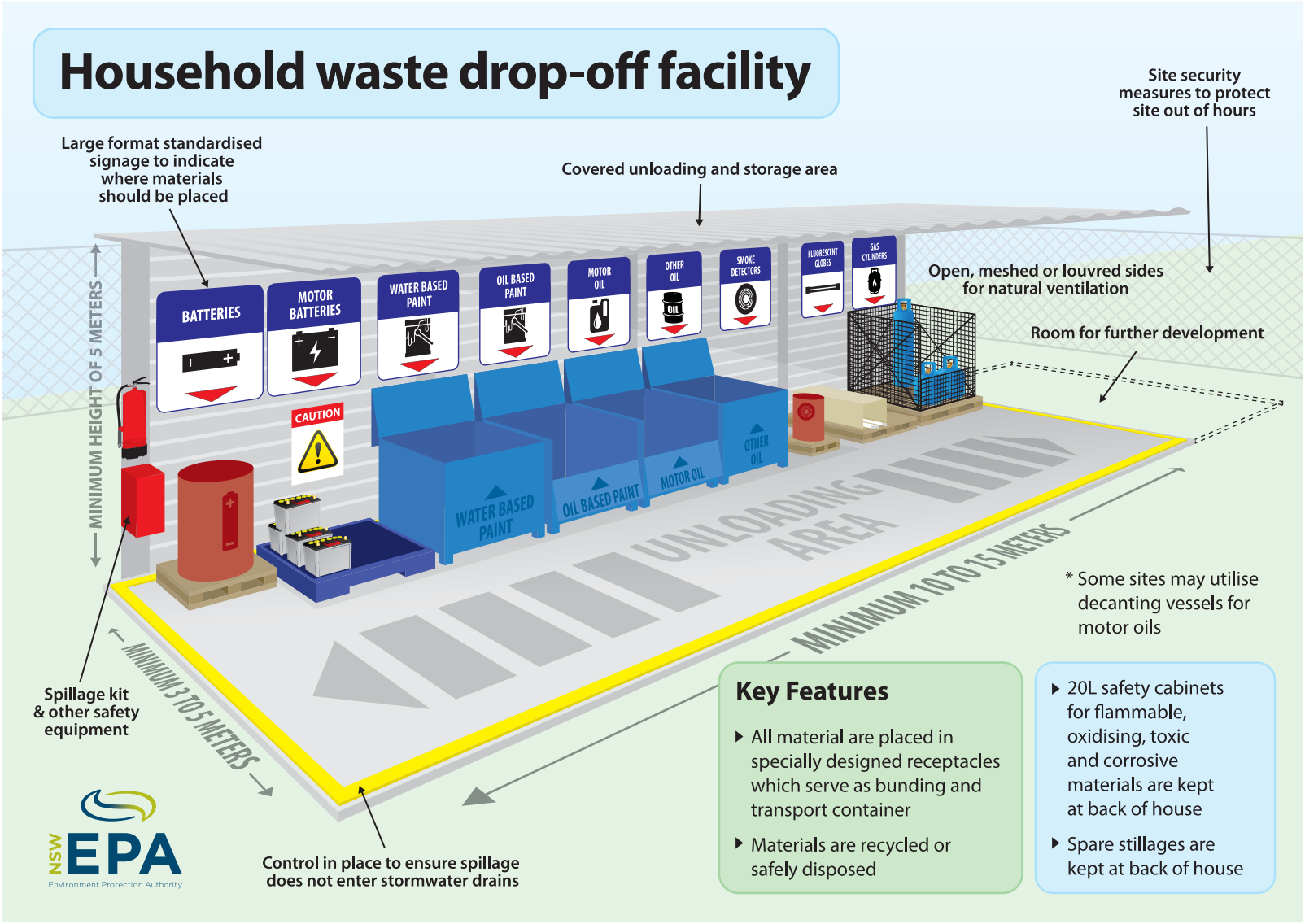
Further guidance on sizing a new CRC is provided in **Appendix 1.1** of this Handbook. An indicative layout of receptacles for the facility is illustrated in **Figure 1.2.4**.

1.2.5 Storage area for full and replacement receptacles

A separate area, or areas, is required for storage of full and replacement storage receptacles as well as safety cabinets for by-catch materials. This area should be secured from the drop-off area by a lockable gate if possible. Storage for the full receptacles requires adequate rain cover whether by roofing or tarpaulin. Storage of full and empty receptacles (also referred to as 'back-of-house') will typically require an area of 6m by 3m, and safety cabinets for by-catch will typically require an area of 6m by 1m.

Sufficient area must be provided to allow for easy movement of storage receptacles by forklift within the unloading and storage areas.

Figure 1.2.4 – Indicative layout for a Community Recycling Centre



1.2.6 Dangerous Goods Safety Cabinets (DGSC)

Irrespective of gate policies and dedicated signage, a small percentage of non-targeted by-catch materials can be expected. Separate dangerous goods safety cabinets compliant with the relevant Australian Standards for flammable, oxidising, toxic and corrosive materials will be provided by the EPA during establishment of the facility.

The DGSC are to be kept in a separate secured area out of sight from the main drop-off area to discourage the delivery of non-target materials, and should not be accessible to members of the public. The cabinets are only to be moved when empty to avoid spills and damage to the cabinet. The cabinets should remain on pallets supplied for ease of movement by forklift if required.

The appropriate primary Australian Standard for Community Recycling Centres – *AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers* has specific requirements relating to the use of cabinets for the storage and handling of mixed classes of dangerous goods. These include requirements relating to the types of substances kept, the maximum quantities to be kept, cabinet construction, cabinet location, and cabinet marking.

Where the quantity of dangerous goods being kept in the cabinet(s) is less than minor storage quantities as defined by AS/NZS 3833:2007, these requirements are advisory but should be implemented at CRCs. **Table 1.2.6**, extracted directly from this standard, outlines the maximum quantities for minor storage. Although the preferred approach to the storage of by-catch at CRCs is that minor storage quantities should not be exceeded, there will be circumstances where these will be exceeded, and these requirements must be met.

Box 1 on page 14 shows the requirements of the standard for minor storage, and Box 2 on page 15 shows the requirements of the standard where the quantities for minor storage are exceeded. These requirements should be considered during the design of the CRC. **Note these requirements are summarised for information here – the full standard should be referenced when designing a CRC.**

Table 1.2.6 – Maximum quantities for minor storage

Description	Quantity: kg or L		
	Packing Group I	Packing Group II	Packing Group III
Total quantity of all dangerous goods	25	250	1,000

Notes:

1. It is permissible to store, at the same time and in the same area, the maximum allowance for each of all the Packing Groups. Refer to Box 3 on page 16 for an explanation and examples of packing groups.
2. Where manufactured product is stored, the quantities of manufactured product may be doubled.
3. The maximum quantity of Class 5.2 dangerous goods (organic peroxides) allowable as minor storage is 10kg or L.
4. For the purpose of determining minor storage quantities Class 2 dangerous goods in retail packages, aerosols, and substances and articles of Class 9 are regarded as Packing Group III.

Arrangement of Dangerous Goods Safety Cabinets (DGSC)

In most instances the total capacity of the DGSC will be less than the requirement for minor storage. Where the total capacity of these cabinets is greater than this, the cabinets are to be arranged as two or more minor stores.

These minor stores must be:

- separated by more than 10m from any other dangerous goods store
- located to ensure there is not more than one minor store per 500m^2 of floor or ground area
- at least 10m apart.

Like types of DGSC are to be kept together.

As an example the following arrangement would be appropriate.

Table 1.2.6.2 – Example of arrangement of DGSCs as two minor stores

	Cabinet Capacity	Number of Cabinets	Total Capacity
Minor Store 1			
Flammable Liquid	250L	2	500L
Toxic	250L	1	250L
Total			**750L**
Minor Store 2			
Oxidising Agents	250L	1	250L
Corrosives – Acids	250L	1	250L
Corrosives – Alkalis	250L	1	250L
Total			**750L**

Box 1 – Summary of requirements of AS/NZS 3833:2007 in relation to minor storage

Classification as minor storage

Less than or equal to maximum quantities for minor storage **(Table 1.2.6)**

Separated by more than 10m from any other dangerous goods store.

Not more than one minor store per 500m^2 of floor or ground area.

Minor stores shall be at least 10m apart.

Precautions applying to minor storage

Any materials that are incompatible or might react dangerously, are segregated.

Storage areas shall be away from heating and ignition sources.

Storage areas shall be provided with adequate natural or mechanical ventilation.

Packages shall be kept closed when not in use, and only opened in a well-ventilated area. If their contents are flammable, packages shall be kept away from potential ignition sources.

Appropriate spill control measures shall be provided where packages are opened and their contents transferred.

Any spills or leaks shall be cleaned up immediately and disposed of appropriately in accordance with Section 10 of this handbook. Contaminated, spilled or leaked material shall not be returned to original packaging, except for disposal where it is known that this will not increase the risk.

Dangerous goods shall not be stored or handled where they could hinder escape from a building in the event of fire.

Persons who handle dangerous goods are informed and aware of the hazards involved.

Packages are to be kept in such a manner as to avoid spillage.

Stores are to be kept clear of combustible matter and refuse.

Packages must be kept on surfaces that are resistant to attack by their contents if spilt.

Appropriate personal protective equipment is to be worn by personnel involved in product transfer or clean-up operations.

A fire extinguisher of a suitable type must be installed in each minor store. It should be located so that it is immediately accessible in an emergency, along an exit route.

A supply of water must be available at a nearby location for personal hygiene.

Additional precautions for outdoor minor storage

The ground around the storage area shall be kept clear of combustible vegetation and refuse by at least 3m.

Any potential flow of spillage shall be prevented from reaching any protected place, watercourse or boundary by such means as the use of natural ground slope, or the provision of a diversion channel, kerb or bund.

The store shall be separated from any protected place or property boundary by at least 3m.

Box 2 – Summary of requirements of AS/NZS 3833:2007 in relation to storage in cabinets where minor storage quantities are exceeded

Type of substances kept

Cabinets may be used for the storage of packaged dangerous goods of Classes 3 (Flammable Liquids), 5 (Oxidising Agents), 6.1 (Toxic Materials) and 8 (Corrosive Substances).

Maximum quantities to be kept

Where a storage cabinet is used as a means of segregating a single class within a mixed class store, the maximum quantity of the class kept in the cabinet must not exceed 850kg or L.

Cabinet location

Cabinets must be located so that they do not impede escape in an emergency.

Cabinets having a capacity greater than 250L:

- should only be installed on floors that have direct access from street or ground level;
- shall not be installed in residential or accommodation buildings, commercial buildings, hospitals, aged care buildings or school buildings;
- shall not be placed nearer than 3m to any wall that is common with another room unless that wall is constructed of concrete or masonry to ceiling height or 3m above the top of the cabinet.

The aggregate capacity of cabinets shall be no greater than 850L per 250m^2 of ground floor area, and 250L per 250m^2 on other floors.

Exclusion of ignition sources

There should be no ignition sources within the cabinet. Ignition sources must be excluded from the area outside the cabinet where flammable and dangerous goods are stored. This exclusion area should be to a distance of 3m measured laterally, and from the floor to a height of 1m above any opening in the cabinet, including the door opening.

Cabinet marking

Cabinets must be marked with placards in accordance with Schedule 13 of the NSW Work Health and Safety Regulation 2011, and provided with warning signs as appropriate. **Section 1.3.1.2** provides further information on placarding.

Box 3 – Explanation and examples of Packing Groups (PG)

Substances are assigned to three packing groups in accordance with the degree of danger they present:

- Packing Group I: Substances presenting high danger
- Packing Group II: Substances presenting medium danger
- Packing Group III: Substances presenting low danger.

The Packing Group to which a substance is assigned is indicated in the Dangerous Goods List in Chapter 3.2 of the Australian Dangerous Goods Code.

Note that substances listed in the ADG Code under Classes 1 (Explosives), 2 (Gases) and 7 (Radioactive Materials), Divisions 5.2 (Organic peroxides) and 6.2 (Infectious substances), and other than self-reactive substances of Division 4.1 (Flammable solids, self reactive substances and solid desensitized explosives) are not assigned Packing Groups.

Examples of Packing Group I

Arsenical pesticides (may be PG I or II)	Hydrofluoric acid (> 60% strength)
Hydrogen peroxide (> 60% strength)	Strychnine

Examples of Packing Group II

Acetone (nail polish remover)	Some arsenical pesticides
Methyl ethyl ketone (common solvent)	Hydrofluoric acid (<60% strength)
Hydrogen peroxide (> 60% strength)	Isopropyl alcohol
Lithium batteries	Methanol
Concentrated hydrochloric acid	Petrol

Calcium hypochlorite ('solid pool chlorine'), with > 39% available chlorine

Potassium permanganate crystals or powder

Solid caustic soda (may be a component in drain cleaners)

Some solvent based paints

Sulphuric acid (any concentration except fuming)

Examples of Packing Group III

Some solvent based paints	Lead-acid batteries
Kerosene	Perchloroethylene (dry cleaning liquid)
Ethyl alcohol (<70% strength)	Hydrogen peroxide (8-20% strength)
Metallic mercury	Naphthalene (old-style mothballs)
Dilute hydrochloric acid	Turpentine

Calcium hypochlorite ('solid pool chlorine') with 10-39% available chlorine

1.3 Site control measures

The layout of the facility, signage, storage control measures, and interaction with staff at the facility should work together to ensure that householders are welcomed. Site visitors should clearly understand what materials they can drop-off at the facility and where they should do so, and clearly understand where they can take materials that are not accepted by the facility.

1.3.1 Signage

CRC branded signage must be used at the centre. Artwork for all signage is provided by the EPA and is online at **epa.metrographics.com.au** Contact **recycling.centres@epa.nsw.gov.au** to request an account for access or if you require graphic design support to update and customise your signage.

1.3.1.1 CRC program signage

Entry sign

A CRC branded entry sign which includes opening times and contact details must be installed at the entry gate to the facility. This may be on the roadside or facility gate or both.

Shed sign

A CRC branded sign must be installed on the building. This is a simplified version of the entry sign.

Funding acknowledgement

Signage acknowledging the NSW EPA and Environmental Trust must be installed on the CRC building.

Directional signage

Directional signage has been developed to help users navigate the CRC site and easily locate the CRC. This signage is particularly useful if the CRC is located within a larger waste management site. Please use judgement when selecting which directional signage is appropriate for the site.

If appropriate, arrows showing the direction customer vehicles are to travel to and through the CRC can be painted on the pavement leading to and inside the CRC building.

Material signs

Artwork has been developed for all of the material types that can be collected at the CRC.

Large format icons (1mx1m) are intended to be positioned above each receptacle. The large format signage includes pictorial and text descriptors.

The EPA will provide all artwork in electronic format. Customisable artwork such as the entry sign and any new artwork must be reviewed and approved by the EPA prior to printing and installation. Artwork is also available for many materials that are not targeted by the EPA's household problem wastes program.

1.3.1.2 Hazardous chemicals placarding

Placarding compliant with the NSW Work Health and Safety Regulation 2011 is to be installed at the facility. An outer warning placard, or HAZCHEM sign, is required at the entrance of the facility, and must remain visible when the entry gate is open or closed. Information placards must also be placed where the chemicals are stored. These placards are included on the labels that must be affixed to each storage receptacle as soon as it is brought into usage. On some receptacles the adhesive label is obscured when the receptacle door is open for use. Additional magnetic labels indicating material type should be placed on a visible portion of these types of receptacles when they are in use. More information on placarding can be found in the SafeWork NSW Fact Sheet available at **www.safework.nsw.gov.au/media/publications/health-and-safety/placarding-for-storage-of-hazardous-chemicals**.

Signs must comply with *AS 1216-2006 Class labels for dangerous goods*.

1.3.1.3 Warning signs

The following signs need to be displayed:

- A warning sign to prohibit smoking and to exclude other ignition sources, e.g. **DANGER: NO SMOKING, NO IGNITION SOURCES.**
- A warning sign to restrict entry to the storage area and the dangerous goods storage area as appropriate, e.g. **RESTRICTED AREA, AUTHORISED PERSONNEL ONLY.**
- Warning signs to control customer behaviour, e.g. **LEAVE CHILDREN IN VEHICLE, SWITCH OFF ENGINE, SWITCH OFF MOBILE PHONE.**

These signs must have lettering that contrasts with the background, and be clearly legible from any access point to the CRC. Signs must comply with *AS 1319-1994 Safety signs for the occupational environment.*

1.3.1.4 Signs showing location of safety and personal protective equipment

Signs showing the location of safety equipment including first aid, fire extinguishers, safety shower and eyewash, and personal protective equipment must also be installed in accordance with the relevant Australian Standards.

1.3.2 Storage control measures

All CRC materials delivered to the facility shall be contained by placement in specially designed storage receptacles that are provided by the EPA's collection contractor.

Storage receptacles must be appropriate to the class of material being stored and transported. Receptacles are typically collapsible steel-frame containers with plywood sides, fully welded steel boxes for paint and oils, cages for gas bottles, drums for batteries and smoke detectors and various boxes for fluorescent tubes. Storage receptacles must be approved segregation devices in accordance with the Australian Dangerous Goods (ADG) Code.

Products containing liquids such as used oil and lead acid batteries must be stored in purpose built storage receptacles that provide bunding to an acceptable Australian standard.

Materials accepted (with the exception of used oil when a decanting operation is used) should be stored in their original packages, as brought in by householders. Packages should then be neatly stacked directly into the storage receptacles, so that these receptacles can be picked up for recycling without the need for repacking.

Leaking containers should be over wrapped in a plastic bag before removing from vehicle. Leave the leaking container in the plastic bag and place in the appropriate receptacle.

The number of storage receptacles will be controlled to limit the total volume of materials held on site. This will minimise risks and may remove any need for licence amendments relating to waste storage limits by keeping the quantity of hazardous materials stored at any one time under 5 tonnes.

Householders are required to separate water based and oil based paints by placing them in separate storage receptacles. If unsure of paint type then place in the oil based paint receptacle.

1.3.3 Safety equipment

The following safety equipment must be provided within the CRC:

- Safety shower and eyewash
- Spill response kit
- Fire extinguishers
- Personal protective equipment (PPE)
- First aid equipment and supplies.

Procedures must be implemented to regularly:

- test the operation of the safety shower and eyewash
- check and replenish the first aid equipment and supplies
- check and replenish the PPE
- check and replenish the spill response equipment.

Spill response equipment should include adequate quantities of suitable absorbent materials. This includes a sufficient quantity of resealable waste recovery containers compatible with the substances being kept, marked for emergency use only, and shovels, brooms and scrubbing brushes. Spill response equipment must be located at both the drop-off area and the storage area.

Dry chemical powder type fire extinguishers are appropriate for all types of CRC materials except for cooking oil, for which a wet chemical type is more appropriate. It is the CRC operator's responsibility to ensure this equipment is on hand. Refer to *AS 2444-2001 Portable fire extinguishers and fire blankets – Selection and location* for guidance on the selection and location of fire extinguishers.

1.3.4 Safety and environmental management procedures

1.3.4.1 Safe Work Method Statements

Established processes and documented procedures such as Safe Work Method Statements (SWMSs) or Safe Operating Procedures (SOPs) should be in place to protect the health and safety of customers and staff at the facility, and for managing the impact of the facility on the environment.

These should include procedures and equipment for safe handling of materials (such as Personal Protective Equipment and Safety Data Sheets) and emergency response (such as fire detection and protection, safety shower, spill response kit and first aid equipment).

They should also outline how public and staff safety will be ensured when moving storage receptacles and loading service vehicles.

All staff involved in the operation of the CRC must be trained in the use of the SWMSs and must sign off as having been trained and agreeing to undertake the relevant tasks safely in accordance with the SWMSs.

1.3.4.2 Emergency plan and procedures

An emergency plan must be prepared to minimise the effects of any dangerous occurrence or near miss at a CRC resulting from handling of hazardous chemicals.

When preparing an emergency plan consideration should be given to:

- procedures that include:
  - an effective response to an emergency
  - evacuation procedures
  - notification procedures to advise emergency services organisations at the earliest convenience
  - medical treatment and assistance
  - communication between the person coordinating the emergency response and all persons at the workplace
- the testing of procedures, and how often this will be done
- how relevant workers will be provided with information, training and instruction about implementing the emergency procedures

A comprehensive emergency plan should include:

- a site map showing where hazardous chemicals are stored
- responsibilities of key persons in managing emergencies
- circumstances to activate the plan
- systems for raising the alarm
- estimating the extent of the emergency
- alerting emergency services organisations to the emergency, or a situation with the potential to become a dangerous occurrence
- procedures that account for all people at the workplace
- isolation of the emergency area to prevent entry by non-essential personnel

- roles of on-site emergency response teams (including first aid officers, emergency wardens) in the containment of any spillage
- the requirement for fire-water retention to ensure that contaminated fire-water cannot enter waterways, drains or ground water
- disconnection of power supplies and other energy sources except when required to maintain safety of a critical operation or to run emergency equipment such as fire booster pumps
- prevention of hazardous chemicals or contaminated material of any kind from entering drains or waterways
- provision of relevant information and assistance to the emergency services authority, both in anticipation of emergencies and when they occur
- notification of regulatory authorities, as required by law
- liaison with any neighbours of the CRC, as appropriate
- maintenance of site security throughout the emergency
- provision for dealing with the public and the press
- site rehabilitation requirements.

The extent of emergency procedures required will depend on the size and complexity of the workplace, types and quantities of hazardous chemicals and the processes involved when the goods are in use. As a minimum, emergency procedures should include instructions on:

- how to raise the alarm, including how to contact the appropriate emergency services organisation
- any actions to be taken by workers to ensure the safety and health of all persons at the workplace to minimise risks, damage to property as well as the environment
- any actions to be taken by prescribed persons such as fire wardens, for example how to evacuate the workplace or use fire extinguishers.

To be effective, workers need to be appropriately trained, and any procedures tested. Workers should be consulted and ideally directly involved in the development of emergency procedures.

An effective emergency procedure could be a simple one-page document of dot points detailing evacuation procedures, assembly areas, identifying first aid officers and emergency wardens at the workplace, contact numbers of emergency services organisations (such as fire brigade, police, ambulance, local hospital and regulatory authorities).

Copies of the Emergency Plan must located near the CRC and near the entrance to the facility.

1.3.4.3 Procedures for handling commercial waste

CRCs must not accept commercial or business waste. CRC operators must prepare and implement procedures to identify and separate commercial and business waste from household waste. If the CRC is located at a facility that accepts business or commercial waste under no circumstances should this waste be accepted at the CRC.

1.3.5 Staffing levels and operator qualifications and training

Dedicated full time supervision of the CRC is not necessary. However, it is expected that the CRCs are located within a site where adequate overall supervision is available by appropriately qualified and trained personnel.

In particular, supervision needs to be sufficient to prevent the acceptance of hazardous materials, or waste, dropped off from commercial or business activity, at the CRC.

1.3.6 Security

The sites must be secured to prevent unauthorised access out of hours. In some cases closed circuit surveillance (CCTV) may be warranted to discourage vandalism or illegal dumping.

1.3.7 Materials register

The facility should have processes and procedures in place to ensure an accurate register of materials stored is maintained and kept up-to-date, and is easily accessible in the event of an emergency.

1.3.8 Data management and reporting

Records of the quantities of each type of material accepted under this program are to be kept and reported to EPA using the online reporting system. Reporting is required at minimum on a weekly basis for an overall site capacity update, and every single occasion an EPA designated or EPA authorised third party organisation contractor collects targeted materials. In the case of lead acid batteries and used motor oil that is not collected by the EPA contractor, the means of recycling (processing and end-use) is also to be reported.

1.3.9 Specialist advice

The EPA will establish and maintain contracts for the provision of specialist advice and support arrangements in the event of unknown materials being deposited, and other unexpected or emergency situations. The CRC operator is to ensure their operating and emergency procedures appropriately reference this specialist advice.

1.3.10 Auditing

The EPA may, at its discretion, audit facilities to verify any aspect of facility design or operations including determining quantities of materials accepted, record keeping, acceptance and storage procedures, staffing and supervision, and charging of customers. Facility operators will be expected to provide full access and cooperate with the EPA in undertaking any audit.

1.4 Collection of deposited materials

1.4.1 Contracts to collect and recycle or dispose

The EPA will establish and maintain contracts for the collection and recycling (or disposal) of paint, used oil (other than motor oil), gas cylinders, household batteries, smoke detectors and fluorescent lights, as well as incidental by-catch for the duration of the program.

The facility is required to have a forklift on site to change over receptacles, move receptacles to and from the storage area, and to load the collection contractor's vehicle. If for some reason the forklift is not available, the collection contractor should be notified well in advance of collection.

The facility operator will be responsible for arranging the storage, collection and recycling (not disposal) of lead acid batteries and used motor oil. The facility operator will be required to record the quantities of lead acid batteries and used motor oil received at the facility, and report these quantities to EPA with reports on other materials.

1.4.2 Collection of other materials (facility operator's discretion)

It is envisaged that over time, many of the CRCs will evolve to become community based recycling centres collecting a wider range of targeted materials for recycling, sale, exchange or distribution as the facility operator deems fit.

Where existing facilities are to be adapted to accept materials targeted by this program, facility operators are encouraged at their own discretion to continue their current resource recovery activities and constantly seek higher order outcomes.

1.5 Equipment and handling procedures

The facility should have procedures in place to ensure that customers deliver only materials that are accepted at the site, and that these materials are handled by customers and staff in a safe and secure manner. Materials should be separated into different areas in a manner appropriate for compliant storage and ease of loading for transport.

Refer to **Section 3** of this Handbook (Operating a Community Recycling Centre) for more information on the specific requirements for acceptance and storage of CRC materials, non-targeted by-catch materials, and unknown materials.

Appendix 1.1: CRC sizing and collection frequency

The requirements of the NSW Workplace Health and Safety Regulation 2011 are applicable to CRCs as they store materials considered by the regulation as hazardous chemicals. The regulation establishes requirements for the safe use, storage and handling of hazardous chemicals as classified under the UN Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Some of the requirements depend on the quantity of hazardous chemicals stored. If more than placard quantities of hazardous chemicals are stored, outer warning placarding and placarding of the particular hazardous chemicals (349 and 350) is required. If more than manifest quantities are stored, provision of a manifest and site plan (347), and notifying the regulator of this situation (348) is required.

Placard and manifest quantities for materials to be stored at CRCs are shown in **Table A1.1(a)** below. The classifications of these materials under the Australian Dangerous Goods Code (ADG) and the GHS are also shown.

Table A1.1(a): Placard and manifest quantities for materials stored at CRCs

Material	ADG Class	GHS classification	Placard quantity	Manifest quantity
Batteries – household				
Lithium ion	9 Miscellaneous	None	No limit	No limit
Other types	None	None	No limit	No limit
Batteries – lead acid[1]	8 Corrosive: packing group II	Skin corrosion: category 1A	250kg or L	2,500kg or L
Fire extinguishers	2.2 Compressed gases	Compressed gas	1,000L	10,000L
Fluorescent tubes and light fittings[2]	6.1 Toxic: packing group II	Acute toxicity – Category 1	250kg	2,500kg
Gas cylinders LPG or propane	2.1 Flammable gas	Flammable gases category 1	200L	5,000L
Oil – heating	3 Flammable liquid: packing group III	Flammable liquid: category 3	1,000	10,000L
Oil – motor and cooking	None	None	No limit	No limit
Paint – water based	None	None	No limit	No limit
Paint – oil based	3 Flammable liquid:	Flammable liquid:		
	Packing group II	Category 2	250L	2,500L
	Packing group III	Category 3	1,000	10,000L

[1] Although fluorescent tubes and fittings packed for retail distribution are not considered dangerous goods, good practice for waste lamps is to consider them as mercury containing waste, or Mercury Compounds N.O.S. which is classified as 6.1 Toxic under the ADG Code.

To ensure that the requirements for the design and operation of CRCs are manageable, the quantity of materials stored should be kept below manifest quantity.

The quantity stored at a particular CRC will depend on the population served and the frequency with which it is emptied. Data from earlier modelling based on similar programs in Victoria and Western Australia have indicated that for a population of 50,000 a CRC can typically be expected to receive the quantities indicated in **Table A1.1(b)**. The sizing and frequency of collection for a particular centre should take into account these quantities and the manifest quantities in **Table A1.1(a)**.

The material of most concern is oil based paint which, if considered as all Packing Group II, would require a collection frequency of every seven weeks for the quantity stored to remain below manifest quantity. The next most frequent collection is required for lead acid batteries, every 17 weeks to remain under manifest quantity.

Table A1.1(b): Typical quantities of materials anticipated at a CRC serving 50,000 people and calculated collection frequency

Material	Quantity tonnes per year	Quantity kilograms per week	Collection frequency weeks
Batteries – household	0.07	2	NA
Batteries – lead	9	150	17
Fire extinguishers	0.14	3	> 52
Fluorescent tubes and light fittings	0.71	15	> 52
Gas cylinders – LPG and propane	3.6	100	> 52
Oil	8.6	200	NA
Paint – water based	30.0	600	NA
Paint – oil based	19.1	400	7
Total	**71.22**	**1,470**	

In the early stages of the program, the smaller number of CRCs will serve populations larger than 50,000, hence the quantities received may be higher, resulting in the need for more frequent collections. The figures provided in **Table A1.1(b)** are therefore a guide, and actual quantities will need to be monitored to determine the appropriate collection frequency.

Consideration of manifest quantities provides a useful guide for the sizing and design of these facilities.

The collection frequency noted above is presented to highlight which materials may trigger the need for a collection. The collection contractor will remove all full (or near full) receptacles at each pick up.

Appendix 1.2: Site establishment checklist

Aspect	Element
1 Location	
1.1 Adjacent activities	• What is located adjacent to the site that may be impacted on or may impact the CRC? • Have appropriate controls been established to manage these impacts?
1.2 Co-located activities	• What other activities are taking place on the site that may be impacted on or may impact the CRC? • Have appropriate controls been established to manage these impacts?
2 Layout	
2.1 Traffic flow	• Does the site provide for safe and smooth flow of traffic, separate entry and exit points, and space for truck and forklift movements?
2.2 Location of receptacles	• Has double handling of materials been minimised and have the receptacles been placed in the most convenient location for customers?
2.3 Space for collection contractor vehicles	• Is there sufficient space for manoeuvring trucks removing materials?
3 Infrastructure	
3.1 Road and building	• Does the facility comprise hard surfacing, rain cover (minimum 5m high if collection vehicles are required to fit underneath), drainage, buildings, storage areas, and appropriate bunding?
3.2 Ventilation	• Is there adequate ventilation provided in both drop-off area and storage areas?
4 Signage	
4.1 Directional	• Have appropriate entry / directional signs been installed?
4.2 Safety	• Have appropriate HAZCHEM / placarding / safety signs been installed?
4.3 Material designation	• Are signs designating material type included and are they the correct size (1m x 1m)? • Are the signs clearly visible to CRC customers and operators?
4.4 Acknowledgement	• Has EPA and Environmental Trust acknowledgement signage been installed?

Aspect	Element
5 Storage	
5.1 Core materials	• Is there a sufficient quantity of appropriate storage receptacles available? • Are separation distances appropriate e.g. gas cylinders separated from lead-acid batteries? • Is sufficient space allocated for storing empty and full storage receptacles?
5.2 Used oil	• If used oil is decanted on site, have appropriate facilities been installed?
5.3 By catch	• Have by-catch cabinets been installed in a suitable location (i.e. not clearly visible to CRC customers)?
6 Safety and emergency response	
6.1 Equipment	• Is appropriate safety equipment and information in place and operational – safety shower, first aid, SDSs, safety procedures? • Is appropriate emergency response equipment (spill kit, fire extinguishers) and procedures in place?
6.2 Procedures	• Are workplace health and safety procedures in place? • Is there an appropriate emergency response plan?
7 Security	
7.1 Infrastructure	• Has appropriate security been provided (fencing, gates, CCTV, locking procedures and times)? • Has a CCTV system been installed, and if so, is it working and monitored appropriately?
8 Staff and training	
8.1 Staff numbers	• Are staffing levels appropriate? • How many staff are available for the CRC?
8.2 Training	• Have all staff completed a site induction, safe work method procedure training, and training by the collection contractor on safe handling of materials and procedures for material collection?
9 Operations	
9.1 Guidance for customers	• Are appropriate arrangements in place to note and direct customers to the CRC (e.g. weighbridge log)? • Are customers required to place their materials in the appropriate receptacles?
9.2 Labelling of receptacles	• Are appropriate arrangements in place to ensure receptacles are labelled correctly at the time they are brought into service?

Appendix 1.2: Site establishment checklist *(continued)*

Aspect	Element
9.3 Separation of paints	• Are appropriate arrangements in place to ensure separation of water based and oil based paint?
9.4 By-catch	• Are appropriate arrangements in place to ensure by-catch is stored in the appropriate cabinets and does not accumulate to unsafe levels?
9.5 Collection truck loading	• Are appropriate arrangements in place to ensure safety during collection of full receptacles and moving full and empty receptacles?
9.6 Housekeeping	• Are appropriate arrangements in place for housekeeping and to ensure the site is kept tidy and well organised?
9.7 Commercial waste	• Are appropriate arrangements in place to keep household wastes separate from commercial and industrial wastes (if commercial and industrial wastes are accepted at the facility)?
10 Collection of materials	
10.1 Core materials	• Are appropriate procedures in place for initiating pickup and subsequent reporting?
10.2 Lead-acid batteries and motor oil	• Are appropriate arrangements in place for recycling lead-acid batteries and motor oil, so that these materials are being collected regularly?
11 Record keeping	
11.1 Online system	• Are appropriate arrangements in place for online reporting and completing consignor / loader checklists?
11.2 Materials register	• Is a register of materials being kept?
11.3 Other records	• Is any other record keeping planned?
12 Insurance	
	• Is appropriate insurance cover in place and have the relevant insurers been advised of the establishment of the CRC for property, public liability, and workers compensation insurance policies?

Appendix 1.3: Site commissioning checklist

Part A – Design standards	Tick
A1. Standard Community Recycling Centre (CRC) signage	
• CRC Entry sign in place including opening times	☐
• NSW EPA and Environmental Trust acknowledgement (one sign can contain both)	☐
• HAZCHEM sign on the front entrance to the CRC site indicating that this is a Placarded site. *Note the minimum requirement is the HAZCHEM sign at the front entrance. If the CRC is distant from the front entrance then a second HAZCHEM sign is recommended at the CRC facility and at all entrances likely to be used by the emergency services. See WorkCover Placarded Site Guide.* 	☐
Each storage receptacle should have the CRC branded icon signage above it in good view (approx. 2m off the ground) to inform the public on material placement	
• Storage receptacle for paint (water based) with branded icon signage	☐
• Storage receptacle for paint (oil based) with branded icon signage	☐
• Storage receptacle for fluoro tubes and globes with branded icon signage	☐
• Storage receptacle for smoke detectors (usually a 10L plastic bucket) with branded icon signage	☐
• Storage receptacle for household batteries (usually a 10L plastic bucket) with branded icon signage	☐
• Storage cages for gas bottles / fire extinguishers with branded icon signage (located outdoors or in a ventilated area and at least 3m from the vehicle battery storage pallet)	☐
• Vehicle battery bunded storage pallets with branded icon signage (not located next to motor oil storage, gas bottles or Dangerous Goods Safety Cabinets)	☐
• Used oil storage or decanting receptacle (both bunded) with branded icon signage	☐
• Signs clearly visible to the public	☐
*Contact EPA CRC Program Unit on **02 9995 6880** for advice if required*	
A2. Structure / Building	
• Security – there is no public access to the storage receptacles when facility is closed e.g. the CRC is fenced / lockable	☐
• Ventilation – there is adequate ventilation in closed buildings (not applicable to open structures) *Requires high level and low level fixed ventilation at each end. This is usually louvres or grills (nominally – 1sqm for each 50sqm floor area)*	☐

Appendix 1.3: Site commissioning checklist *(continued)*

• Paints, batteries, smoke detectors, fluoro globes and tubes are under cover in specified containers	☐
• The area where public vehicles stop to unload is under cover	☐
A3. Safety equipment – close to the CRC	
• Emergency shower – installed and operational with dedicated uninterrupted water supply	☐
• Eye wash on hand (can be combined with the above)	☐
• Spill kit on hand	☐
• PPE on hand	☐
• Fire extinguisher(s) on hand (at CRC) as well as adequate water supply e.g. mains supply, water tank, water cart	☐

Part B – Operational compliance	Tick
B1. Back of house storage	
• Dangerous Goods Safety Cabinets (DGSC) – five cabinets one for each of the following: Flammable, Toxic, Oxidisers, Corrosives (Acids) and Corrosives (Alkalis) with appropriate signage displayed.	☐
• The capacity of the cabinets: _____ *Note, these should not be accessed by the public. They should be close to the drop off area but discretely placed (possibly simply with their backs to the public area or screened). Their security is important. Four of the cabinets are supplied with keyed alike locks. The Oxidisers cabinet is not lockable.*	
• Number of empty receptacles in reserve: _____	
B2. Operations	
• Roads around the CRC have arrows or directional signage to indicate traffic flow to and from the CRC	☐
• The public are required to unload their materials and place directly into the receptacle	☐
• Forklift on site	☐
• If commercial and industrial problem wastes are accepted at the facility there is a system in place to keep the household and commercial quantities separate.	☐
• CRC database operation – site staff demonstrate how they update the status report using their tablet. *The CRC Status Update is required to be entered every Monday morning and whenever one of the full receptacles is swapped for an empty one.*	☐
• Labels and signs are being placed on all receptacles as they are brought into service. *(This includes both the adhesive transportation signage supplied by the contractor, and the CRC program branded magnetic material signs).*	☐

B3. Safety	
• Directional signage provides clear directions to and from the CRC	☐
• Dangerous Goods Safety Cabinets are located in a secure area away from the drop off area and as far as possible out of public view	☐
• Procedures are in place to ensure public and staff safety when moving storage receptacles and loading service vehicles *e.g. the area is closed to public whilst storage receptacles are moved / replaced, or some sites may be able to draw the receptacles away from the traffic flow or swap over using a pallet jack.*	☐
• Storage cages for gas bottles and fire extinguishers are located outdoors or in a ventilated area and not placed next to the vehicle battery storage pallet.	☐
• Vehicle battery storage pallets are not located next to the motor oil decanter / container or gas bottles or DGSC (minimum 3m separation)	☐
• The CRC area is clean and tidy i.e. all materials are contained in an appropriate storage receptacle or DGSC	☐
• There are no trip hazards or other site safety hazards e.g. drop off to unfenced retaining walls	☐
• Training – Operational staff have received training by the collection contractor Date(s): _____ Number of staff who attended _____	☐
• Safe Work Method Statements (SWMS) are prepared for the operation of the CRC and signed by all staff who will use the procedure	☐
• Risk Management Plan in place	☐

2.
Risk Management

Introduction

Risk management process

Example of risk assessment and controls

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Risk management

2.1 Introduction

CRCs must be designed and operated to temporarily store household problem waste safely until it can be recycled or disposed of appropriately. In order to support this, CRC operators must prepare a Risk Management Plan for their centre. This section of the Handbook outlines the elements of risk management and how they can be applied to the design and operation of CRCs.

Table 2.1 below provides a summary of the primary hazard events associated with the target materials and the controls that should be implemented to reduce the risk associated with these hazards. A more detailed Risk Assessment Checklist, that can be used to assess whether appropriate controls have been implemented at a CRC, is provided at the end of this document.

Appendix 2.1 provides a worksheet that can be used to undertake a full Risk Assessment and prepare a Risk Management Plan for a CRC.

Table 2.1: Primary hazards and controls for CRCs

Hazard event	Material	Possible controls
Container failure or container dropped causing release of: • compressed gas • flammable substance • corrosive substance • toxic substance	All types of materials	• Use intermediate containers • Spill containment • Procedures and training • Do not stack cylinders • Do not stack lead acid batteries
Vehicle collision that causes release of material, mixing of incompatible substances or ignition source	All types of materials	• Store away from traffic • Procedures to control vehicle movements • Awareness and supervision of vehicle movements
Mixing of incompatible substances causing a reaction that releases heat or toxic gases	Lead acid batteries Nickel cadmium batteries	• Use intermediate containers • Store acids and alkalis separately • Procedures and training
Ignition of atmosphere or adjacent fire	Gas cylinders Solvent based paint	• Store gas cylinders separately outdoors • Isolate from ignition sources • Ensure adequate security • Ventilate store for solvent based paint • Separate from possible fire sources • Fire suppression • Emergency response

2.2 Risk management process

CRCs should be designed and operated to achieve the following objectives:

- protect staff and employees
- protect public health
- protect the environment
- facilitate safe collection and storage of materials collected.

Risk management is a structured way of identifying threats and opportunities in achieving these objectives, and responding to them with appropriate controls or management activities.

Risk, in the context of a CRC, is the combination of the likelihood and severity of any harm that hazards associated with the operation of the centre may cause.

These hazards may include:

- leakage from a container exposing staff, members of the public or the environment to toxic or corrosive agents
- fire or explosion caused by leaking material coming into contact with an ignition source
- unintentional mixing of incompatible or reactive substances causing a chemical reaction, explosion or fire, and exposure to unknown substances thus generated.

The key elements of the risk management process are outlined in **Table 2.2** below. This procedure will help identify issues unique to each site.

Table 2.2: Processes to mitigate risks

Step	Key elements
Step 1 **Identify the hazards**	• Examine all activities, work processes, plant, substances, work environment, layout and condition of the site, and any other factors • Identify all of the dangerous goods and their associated hazards • Identify the hazards in or arising from the storage and handling processes • Identify any neighbouring or external hazards
Step 2 **Assess the risks**	• Identify potentially harmful situations that could arise involving each hazard • Identify the potential consequences of these situations • Assess the severity of the consequences • Assess the likelihood of each incident taking place • Determine initial prioritisation of risk • Record results of assessment
Step 3 **Eliminate or reduce the risks**	• Apply the 'hierarchy of control' measures tackling the most serious risks first • Apply Practicability Test (based on feasibility and cost of mitigating risk) • Determine final risk ranking • Eliminate hazards leading to risk where practicable • Determine risk control measures to reduce the risk as far as practicable • Implement risk control measures • Identify record keeping necessary to ensure controls are maintained
Step 4 **Monitor and review the control measures**	• Repeat Steps 1 and 2 to ensure risks are mitigated, and record results of second assessment • Implement additional risk control measures if necessary • Periodically re-do the risk assessment to ensure that safety is maintained and the risk control measures are working, and to respond to changes in work practices, activities and other conditions

2.2.1 Hazard identification

The CRC site operator must identify all hazards associated with the storage and handling of CRC materials.

When identifying hazards, the following activities should be undertaken:

a) consult with employees

b) consult with the suppliers of the dangerous goods, structures, equipment and supplies, or other persons with specific expertise

c) consult commercially available databases on hazardous properties of chemicals

d) walk through and inspect the premises and the methods of storage and handling

e) thoroughly examine plans of the premises, for all buildings and services, including water, gas, electricity, drains, fire services, roads and access ways and engineering drawings of relevant plant

f) discuss risks with occupiers of nearby premises and the emergency services authority

g) consult injury and illness records.

2.2.1.1 Material characteristics

The starting point for identifying the hazards associated with specific household hazardous waste (HHW) is normally the Safety Data Sheet (SDS). Due to the wide range of materials generally found in a CRC it can be helpful to group materials into several different types, depending primarily on the dangerous goods classification, but also taking into consideration toxicological hazards.

The hazards identified are not restricted to those inherent in the primary dangerous goods classification. Equally important are any secondary dangerous goods hazards as indicated by one or more subsidiary risks in addition to the primary Class.

The physical properties of the CRC materials may represent or contribute to hazards in the particular storage and handling situation. These hazards include:

- **flammability –** the potential to burn or explode in air when ignited
- **toxicity –** the immediate, delayed or long term effect on humans or animals through inhalation, skin absorption or ingestion
- **reactivity or sensitivity –** the potential to react with certain conditions, other chemicals, water or other materials
- **instability –** the potential to undergo a spontaneous violent reaction, such as decomposition or polymerization, under certain conditions
- **ecotoxicity –** the effect on the environment, in particular on aquatic life
- **corrosivity –** the slow destruction or damage to materials, particularly packaging and human skin, caused by a chemical reaction
- **radioactivity –** spontaneously emitting harmful radiation.

The materials accepted at CRCs (lead acid and household batteries, used oil, domestic gas cylinders, fluorescent tubes and lamps, and oil based and water based paint) have a range of hazards as indicated by **Table 2.2.1.1** on the following page.

Table 2.2.1.1: Materials accepted by CRCs and their hazards

Material	Hazard
Batteries – lead acid	Corrosive
Batteries – nickel cadmium / other	Environmental hazard / toxic / corrosive
Fluorescent tubes and light fittings	Toxic
Gas Cylinders – other / propane	Compressed gas / flammable
Low level radioactive substances – e.g. smoke detectors	Radioactive / toxic
Paint – oil based	Flammable
Paint – water based	Low level ecotoxic

Provision is to be made for the safe storage of 'by-catch' – the small volume of higher toxicity materials which may be received as orphan or illegally dumped dangerous or hazardous materials. Hazards for these materials are outlined in **Appendix 2.2**. Consideration of these hazards guides appropriate storage and handling of these materials. More details are provided in **Appendix 2.2**.

2.2.1.2 Storage and handling

In addition to the hazards arising from the nature of the CRC materials, other hazards arise from the structures, equipment, systems of work and activities used in the storage and handling of CRC material. Hazards can be identified by considering the following:

- physical components or characteristics that have the potential to cause harm
- systems of work, including normal operating procedures and the possibility of unusual operating conditions, including the possibilities of operator error
- hazardous chemical and physical effects created in a manufacturing or handling process.

Structures, plant or equipment used in the storage or handling of materials could include, but are not limited to:

- a container (including tank or package)
- shelves or racks used for storage
- a spill containment system
- a vehicle used for the transport or transfer of materials such as a forklift
- firefighting or fire protection system.

Systems of work predominately relate to the activities involved in accepting CRC materials from householders, transferring these materials to the storage area, and the regular clearance of the storage area for treatment, recycling or disposal of the materials.

Chemical reactions are those that result in a chemical change in one or more of the goods when they come into contact. Physical processes include dilution, dissolution, abrasion, phase change, leaching and absorption. Consider the following hazards:

- physical reaction from incompatible substances coming into contact (e.g. rapid heating generated by acid mixing with water causing a steam explosion)
- chemical reaction resulting from contact with other substances (e.g. an oxidising agent such as pool chlorine coming into contact with an oil such as brake fluid).

For example, the separation of lead acid batteries from gas cylinders (to limit potential for acid corrosion of the cylinders) is a reasonable design and operational risk control measure.

2.2.1.3 Hazards within the facility site

Some activities, systems of work, structures and equipment that are not directly involved with the storage and handling of household hazardous waste (HHW) materials, may constitute a hazard for storage and handling. Potential external hazard sources include:

- any adjacent dangerous goods storages
- the proximity of other work areas, including on-site offices
- plant used or moved on the site (e.g. ignition sources from engines)
- vehicle movements on the site
- deliveries of other dangerous goods
- transfer of CRC materials between receptacles on the site
- personnel movements in normal and emergency situations
- visitor access, and unauthorised access to the drop-off or storage areas
- portable sources of ignition, generation of static electricity
- fire hazards including buildings, concentrations of combustible material and uncontrolled vegetation
- weather conditions such as temperature extremes, wind, lightning, or rainfall including the potential for flooding.

Employees are commonly aware of these hazards and operators should consult them during the identification process.

2.2.1.4 Hazards external to the facility site

There may also be hazards that are external to the facility site. For example, an adjacent forest with densely grouped eucalypt trees is an external fire risk, because if the trees catch fire, this hazard could impinge on the dangerous goods.

External hazards include:

- any dangerous goods or incompatible substances stored at other adjacent premises or public places
- activities, facilities or installations on neighbouring premises that could create a hazard (e.g. an ignition source)

- the effects of infrastructure such as a road, rail line, airport, pipeline, power line, radio transmitter or telephone tower
- fire hazards, including concentrations of combustible material or uncontrolled vegetation on neighbouring premises or public areas.

2.2.1.5 Past incidents

Incident information, such as past accidents or spills, contributes to knowledge about the hazards and risk. It is important to obtain and consider information about incidents and near misses that involved storage and handling of CRC materials at the facility and at other facilities. This information should include the nature and cause of the incident, the effectiveness of controls and how they could be improved.

2.2.2 Risk assessment

Once the materials and hazards have been identified, the next step in the risk management process is to assess the risks. It is important to gather information about both the likelihood and the severity of incidents, including the review of historical information at the site or similar sites, and estimate the frequency of various activities.

The risk assessment should include:

- identification of the events with hazard potential that could give rise to the risk
- the extent of the risk to people (workers and members of the public), other dangerous goods, other substances, and plant or buildings both on the site and beyond – in terms of the probability of the event occurring and the nature of the harm that would arise from its occurrence
- the extent and type of controls necessary to reduce the risk to a level that is appropriate
- the priority with which controls should be implemented.

Risk assessment to be documented and reviewed regularly: The risk assessment must be documented and records of the assessment kept. The risk assessment should be reviewed at least every five years, but in the case of a CRC at least every two years.

Employees to be consulted as part of the risk assessment: Facility operators must consult with employees involved with the operation of the CRC during the risk assessment process. Operators must ensure employees aware of the results of the assessment and its implications for design and operation of the facility.

2.2.2.1 Events with hazard potential arising from CRCs

The general hazards that can arise from different events are outlined in **Figure 2.2.2.1**. Location-specific hazards arise from the features of the site in which the CRC is located, and must be identified for each specific CRC.

Figure 2.2.2.1: Identification of potential hazard events

Loss of containment

- Customer or operator drops container when removing from vehicle
- Customer or facility vehicle collides with drop-off area
- Customer or facility vehicle collides with storage area
- Disposal contractor vehicle collides with storage area
- Operator drops container when transferring from drop-off area to storage area
- Container fails in drop-off area (e.g. heat from direct sunlight increases vapour pressure)
- Container fails in storage area due to sensitivity of material to environmental conditions or ageing of container
- Violent storm destroys CRC infrastructure.

Mixing of incompatible or reactive substances

- Operator places incompatible substances in same part of the storage area, with subsequent loss of containment of two or more incompatible materials
- Containers of incompatible or reactive substances fail simultaneously and mix.

Fire or explosion

- Ignition source (e.g. customer smoking, static discharge, vehicle ignition or electrical spark) near drop-off area ignites flammable atmosphere
- Ignition source in drop-off or storage area ignites flammable atmosphere
- Fire in neighbouring property ignites storage area
- Fire within facility ignites storage area.

Location-specific hazards

- Other buildings and work areas including site-offices
- Other dangerous goods storages within the facility or in adjacent premises
- Vehicle movements near the drop-off area or storage area
- Activities, facilities or installations on neighbouring premises
- Other infrastructure such as road, rail, pipeline, powerline, or telephone tower
- Occasional work such as repairs or maintenance on the storage area.

2.2.2.2 Calculating the level of risk

Risk assessments may be qualitative, quantitative, or a combination of both. In the case of a CRC, due to the many different types of materials, it is appropriate to use qualitative assessment. In such an assessment the level of risk can be determined by estimates of the likelihood of an incident that will cause harm occurring and the severity or degree of harm arising from the incident.

Table 2.2.2.2(a): Risk level

The risk level can be estimated from the following table.

Likelihood (L)	Severity (S)				
	5 Catastrophic	4 Major	3 Significant	2 Moderate	1 Minor
5 Imminent	Extreme	Extreme	Extreme	High	Medium
4 Certain	Extreme	Extreme	High	Medium	Medium
3 Likely	Extreme	High	Medium	Medium	Low
2 Unlikely	High	Medium	Medium	Low	Very Low
1 Rare	Medium	Medium	Low	Very Low	Very Low

Table 2.2.2.2(b): Priority for action

The level of risk determines the level of priority for action, which can be determined from the following table.

Risk Level	Priority for action
Extreme	Cease operations until additional controls are implemented
High	Take immediate action to implement additional controls
Medium	Action to implement additional controls is a priority
Low	Action to implement additional controls can be scheduled
Very Low	Low priority for action

Table 2.2.2.2(c): Likelihood

Likelihood (L) can be estimated using the following table.

L	Likelihood of occurrence	Indicative frequency
0	Totally eliminated	Zero
1	Rare	Could happen, but improbable, once in a thousand years
2	Unlikely	Remote, could happen but rarely, once in a hundred years
3	Likely	Could happen occasionally, once in ten years
4	Certain	Could happen frequently, less than once a year
5	Imminent	More than once a year

Table 2.2.2.2(d): Severity

The severity (S) of the incident can be estimated using the following table.

S	Extent of consequence	Harm to persons on or off-site	Community damage and disruption	On-site damage	Off-site environmental damage
1	Minor	No harm to persons	No disruption or damage	No damage or interruption to operations	No off-site environmental impact
2	Moderate	Slight injury requiring first aid treatment	No disruption or damage	Slight damage Interruption to operations < 24 hours	Off-site environmental impact but is not significant
3	Significant	Medical treatment with immediate recovery Hospitalisation < 24 hours Restricted or lost work < 4 days	Disruption to essential utilities, road closures or evacuation required	Localised damage Interruption to operations 1–7 days	Some off site environmental impact and damage is significant
4	Major	Multiple injuries Hospitalisation for more than 24 hours Delayed symptoms	Disruption to essential utilities, road closures or evacuation required for some time Some damage to off-site private property, dwellings still inhabitable	Major damage Interruption to operations 1 to 12 weeks	Environmental damage is significant and recovery will take more than 20 years
5	Catastrophic	Fatality or total permanent disability	Disruption to essential utilities, road closures or evacuation required for extensive period Major damage to off-site private property, dwellings uninhabitable	Extensive damage Long-term interruption to operations > 12 weeks	Off-site environmental impact extends to more than 500m radius around incident site Recovery will take more than 20 years

2.2.2.3 Records

A record of the risk assessment should include:

- date
- name of assessor
- names of people who provided specialist advice
- site, storage location, area
- dangerous goods involved
- identified risks
- controls required to reduce risk to an acceptable level
- existing controls in place
- controls that need to be implemented
- basis for decision-making (MSDSs, Australian Standard etc).

2.2.2.4 Changes triggering a review of the risk assessment

The risk assessment should be reviewed when:

- new dangerous goods are introduced
- quantities of dangerous goods at the site change
- goods are moved to a different location on the site
- a process or plant is modified
- new information on hazards or risks becomes available
- monitoring indicates inadequate controls
- an incident has occurred
- there are changes on a neighbouring property
- there are changes to the site, structure or buildings.

2.2.3 Risk control measures

Risk control is the process of determining and implementing appropriate measures to control the risks identified by the risk assessment. Control measures should, wherever possible, first be applied to the highest priority risks, and then to the others in order of priority. Effective risk control may require the application of more than one control measure, and a hierarchy of control measures should be applied.

2.2.3.1 Hierarchy of controls

The preferred sequence of application of risk control measures is:

- elimination
- substitution
- quantity reduction.

Where the above do not achieve the necessary risk reduction, other measures that should be applied are:

- isolation
- engineering controls
- administrative controls
- personal protective clothing and equipment.

2.2.3.2 Possible controls

Examples of other types of control measures that can be applied are listed below.

Elimination and substitution

Elimination and substitution are generally not feasible in the case of a CRC because its purpose is to deal with the targeted materials.

Quantity reduction

The careful management of the quantity of materials in a CRC can be achieved firstly by design of the facility to contain certain quantities of the materials likely to be received, and by ensuring the store is cleared regularly to keep those quantities below design limits.

Isolation

- Separation from other on-site activities, on-site buildings, property on adjoining premises, other dangerous goods, people and other property
- Enclosing a hazardous activity
- Storing incompatible dangerous goods, such as oxidising agents and flammable materials, in buildings that are sufficiently separated that interaction is impossible and an incident in one will not involve the other
- Separation from ignition sources
- Segregation within the storage area.

Table 2.2.3.2: Hierarchy of control measures

	Hierarchy of control measures	Examples	Applied to Community Recycling Centre
Most effective	Elimination	Use a non-harmful substance	Not feasible – the purpose of a CRC is to accept and store dangerous goods
		Eliminate ignition sources in hazardous areas	Prohibit carriage of matches, lighters and spark producing tools in the CRC
	Substitution	Use a less hazardous substance	Not feasible – purpose of CRC is to accept and store dangerous goods
		Use non-sparking tools in a hazardous area	Ensure operations and maintenance procedures specify use of non-sparking tools in CRC
	Quantity reduction	Reduce the inventory of dangerous goods	Design CRC to contain specific quantities of various types of dangerous goods Ensure the CRC is cleared regularly to keep quantities within design limits
	Isolation	Introduce a restricted work area	Locate drop off area away from storage area and restrict access to storage area by trained operators only Prevent access to drop-off area and storage area when moving or loading full storage receptacles
		Separate goods from other hazards	Locate CRC away from other activities on the site
		Segregate incompatible substances	Design and operate CRC with internal segregation for incompatible substances
	Engineering controls	Total enclosure of dangerous goods	Storage of oxidisers in specific purpose cabinets
		Ventilation to eliminate flammable or toxic atmospheres	Installation of natural and mechanical ventilation in the CRC
		Provide spill control such as bunds or sumps	Construct separate bunds for different types of material within the CRC
		Install detection systems and alarms for fire or hazardous atmospheres	Include an appropriate fire detection system within the CRC
	Administrative controls	Procedures, training, emergency plans, signs, placarding	Implement these for the operation of the CRC as appropriate
Least effective	Personal protective equipment	Gloves, respirators, safety showers, generally required in addition to other control measures	Implement these for the operation of the CRC as appropriate

Engineering controls

Role of engineering controls

- Ensure the effectiveness and integrity of buildings, plant and equipment
- Contain or suppress dangerous goods e.g. vapours or dusts
- Eliminate or confine processes or plant that may impinge on dangerous goods
- Protect dangerous goods from environment e.g. rain and sunshine
- Limit the area of contamination in the event of spills or leaks.

Types of engineering controls

- Total or partial enclosure
- Ventilation
- Control devices, alarms or shutdown devices
- Appropriately rated electrical plant and circuitry to minimise ignition hazards
- Spill control to contain the largest foreseeable spill
- Effective barriers between incompatible goods
- Detection systems and alarms for hazardous atmospheres and fires
- Protection from external hazards e.g. crash barriers
- Fire control and suppression systems.

Administrative controls

Operations

- Safe work procedures
- Scheduling transfers at 'low-traffic' times
- Prevent use of storage area as a thoroughfare
- Transfer of packages by trolley rather than by hand
- Keep lids on receptacles when not in immediate use
- Do not open containers for identification
- Control of access to storage and handling areas
- Prohibition of the carriage of matches, lighters or spark producing tools.

Maintenance

- Maintenance procedures that ensure integrity of plant and structures
- Procedures to ensure adequacy of other controls e.g. monitoring of inventory
- Operation of bunding and fire systems
- Procedures for hot work in or around the storage area
- Procedures that ensure drop-off and storage areas are kept tidy.

Spills and emergencies

- Procedures for spill clean up and decontamination
- Procedures for waste disposal including clean-up and contaminated waste
- Emergency procedures.

Signage and labelling

- Labelling of packages and storage
- Signage in storage area
- Instructions and warnings to operators and visitors
- Placarding.

Personal Protective Equipment (PPE)

- Eye protection
- Gloves, aprons, coats and overalls
- Footwear
- Safety showers, eye washes and hygiene facilities
- Respiratory protection
- Hearing protection.

2.3 Example of risk assessment and controls

Table 2.3 on the following page outlines the hazards arising from materials to be accepted at CRCs and possible risk control measures. This table can be used as a prompt to ensure appropriate risk control measures are in place.

Table 2.3: Risk control measures of materials collected

Material	Hazard	Hazard events	L / S / risk	Possible controls
 Gas cylinders – other / propane	Compressed gas / flammable	Container failure	3 / 2 / Medium	Emergency response Do not stack cylinders
		Container dropped	3 / 2 / Medium	Procedures and training
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Ignition of atmosphere	2 / 4 / Medium	Store securely and separately outdoors
		Adjacent fire	3 / 4 / High	Separation / fire suppression / emergency response
			1 / 4 / Medium	
 Batteries – lead acid Batteries – nickel cadmium / other	Corrosive	Container failure	3 / 2 / Medium	Use intermediate containers / spill containment
		Container dropped	3 / 2 / Medium	Use intermediate container / procedures and training Do not stack lead acid batteries
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Mixing of incompatible substances	3 / 4 / High	Use intermediate containers Store acids and alkalis separately / procedures
 Used oils	Flammable	Container failure	3 / 2 / Medium	Use intermediate containers / spill containment
		Vehicle collision	2 / 4 / Medium	Store away from traffic
 Paint – oil based		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / security / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
 Paint – water based	Low level ecotoxic	Container failure	3 / 1 / Low	Use intermediate containers / spill containment
		Container dropped	3 / 1 / Low	Spill containment / emergency response
		Vehicle collision	2 / 2 / Low	Store away from traffic / environment
 Low level radioactive substances	Radioactive – toxic	Container failure	3 / 1 / Low	Use intermediate container
 Fluorescent tubes and light fittings	Toxic	Container failure	3 / 3 / Medium	Use intermediate containers / spill containment
		Container dropped	2 / 3 / Medium	Use intermediate container
		Vehicle collision	2 / 4 / Medium	Store away from traffic

Appendix 2.1: CRC risk assessment worksheet

Overview

Organisation	
Location / facility	
Name of assessor	
Date of assessment	
Date to be reassessed	
Specialist advice	

Site description	

Hazard identification, assessment and control

Hazards	Hazard events	L x S = Risk	Control measures (Existing or required)
Hazards arising from CRC materials • Compressed gas / flammable • Corrosive • Flammable • Low level ecotoxic • Radioactive – toxic • Toxic			

Hazards	Hazard events	L x S = Risk	Control measures (existing or required)
Hazard arising from storage and handling infrastructure ***Structures, plant or equipment*** used in the storage or handling of materials including: • a container (including tank or package) • storage areas, receptacles, or shelves • a spill containment system • a vehicle used for the transport or transfer of materials such as a forklift • firefighting or fire protection system. ***Systems of work*** involved in accepting CRC materials from householders, transferring these materials to the storage area, and the regular clearance of the storage area for treatment, recycling or disposal of the materials. ***Chemical reactions*** that result in a chemical change in one or more of the goods when they come into contact (e.g. an oxidising agent such as pool chlorine coming into contact with an oil such as brake fluid). ***Physical processes*** include dilution, dissolution, abrasion, phase change, leaching and absorption (e.g. rapid heating generated by acid mixing with water, causing a steam explosion).			

Hazards	Hazard events	L x S = Risk	Control measures (existing or required)
Hazards within the site of the facility • Any adjacent dangerous goods storages • The proximity of other work areas, including on-site offices • Plant used or moved on the site (e.g. ignition sources from engines) • Vehicle movements on the site • Deliveries of other dangerous goods • Transfer of CRC materials between containers on the site • Personnel movements in normal and emergency situations • Visitor access, and unauthorised access to the CRC drop-off or storage areas • Portable sources of ignition, generation of static electricity • Fire hazards including buildings, concentrations of combustible material and uncontrolled vegetation • Weather conditions such as temperature extremes, wind, lightning, or rainfall including the potential for flooding.			

Hazards	Hazard events	L x S = Risk	Control measures (existing or required)
Hazards external to the site of the facility • Any dangerous goods or incompatible substances stored at other adjacent premises or public places • Activities, facilities or installations on neighbouring premises that could create a hazard (e.g. an ignition source) • The effects of infrastructure such as a road, rail line, airport, pipeline, power line, radio transmitter or telephone tower • Fire hazards, including concentrations of combustible material or uncontrolled vegetation on neighbouring premises or public areas.			

Hazards	Hazard events	L x S = Risk	Control measures (existing or required)
Hazards indicated by past incidents Accidents, spills, incidents and near misses that involved storage and handling of CRC materials at the facility and at other facilities. Include details of the nature and cause of the incident, and the effectiveness of controls and how they could be improved.			

Implementation of controls

Organisation	Action by	Action due

Appendix 2.2: By-catch hazards and controls

Provision is to be made at CRCs for the safe storage of 'by-catch' – the small volume of higher toxicity materials which may be received as orphan or illegally dumped dangerous or hazardous materials. Hazards for these materials are outlined below in **Table A2.2(a)**. Consideration of these hazards guides appropriate storage and handling of these materials.

Table A2.2(a): By-catch materials and their hazards

Material	Hazard
Acids	Corrosive
Aerosols – CFC based / flammable	Flammable gas / gas under pressure
Aerosols – flammable, pesticide	Flammable gas / toxic
Alkalis	Corrosive
Arsenic based products	Toxic
Cyanide	Toxic
Engine coolants and glycols	Flammable / possibly reactive
Fire extinguishers – non-halon	Compressed gas / low oxygen atmosphere
Flammable liquids – hydrocarbons, fuels and solvents	Flammable
Flammable solids	Flammable
Flares	Explosive
General household chemical	Low level toxic / corrosive
Heavy metal compounds / mercury – elemental	Toxic
Organic peroxides	Reactive / flammable
Oxidising agents e.g. pool chlorine	Reactive
Paint – other, including isocyanates and amines	Flammable / toxic
Paint – metal based	Toxic
PCB materials	Toxic
Pesticides – non schedule X (non-organochlorine)	Toxic / flammable
Pesticides – schedule X (organochlorine)	Toxic / flammable / ecotoxic
Solvents – halogenated	Toxic

Figure A2.2: Properties of materials to be considered in hazard identification

Physical state

Compressed gas
Gas dissolved under pressure
Liquefied gas
Cryogenic liquid
Mobile liquid
Viscous liquid
Volatile liquid
Liquid with solids in solution or suspension
Finely divided solid
Granular / flaked solid
Caked or undivided solid
Physical state as stored / handled if different from above

Flammability

Flashpoint
Sustains flame
Auto ignition temperature
Flammability range LEL – UEL
Evolves / produces hazardous combustion products
Explosion potential

Toxicity

Exposure limits
Toxicity
Irritant
Carcinogen (known / suspected)
Mutagen
Sensitiser
Biologically active

Reactivity

With air
With water
With other materials (details)
Self reactive

Corrosivity

Skin
Metals
Other materials

Physical properties

Solubility in water
Boiling point / range
Melting point / range
Odour
Electrical conductivity / resistance
Relative density
Pressure as packed
Vapour pressure
Polarity
pH as stored and handled
pH of 1% solution

Instability

Decomposition conditions
Hazardous decomposition effects
Hazardous decomposition products
Polymerisation potential
Hazardous polymerisation effects
Inhibitor required
Phlegmatiser required
Blanketing material required
Self accelerating decomposition
Temperature
Control temperature
Other special controls required

Ecotoxicity

Atmospheric pollutant
Ozone depleter
Odorous
Visual pollutant
Marine pollutant
Ground water pollutant
Soil pollutant
Relevant half life information
Special neutralising / absorbent material requirements

Sensitivity

To shock
To heat
To radiation
To moisture
To contamination with other materials

Table A2.2(b): Hazards arising from by-catch and possible controls

The table below outlines the hazards arising from by-catch materials that could be received at CRCs and possible risk control measures.

Hazard	Material	Hazard events	L / S / Risk	Possible controls
Corrosive	Acids Alkalis	Container failure	3 / 2 / Medium	Use intermediate containers / spill containment
		Container dropped	3 / 2 / Medium	Use intermediate container / procedures and training
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Shelving corrosion	2 / 2 / Low	Use intermediate containers
		Shelving collapse	2 / 4 / Medium	Do not overload shelves
		Mixing of incompatible substances	3 / 4 / High	Store acids and alkalis separately / procedures
Flammable	Engine coolants and glycols Flammable liquids – hydrocarbons, fuels and solvents Flammable solids	Container failure in store	3 / 2 / Medium	Use intermediate containers / spill containment
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / security / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Toxic	Arsenic based products Cyanide Heavy metal compounds / Mercury – elemental Paint – metal based PCB materials Solvents – halogenated	Container failure	3 / 3 / Medium	Use intermediate containers / spill containment
		Container dropped	2 / 3 / Medium	Use intermediate container
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
Compressed gas / Low oxygen atmosphere	Fire extinguishers – non-halon	Container failure	3 / 2 / Medium	Emergency response
		Container dropped	3 / 2/ Medium	Procedures and training
		Vehicle collision	2 / 4 / Medium	Separation from vehicles
		Shelving collapse	2 / 4 / Medium	Do not stack cylinders

Hazard	Material	Hazard events	L / S / Risk	Possible controls
Explosive	Flares	Explosion and fire	2 / 3 / Medium	Store in segregation device
Flammable / toxic	Paint – other, including isocyanates and amines	Container failure in store	3 / 2 / Medium	Use intermediate containers / spill containment
		Vehicle collision	2 / 5 / High	Store away from traffic
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / security / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Flammable gas	Aerosols – CFC based / flammable	Container failure	3 / 1 / Low	Emergency response
		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Flammable gas / toxic	Aerosols – flammable, pesticide	Container failure	3 / 1 / Low	Emergency response
		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Low level toxic / corrosive	General household chemical	Container failure	3 / 1 / Low	Use intermediate containers / spill containment
		Container dropped	3 / 1 / Low	Spill containment / emergency response
		Vehicle collision	2 / 2 / Low	Store away from traffic / environment
		Shelving collapse	2 / 1 / Very low	Ensure adequate shelving design
		Shelving corrosion	2 / 1 / Very low	Use intermediate containers
		Mixing of incompatible substances	2 / 2 / Low	Store acids and alkalis separately
Reactive	Oxidising agents e.g. pool chlorine	Container failure	3 / 3 / Medium	Use separate cabinet with internal bunding
		Container dropped	3 / 3 / Medium	Use separate cabinet with internal bunding
		Vehicle collision	2 / 4 / Medium	Separate store from traffic
		Mixing of incompatible substances	3 / 4 / High	Use separate cabinet / operating procedures

Hazard	Material	Hazard events	L / S / Risk	Possible controls
Reactive / flammable	Organic peroxides	Container failure	3 / 3 / Medium	Use separate cabinet with internal bunding
		Container dropped	3 / 3 / Medium	Use separate cabinet with internal bunding
		Vehicle collision	2 / 4 / Medium	Separate store from traffic
		Mixing of incompatible substances	3 / 4 / High	Use separate cabinet / operating procedures
		Ignition of materials	2 / 4 / Medium	Isolate from ignition
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Toxic / flammable	Pesticides – non schedule X (non-organochlorine)	Container failure	3 / 3 / Medium	Use intermediate containers / spill containment
		Container dropped	2 / 3 / Medium	Use intermediate container
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
		Ignition of atmosphere	2 / 4 / Medium	Isolate from ignition / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Toxic / flammable / ecotoxic	Pesticides – schedule X (organochlorine)	Container failure	3 / 3 / Medium	Use intermediate containers / spill containment
		Container dropped	2 / 3 / Medium	Use intermediate container
		Vehicle collision	2 / 4 / Medium	Store away from traffic / environment
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
		Ignition of atmosphere	2 / 4 / Medium	Isolate from ignition / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response

3.
Operating a Community Recycling Centre

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Operating a Community Recycling Centre

3.1 Introduction

CRCs are designed and operated to temporarily store household problem wastes safely until they can be recycled or disposed. To support this, CRC operators are required to ensure processes and documented procedures are in place to protect the health and safety of customers and staff at the facility, and for managing the impact of the facility on the environment. This includes having procedures for safe handling of materials, and emergency response.

This section of the Handbook provides core elements of procedures for this purpose that can be used by CRC operators as a resource to update their own existing procedures.

3.1.1 Objectives

The objectives of the procedures are to:

- protect staff and employees
- protect public health
- protect the environment
- facilitate safe disposal or reuse.

Due to the different nature and type of materials that may be received at a CRC, it is important that strict procedures be followed to reduce the risk of substance exposure to employees and members of the public who have access or proximity to the facility.

3.1.2 Scope

The procedure outlined in this section applies to all persons involved in the operation and use of the CRC.

3.1.3 Hazardous properties of CRC materials

Materials received at a CRC may have the following hazardous properties:

- **flammability –** the potential to burn or explode in air when ignited
- **instability –** the potential to undergo a spontaneous violent reaction, such as decomposition or polymerization, under certain conditions
- **reactivity –** the potential to react with certain other chemicals, with water or other materials
- **toxicity –** the immediate, delayed or long term effect on humans or animals through inhalation, skin absorption or ingestion
- **ecotoxicity –** the effect on the environment, in particular on aquatic life
- **corrosivity –** to other materials, in particular packaging, or human skin
- **radioactivity –** spontaneously emitting harmful radiation.

Table 3.1.3: CRC materials have a range of hazardous properties as indicated by the table below.

Material	Hazard
 Car batteries	Corrosive
 Batteries – nickel cadmium / other	Environmental hazard / toxic / corrosive
 Fluorescent tubes and light fittings	Toxic
 Gas Cylinders – other / propane	Compressed gas / flammable
 Low level radioactive substances – e.g. smoke detectors	Radioactive – toxic
 Used oils	Combustible / flammable
 Paint – oil based	Flammable
 Paint – water based	Low level ecotoxic

Some of the hazards arising from the operation of a CRC therefore include:

- leakage from a container exposing staff, members of the public, or the environment to toxic or corrosive agents
- fire or explosion caused by leaking material coming into contact with an ignition source
- unintentional mixing of incompatible or reactive substances causing a chemical reaction, explosion or fire, and exposure to unknown substances thus generated.

3.2 Public safety

CRCs aim to make it easy for householders to manage their problem waste. A well-managed facility ensures user and operator safety, minimises waste spillage and ensures safe traffic management flow.

The following requirements are to ensure the safety of members of the public, including those who may live near the site, those who are visiting the site for other purposes, and customers who are bringing CRC materials to the site.

Minimum requirements:

- signage at the facility should instruct customers to the drop-off point and advise them where to deposit the respective materials
- signage and the operator should direct customers that children, if present, should remain in the vehicle
- members of the public are not to remove any materials from the drop-off area or any ancillary storage areas
- members of the public are not to enter any ancillary storage area
- members of the public are not to smoke or to use a mobile phone while within the drop-off area (either inside or outside their vehicle), and this should be clearly advised by appropriate signage
- the facility supervisor or manager should be advised of all spills or loss of containment immediately, and appropriate spill and/or emergency response procedures initiated. These should include notification of appropriate authorities and members of the public on and surrounding the site if necessary.

3.3 Workplace health and safety

3.3.1 Risk management

Facility operators need to complete a risk assessment to identify hazards and risks, and implement appropriate controls to ensure the health and safety of workers involved in the operation of CRCs.

Refer to **Section 2** – Risk Management of this Handbook for more guidance on potential hazards, risks and controls associated with the operation of CRCs.

3.3.2 Labelling

Facility operators must ensure that labels appropriate to the material being stored in a particular receptacle are affixed to the receptacle as soon as it is brought into service. These labels will correctly designate the receptacle both for storage and for transport of the material.

The collection contractor supplies both adhesive and magnetic labels for receptacles of CRC materials. CRC operators must ensure these labels are stored safely and available for use as required.

Correct labelling of receptacles as soon as they are brought into service must be included in the SWMSs or SOPs for the CRC. Operations staff at the CRC must be trained in correct labelling procedures.

3.3.3 Safe work method statements

Facility operators need to prepare safe work method statements (SWMSs), also known as safe work procedures or job safety assessments, specifically for the tasks involved in the operation of CRCs. These are to be in addition to any other SWMSs by which the facility operates.

All staff involved in the operation of the CRC must be trained in the use of the SWMSs, sign off as having been trained and agree to undertake the relevant tasks safely in accordance with the SWMSs.

3.3.4 Personal protective equipment

3.3.4.1 Acceptance and storage

The following items of Personal Protective Equipment (PPE) must be worn by operators when unloading materials or moving them between storage receptacles in the drop-off area:

- eye protection – safety glasses
- gloves – in chloroprene or nitrile rubber
- heavy-duty, chemical resistant footwear with slip reducing soles and steel caps.

Refer to the procedures provided in the collection contractor's training package for more information on appropriate PPE and its use for handling CRC materials.

3.3.4.2 Spill response

In the event of a leak or spill the following items may be required and should be stored in a location quickly and easily accessible to the drop-off and storage area:

- coverall suit
- chemical resistant face shield
- chemical resistant boots.

3.3.4.3 Maintenance of PPE

PPE should be kept separate from normal clothing. After use, all PPE should be maintained and cleaned in accordance with the manufacturer's instructions and the relevant Australian Standard.

3.4 Acceptance and storage

Householders should deposit target materials directly into appropriate designated receptacles. Householders attempting to drop off non-target items such as hazardous toxic chemicals should be asked to retain them and referred to the next Household Chemical CleanOut event.

Waste from commercial sources must not be accepted at the CRC

Problem wastes and hazardous wastes from commercial and industrial sources must not be accepted at the CRC. If commercial and industrial waste is brought to the CRC, the facility operator must make their own arrangements for the acceptance, storage, transport and disposal of these wastes. If problem and hazardous wastes from commercial and industrial sources are accepted, the facility operator must also make appropriate arrangements to ensure that they are kept completely separate from the CRC materials. These arrangements will be audited.

3.4.1 Notification of arrival of CRC materials

The facility should establish a way in which relevant operators can be made aware that a customer is delivering CRC materials. For example, where staff are present in a gatehouse or weighbridge at the entrance to the facility they should ask customers if they are delivering CRC materials and if so advise the relevant operator.

At the time a customer enters the facility they should be asked what CRC materials they are carrying, if the containers all have lids, and if any of them are leaking. The customer must be informed that containers without lids, or that are leaking, cannot be accepted. If any of the materials they are carrying cannot be accepted, the customer must be informed of where they could be taken (e.g. a mobile collection event or alternative facility).

3.4.2 Unloading

The customer should remove containers from their vehicle and place them directly into the designated storage receptacle (e.g. box, cage, pallet). These receptacles will be identified with large format standard signage with a minimum size of 1m x 1m.

Once the materials are safely unloaded the customer should be directed to leave the drop-off area immediately. Under no circumstances should intermediate storage areas be used with a view for later separation as these areas are uncontrolled and materials are uncontained.

3.4.3 Storage of CRC materials

Refer to the procedures provided in the collection contractor's training package for specific information on handling CRC materials safely. This is provided to all staff who complete on site CRC training.

CRC materials are to be stored in the appropriate receptacle into which they are placed when they are unloaded from customer vehicles. Materials should be placed into the correct receptacle immediately. Materials must not be stored for later sorting. Direct placement will reduce the risk of spills and accidents.

Labels for the storage receptacles are provided by the collection contractor when these receptacles are delivered to the CRC. These labels include information necessary to comply with the *Work Health and Safety Act* and Regulation 2011 for storage and transport of dangerous goods and hazardous materials. A label appropriate to the type of receptacle and material to be stored in it must be affixed to the receptacle as soon as it is brought into service. In addition, a program-branded magnetic sign of the material type can be affixed to the receptacle to help customers sort their materials correctly.

More information on acceptance and storage of each specific CRC material is provided below.

3.4.3.1 Paint

Two streams of paint will be collected as part of this program.

Water based paint

Water based paint will be the highest volume material collected. Storage receptacles must be presented to householders in a manner that ensures separation of oil based from water based paint. Water based and oil based paints are readily identified by manufacturers' labels on the cans. Householders need to place their cans of paint directly into the storage receptacles thus eliminating the need for second handling.

Oil (solvent based) paint

Oil paint, lacquers, epoxies and other miscellaneous paint products (not including metal-containing paint, see below) are to be placed in a similar well-marked storage receptacle by the householder. By separating the water based paint, a large proportion of material collected can be classified and treated as non-flammable.

Other paint

Small quantities of metal based paint (e.g. lead, zinc) may be received at the facility. This material is considered toxic and should be separated into the by-catch stream (see **Section 3.4.4** on the following page).

Aerosol paint

Paint in aerosol cans must be stored in a receptacle that allows appropriate ventilation, but that also fully contains the aerosol cans in case they explode. More guidance is provided in **Section 3.4.3.6**.

3.4.3.2 Used Oils

Two streams of oil will be collected as part of this program – motor oil and other oil.

Motor oil

As used motor oils represent a valuable resource, most facility operators have their own arrangements with recycling contractors for collecting and being reimbursed for it. While used motor oil forms a part of the CRC program and is allocated space at a CRC, it is not collected by the EPA CRC collection contractor.

Motor oil may be decanted by customers into dedicated vessels. This is common practice at many existing sites that become CRCs. In this situation 240 litre bins or similar are provided to deposit the empty delivery containers (if the householder chooses to forfeit them). If a decanting vessel is not provided then the motor oil shall be placed, in the original packaging, into a storage receptacle (provided either by the facility operator or the contractor they engage to collect used motor oil).

Other oil

Other oil such as cooking, heating and transmission oils should be placed into the appropriate storage receptacles in the container in which they are delivered to the facility, and the delivery container forfeited by the householder. Other oils will generally be collected by the collection contractor, unless particular arrangements have been made by the facility operator. Heating oil is actually kerosene and should be stored in the Flammables Dangerous Goods Safety Cabinet.

3.4.3.3 Gas cylinders

The collection contractor will provide transportable cages for gas cylinders. Householders should place their cylinders directly into the cages with no further handling or processing on site. The cylinder valve should be closed when a cylinder is placed in a cage.

SafeWork NSW recommends that CRC operators test gas cylinders for leaks using a simple method like spraying the valve area with a mixture of water and mild detergent and looking for any bubbles. If a leak is detected, the valve can be tightened. If the leak continues the cylinder should be marked, placed in a suitably ventilated area and the collection contractor notified.

Typically two types of cages are used. For standard size bottles a three shelf cage (with door) will be used, and for longer bottles an open top cage will be used. Once the cages are near full the facility operator shall notify the collection contractor to remove the cage and replace it with an empty one.

3.4.3.4 Batteries

Two streams of household batteries will be collected as part of this program.

Lead acid batteries

As the lead inside a lead acid battery represents a valuable, facility operators have their own arrangements with recycling contractors for collecting used lead acid batteries and being reimbursed for them. While lead acid batteries form a part of the CRC program and are allocated space at a CRC, they are not collected by the EPA CRC collection contractor.

Lead acid batteries are to be placed by householders directly onto bunded pallets (provided either by the facility operator or by the contractor they engage to collect them).

Note: as lead acid batteries provide a feasible ignition source it is recommended that the bunded pallet be positioned at the opposite end of the drop-off area to the gas bottle cage, and kept away from oil based paint and used oil.

Household batteries

These are generally single use or rechargeable batteries of several types, such as zinc carbon (the most common), alkaline, nickel cadmium, nickel hydride, mercury and lithium. These are stored at a CRC in purpose-built containers provided by the EPA's collection contractor. It is preferable to separate batteries of different types into individual containers at a CRC, as this removes the need for the contractor to sort through them after they are collected. Special attention must be paid to lithium batteries, which contain certain hazardous properties, as described below.

Lithium ion and lithium metal cells and batteries, and equipment containing these, must be prepared for transport (for disposal and recycling) in accordance with packing instruction P909 of the Australian Dangerous Good Code (Current version is 7.4). Receptacles must be marked 'LITHIUM BATTERIES FOR DISPOSAL' or 'LITHIUM BATTERIES FOR RECYCLING'. The collection contractor will supply labels, receptacles and plastic liners appropriate to this purpose. The CRC operator must line the battery receptacle with the plastic liner prior to its use.

In addition, lithium batteries must be packed to prevent short circuits and the dangerous evolution of heat. This could include, but is not limited to:

- individual protection of the battery terminals, or
- inner packaging to prevent contact between cells and batteries, or
- the use of a non-conductive and non-combustible cushioning material to fill empty space between the cells or batteries in the packaging.

Lithium batteries must also be secured within the outer packaging to prevent excessive movement during transport (e.g. by using a non-combustible and non-conductive cushioning material or through the use of a tightly closed plastic bag).

3.4.3.5 Fluorescent tubes

Fluorescent tubes and globes will be placed in various receptacles designed to minimise breakage and prevent the release of mercury to the environment during storage, handling and transport. The collection contractor will provide these receptacles (e.g. boxes for tubes, bins for globes).

Procedures for the safe handling of fluorescent tubes and globes need to be included in the facility operating procedures and care needs to be exercised at all times to prevent breakage of tubes and globes.

3.4.3.6 Aerosols

Aerosol cans must be stored in a receptacle that allows appropriate ventilation, but that also fully contains the aerosol cans in case they explode. The collection contractor will provide a drum with a ventilated lid for the storage of aerosols.

The lid of the drum must be kept secure, and only opened by a CRC operator when placing aerosols in the drum. Customers are not to open the drum.

Where CRCs are not constantly staffed by a CRC operator, customers can place aerosols in the fire extinguisher cage. They can then be transferred to the drum by a CRC operator. This should take place each day the CRC is open, prior to the end of the day.

3.4.4 Storage of by-catch materials

Irrespective of gate policies and dedicated signage, a small percentage of non-targeted by-catch materials can be expected. Separate dangerous goods safety cabinets (DGSC) compliant with the relevant Australian Standards for flammable, oxidising, toxic and corrosive materials will be provided by the EPA during establishment of the facility.

The procedures for sizing and placement of DGSC are outlined in detail in **Section 1.2.6** of this Handbook.

The facility operator is to ensure that the drop-off area is inspected regularly, and that any containers of by-catch materials are placed in relevant cabinets based on the safety symbol on the container's label.

The facility operator must report the status (percentage full) of each of these cabinets to the EPA using the online reporting system. This is reported on the status screens when a change of status has occurred, for example, when a receptacle of core material is changed over or when a large volume of by-catch is received.

Refer to the procedure provided in the collection contractor's training package for more information on sorting by-catch materials into the appropriate cabinet.

Where more than one cabinet is used for a particular type of by-catch the facility operator should fill one cabinet first, then the others in succession, and report the percentage full status considering the capacity of all the cabinets. For example, where two 250L cabinets are used for flammable liquids, if one cabinet is half full, and the other cabinet empty, the percentage full status should be reported as 25%.

The EPA CRC collection contractor shall empty the cabinets at the same time as the target materials.

3.4.5 Handling of unknowns

Wherever possible the facility operator should prevent the deposit of unknown materials at the facility. Containers are not to be opened on site by either facility staff or householders for the purpose of identification.

Where acceptance cannot be prevented, the facility operator is to immediately seek specialist advice from the collection contractor. A photograph of the container should be emailed to the collection contractor with a request for advice as to how the container should be stored. Refer to the collection contractor's contact information at the front of this Handbook for the relevant email address. Once the response is received, the container should be placed in a resealable container suitable as a segregation device (e.g. a bucket or drum) appropriate to the material, labelled (e.g. with the material designation written on an adhesive label affixed to the container) and placed in the appropriate receptacle or DGSC. Where the material cannot be identified either through the provision of specialist advice, it should be placed in the Toxic DGSC.

A supply of overpackings suitable as segregation devices will be provided by the collection contractor.

3.4.6 Handling of containers that are leaking or without lids

Customers must be informed when they arrive at the facility that leaking containers or containers without lids will not be accepted.

If for some reason a container that is leaking or that doesn't have a lid is delivered to the CRC despite best efforts, it must be placed in a resealable container, that is appropriate to the material type and suitable as a segregation device, along with adequate absorbent material. The outer container must then be labelled according to the material type and then placed in the correct storage unit. Target materials should be placed in the appropriate receptacle and by-catch in the appropriate Dangerous Goods Safety Cabinet.

3.5 Transfer and removal

3.5.1 Sorting of materials

The drop-off area should be checked regularly to ensure that materials dropped off by customers visiting the CRC have been placed in the appropriate storage receptacle. The operator should attempt to identify substances in accordance with training. Should any containers need to be moved, the operator should check that containers are intact, not leaking and unlikely to fail, and use appropriate PPE (safety boots, gloves and safety glasses as a minimum) before attempting to do so.

3.5.2 Transfer of full storage receptacles

Full receptacles in the drop-off area must be transferred to the storage area to prevent receptacles from overflowing and causing hazards. The drop-off area should be checked, and cleared if necessary, at least daily. The storage area should remain locked at all times unless an appropriately trained and qualified operator is present. The storage area should only be opened for the purpose of transferring material from drop-off area into the store or for clearance of the material for disposal or recycling.

3.5.3 Removal of materials

The EPA and/or other funding bodies (e.g. product stewardship schemes) will establish and maintain contracts for the collection and recycling (or disposal) of paint, used oil (other than motor oil), gas cylinders, household batteries, smoke detectors and fluorescent lights, as well as incidental by-catch.

The facility operator will be responsible for arranging the collection and recycling (not disposal) of lead acid batteries and used motor oil. The facility operator must ensure that materials are removed with sufficient frequency to prevent the accumulation beyond the capacity of the storage area.

Collection of materials will be scheduled by the collection contractor by reviewing the information provided by the facility operator via the online reporting system (dropoffwaste.com). The facility operator may also request a collection by contacting the collection contractor directly.

Refer to the procedure provided in the collection contractor's training package for detailed information on requesting the collection of accumulated materials.

Once a collection has been scheduled the collection contractor will notify the facility operator by email. Facility operators must ensure that the collection contractor has the appropriate email address, so that the facility operator can prepare the site for a collection. An example of the email is provided as **Figure 3.5.3(a)**.

Prior to the day of the collection the facility operator must ensure the following:

1. All receptacles are packed appropriately
2. Site is accessible for the collection truck with no obstructions
3. All receptacles are labelled with labels supplied by collection contractor
4. All by-catch is sorted and segregated
5. All by-catch is placed in by-catch cabinets
6. A forklift and driver is on hand for the collection date
7. The tablet reporting device is charged so a staff member can enter the required 'Drop Off: Add to Truck' update on collection day.

Figure 3.5.3(a)

Sample notification email for CRC collection

SUBJECT: CRC [location] next collection date: 02/08/2016

TO: [location] CRC,

A truck has now been scheduled to collect materials from [location] Community Recycling Centre on Tuesday 02/08/2016.

Please ensure you add this to your CRC staff work schedule to prepare your site for collection. It is a regulatory requirement that you complete the 'Add to Truck' entry on 'Drop Off' at the time of collection.

A site ready for collection has the following tasks completed:

1. All receptacles are packed appropriately
2. Site is accessible for the collection truck with no obstructions
3. All receptacles are labelled with labels supplied by collection contractor
4. All by-catch is sorted and segregated
5. All by-catch is placed in by-catch cabinets
6. A forklift and driver is on hand for the collection date
7. The tablet is charged so a staff member can enter the required 'Drop Off: Add to Truck' update on collection day.

Contact Toxfree directly if you require any further information.

This email has been automatically generated from the Community Recycling Centres Drop Off System. Do not reply to this email.

Toxfree: **9851 4200** – **i.parkes@toxfree.com.au**

If there are any potential problems with the collection date, contact Toxfree directly.

For Drop Off technical problems, contact the Community Recycling Unit of the NSW EPA: **zac.lambert@epa.nsw.gov.au** or **9995 6346**.

On the day of the collection, the facility operator must ensure that materials are loaded and consigned in accordance with basic requirements for the transport of waste and dangerous goods as indicated by the following procedure. See **Figure 3.5.3(b)**.

Figure 3.5.3(b)

Procedure for loading and consignment of waste and dangerous goods

Step 1	When the contractor's truck arrives, ask to see the Waste Transport Certificate (WTC) number and record this number using the Online Reporting System.
Step 2	Unload empty receptacles and load truck with full receptacles using a forklift (the same number of receptacles should be unloaded and loaded). Record the number of receptacles loaded for each type of CRC material using the Online Reporting System.
Step 3	Open the by-catch safety cabinets and observe that the driver collects stored materials. Before the contractor collects the by-catch materials, enter the 'percentage full' individual cabinet amounts into the online database.
Step 4	Check that the truck has placards (hazardous signs) displayed.
Step 5	Check that the driver has completed the Waste Transport and Dangerous Goods Manifest documentation and signed it.
Step 6	Check that driver has secured the load (straps secured over receptacles and cages).
Step 7	Count the total number of the main receptacles held on site and record these using the Online Reporting System.
Step 8	If the site has a weighbridge, record the total weight of materials removed from the site (gross weight of collection vehicle on exit minus gross weight of collection vehicle on entry).

3.6 Emergency situations

3.6.1 Emergency equipment and procedures

3.6.1.1 Emergency equipment

The following safety equipment is to be provided within the CRC:

- Safety shower and eyewash
- Spill response kit
- Fire extinguishers
- Personal Protective Equipment (PPE)
- First aid equipment and supplies

Procedures to be regularly implemented:

- Test the operation of the safety shower and eyewash
- Check and replenish the first aid equipment and supplies
- Check and replenish the PPE
- Check and replenish the spill response equipment.

Spill response equipment should include: adequate quantities of suitable absorbent materials; a sufficient quantity of resealable waste recovery containers compatible with the substances being kept and marked for emergency use only; and shovels brooms and scrubbing brushes. Spill response equipment must be located at both the drop-off area and the storage area.

Dry chemical powder type fire extinguishers are appropriate for all types of CRC materials except for cooking oil, for which a wet chemical type is more appropriate. It is the CRC operator's responsibility to ensure this equipment is on hand. Refer to *AS 2444-2001 Portable fire extinguishers and fire blankets* – Selection and location for guidance on the selection and location of fire extinguishers.

3.6.1.2 Emergency procedures

Procedures must be prepared for emergency incidents involving the CRC such as fire detection and response, spill response, and customer or staff injury or exposure to hazardous chemicals.

All staff involved in the operation of the CRC must be trained in the use of the emergency procedures, sign off as having been trained and agree to undertake the relevant tasks safely in accordance with these procedures.

Refer to **Section 1.3.4.2** for more information on preparing the Emergency Plan and associated procedures.

3.6.2 Specialist advice

The EPA will establish and maintain contracts for the provision of specialist advice and support arrangements in the event of unknown materials being deposited, and other unexpected or emergency situations. The facility operator is to ensure their operating and emergency procedures appropriately reference this specialist advice.

3.6.3 General spill response

In the event of a spill the following initial response should be followed:

- protect yourself by putting on appropriate PPE as required
- protect others, identifying all people in the vicinity including members of the public, and moving them to the designated evacuation point upwind
- stop the leak (e.g. by turning off the tap, righting the drum or container, or placing in an outer container if possible)
- contain the leak by placing appropriate absorbent or bunding material in place (using the spill kits that are available)
- avoid contact with the spilled material
- advise the site supervisor or manager
- if you consider it necessary seek specialist advice and/or spill response, providing details of the chemical if known
- clean up spill
- complete incident response form as soon as possible after the situation has been contained.

Refer to the procedure provided in the collection contractor's training package for more information on general spill response.

3.6.4 Spill clean up procedures

Clean up spills in the following way:

- Contain the spill using the appropriate absorbent material
- Scoop up and recover spilled material and put into a waste container
- Repeat using appropriate absorbent material as many times as necessary in order to remove as much of the spilled material as is practical
- Clean brush and shovel of absorbent material, also placing this into the waste container
- Label waste container with details of contents if known including the absorbent material used
- Place waste container into the appropriate area of the CRC (e.g. applicable to the spilled material)

3.6.5 First aid

If any discomfort is reported, or if a person has inhaled, ingested or been contaminated with a potentially hazardous or toxic substance:

- remove the person to a safe place prior to treatment, if safe to do so. Before doing this, put on PPE appropriate to the nature of the incident
- send for a designated first aid person and, at the same time, obtain the Safety Data Sheet (SDS) for the toxic substance involved. Summon professional medical assistance without delay. If there is any doubt as to the appropriate first aid procedure contact the Poisons Information Centre (see front section of this Handbook for emergency contact numbers)
- if the person has stopped breathing, ensure a clear airway and apply an appropriate method of artificial resuscitation. Note that the appropriate method depends on the substance involved. Oxygen resuscitation or external air resuscitation may be required
- if the eyes are contaminated, wash thoroughly with water from a low-pressure water source for at least 15 minutes
- remove all contaminated clothing and footwear. Wash contaminated area with soap and lukewarm water
- carry out appropriate first aid treatment and if medical assistance has not been summoned, transport the patient to a hospital or doctor
- send the SDS (if available), product label (if available), and all relevant details of the accident, to the hospital or doctor with the patient
- complete incident response form as soon as possible after the incident in accordance with any WHS procedures.

4.
Induction and training

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Induction and training

4.1 Induction

When commencing work in the CRC, operators must be instructed in the following:

- general layout of the drop-off and storage areas, in particular the location of safety equipment such as the Safety Data Sheets, PPE, safety shower, eyewash, first aid cabinet and evacuation points
- administrative procedures for controlling risks, such as permit to work systems
- hazardous areas and restrictions on ignition sources, especially vehicles and portable items
- security measures, signs and procedures
- record keeping, in particular recording the quantity of materials currently on hand
- general emergency procedures for the facility, including the Fire Plan and Emergency Evacuation Procedures.

4.2 Training

Staff involved in the operation of the CRC should be trained and demonstrate competency in the following skills:

- storage and handling of CRC materials including identification, keeping incompatible materials separate, and appropriate spill response
- appropriate fitting and use of PPE.

The EPA will arrange for site operator training to be provided. Each and every staff member involved in the operation of the CRC must attend this training.

Refer to the collection contractor's training package for more information on the contents of this training.

Records showing who was trained, when they were trained, and by whom, are to be maintained for the following training:

- Site induction
- Site specific risk register
- Training by the collection contractor
- Training in the use of the Safe Work Method Statements (or equivalent).

Appendix 4.1: Induction checklist

Element	Done?
1. Site orientation	
1.1 Drop-off area features and infrastructure	
1.2 Storage area features and infrastructure	
1.3 Location of documentation and procedures	
1.4 Location of records and record keeping equipment	
1.5 Location of safety equipment and PPE	
1.6 Location of key security features	
1.7 Location of emergency response equipment and procedures	
2. Site risk assessment	
3. Material handling (included in collection contractor training package)	
3.1 Material types	
3.2 Hazards	
3.3 Handling	
3.4 Controls including PPE	
4. Operating procedures	
4.1 Opening and closing	
4.1.1 Signage	
4.1.2 Security	
4.1.3 Safety	
4.2 Customer service	
4.2.1 Unloading	
4.2.2 Sorting and transfer	
4.2.3 Record keeping (of basic customer information if required)	
4.3 Record keeping and reporting	
4.3.1 Material inventory	
4.3.2 Incidents	
4.3.3 Annual reporting	
4.4 Storage and changeover (included in collection contractor training package)	
4.4.1 Storage receptacle transfer	
4.4.2 Material removal and storage receptacle replacement	
4.4.3 Loading and consignment of dangerous goods	
4.5 Emergency response	
4.5.1 General spill response	
4.5.2 Situations requiring first aid	
4.5.3 Situations requiring specialist advice	

Appendix 4.2: Training register

Induction

Name	Date training completed	Signature

Appendix 4.3: Collection contractor training package (Risk management and safe work procedures)

Name	Date training completed	Signature

5.
Record keeping and reporting

Record keeping

Reporting

Using the online reporting system

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Record keeping and reporting

5.1 Record keeping

CRC operators must create and ensure the safe keeping of the following records.

5.1.1 On-site materials register

The facility should have processes and procedures in place to ensure an accurate register of stored materials is maintained and kept up-to-date, and is easily accessible in the event of an emergency.

5.1.2 Risk register

The risk register and associated risk management plan should be updated annually.

5.1.3 Training register

A record of all staff that have been provided with induction and training in the operations of the CRC should be kept on-site (and updated as staff are trained).

5.1.4 Performance self-assessment

5.1.4.1 Site establishment

Immediately after the CRC is commissioned, facility operators need to complete the site establishment checklist provided at the end of **Section 1** of this Handbook (Establishing a Community Recycling Centre) and provide a copy of the completed checklist to the EPA within 30 days of the commencement of operations.

5.1.4.2 Site operations

Periodically (at least annually), facility operators are to undertake a performance self-assessment of operations of the facility, note any issues, and implement any actions required to ensure the facility is operating safely and efficiently.

This performance self assessment is to include the following:

1. Condition of infrastructure:
    - 1.1 roofs and awnings
    - 1.2 road surfaces
    - 1.3 bunding
    - 1.4 security measures
    - 1.5 signage
    - 1.6 safety equipment including spill kits, safety shower, eyewash, first aid supplies, and fire extinguishers
2. Encroachment of surrounding activities
3. Licencing – note any changes in operations that may affect licencing

4. Materials storage and handling
    - 4.1 housekeeping
    - 4.2 material accumulation is managed appropriately
    - 4.3 materials are kept in appropriate receptacles and not on the ground around the receptacles
    - 4.4 separation of water based and oil based paint
    - 4.5 storage of by-catch in appropriate cabinets
    - 4.6 appropriate arrangements are in place for recycling of lead acid batteries and motor oils (including evidence that these are not being sent to landfill)
5. Customer supervision
6. Workplace Health and Safety procedures are understood by staff and implemented.

5.2 Reporting

5.2.1 Material quantities and collection reporting

Records of the quantities of each type of material accepted under this program are to be kept, and reported to the EPA on a weekly basis using the EPA's online reporting system. This should include the number and type of storage receptacles that are removed by the collection contractor for each type of material.

Online reporting must be done on a minimum of a weekly basis. This allows the contractor to plan their next collection in a timely manner, and the EPA to track local demand for the centre. Ongoing reporting of accurate data is a critical CRC task and will influence future program adjustments.

Although removal and disposal of motor oil and lead acid batteries is to be arranged by the facility operator, the quantities received at the facility are to be recorded and reported to EPA with reports on other materials (using dropoffwaste). The means of recycling, this includes processing and end-use must also be reported annually.

5.2.2 Annual reporting

An annual report is to be prepared outlining the following:

1. Total quantities of each type of target material received, including by-catch
2. An outline of other materials received at the facility in the year, including quantities if this information is available
3. A brief commentary on the operation of the facility over the year including highlights of promotional campaigns, customer feedback, staffing, and materials handling
4. A progress report on the implementation of recommendations from any CRC audits undertaken for the facility
5. An outline of any changes to infrastructure or operations undertaken during the year, and a summary or progress report of future plans (including design and construction).
6. A copy of the up-to-date training register for the site
7. A copy of the up-to-date risk register, and risk management plan for the site (as relevant to the infrastructure and operations of the CRC)
8. A copy of the performance self-assessments completed during the year
9. If any incidents have occurred, a list comprising the date, a brief description of the nature of each incident, and any action that has been taken to prevent recurrence of each type of incident.

The annual report is to cover the period 1 July to 30 June, and must be submitted to the EPA by 31 August each year. The EPA will provide the reporting template.

5.2.3 Incident reporting

All incidents, including but not limited to spills, injury to staff or members of the public, or events impacting on the environment are to be captured in the facility operator's incident management system. Any incidents are to be summarised in the annual report to the EPA. Significant incidents should be reported immediately to the local EPA office, the EPA Community Recycling Unit, and any other appropriate agencies.

5.3 Using the online reporting system

There are two required entries that must be completed in the CRC online reporting system, known as dropoffwaste. A CRC status update must be entered every Monday morning and each time a full receptacle is replaced with an empty one. An 'Add to Truck' entry must be completed every time an EPA contractor or Paintback truck collects materials from the CRC. For detailed information about how to use dropoffwaste, contact the Community Recycling Unit to request a user guide.

Dropoffwaste has been designed to work on a touch screen tablet. This allows the operator to walk around the centre and directly upload the status of materials stored, spare storage capacity and volumes dispatched.

Each Monday morning and every time a receptacle of core materials is changed over the operator will log on to dropoffwaste with the CRC user name and password. The CRC 'status update' screen allows reporting of number of full receptacles of core materials and an approximate percentage full of each safety by-catch cabinet. The screen also displays the date the status was last updated and the next scheduled collection date.

From the site menu, the 'Add to Truck pickup' screens will lead the operator to record the Transport Certificate Number (TCN) (this confirms that the transporter is licensed to carry dangerous goods and the load is tracked). The number of receptacles loaded on the truck is recorded on the touch screen. The next phase is to confirm the volumes held in the by-catch cabinets and record that they were collected. The operator will also be asked to confirm that the truck is 'placarded' (hazardous goods signs) front and back, that load has been secured (straps over the receptacles) and that the transport certificate has been signed. These steps cover some of the obligations of a consigner / loader in the Dangerous Goods Code. If the site has a weighbridge installed then the total weight removed from site should also be recorded.

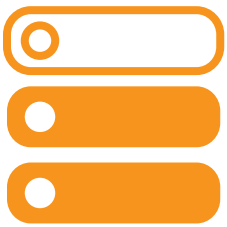
The number of receptacles held on site should then be confirmed and the status screens updated.

Once saved, this data will be accessible by the EPA and the collection contractor.

The contractor will perform detailed weighing and online reporting for each material type from their processing facility. This data will be available to the site manager within a fortnight.

When other materials are dispatched (via other contractors) such as motor oil and lead acid batteries, the total weight, volume or number must be recorded.

6. Establishing and operating mobile services for household problem wastes



Introduction

Risk management approach

Compliance with dangerous goods transport legislation

Compliance with legislation regarding transport of wastes

Establishing a mobile CRC service

Operating a mobile CRC service

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Establishing and operating mobile services for household problem wastes

6.1 Introduction

The CRC program was designed to become a network of facilities across NSW where householders could take their problem wastes to be safely stored temporarily before collection and recycling or disposal. However, the program also provided interested organisations with the opportunity to propose innovative solutions for the collection and disposal of problem waste. An innovative solution proposed by a number of organisations has been a mobile service.

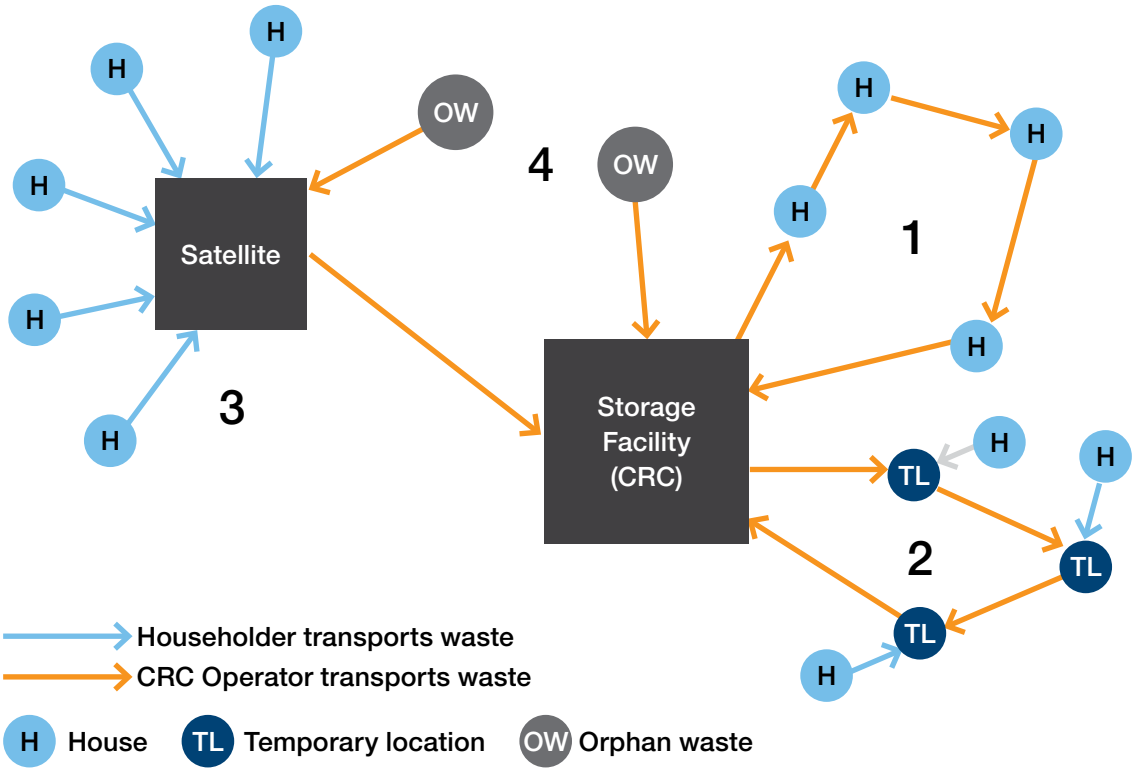
Several variations of mobile services been proposed (see **Figure 6.1** diagram).

1. **Model 1:** The CRC operator collects waste from householders directly. A vehicle or moveable unit (such as a truck or trailer equipped to transport household problem waste) travels to a house where the wastes are accepted from the householder, packed into the vehicle or unit, and then transported to the next house where further problem wastes are collected. The vehicle then travels to a storage facility (usually a standard Community Recycling Centre) where the problem wastes are unloaded from the vehicle and stored until they are collected by the EPA's collection contractor.
2. **Model 2:** The vehicle travels to a location where it remains for a period of time, and is visited by householders. The vehicle may then move to another location where it again remains for a period of time and is visited by householders. After this cycle is repeated any number of times, the vehicle then travels to a storage facility where the problem wastes are unloaded from and stored until they are collected by the EPA's collection contractor.
3. **Model 3:** Householders bring small quantities of problem wastes to one or more small drop-off points or 'satellites'. The CRC operator then packs the problem waste into a vehicle or moveable unit and transports it to a storage facility where the waste is unloaded and stored until it is collected by the EPA's collection contractor.
4. **Model 4:** The CRC operator goes to a location and collects 'orphan waste' – waste that has been left unattended somewhere within the CRC operator's area of operations. The orphan waste is brought back either to a satellite or a storage facility.

Activities that may be involved in providing mobile CRC services include:

1. acceptance of problem waste from householders
2. packing and storage of problem waste into a suitable transport vehicle
3. transport of problem waste to another location
4. intermediate or overnight parking of the transport vehicle
5. unloading of problem waste materials from transport vehicle into a storage facility
6. consolidation into storage receptacles suitable for collection by the collection contractor
7. storage of materials in a facility while they are awaiting collection
8. collection of materials by the EPA's collection contractor.

Figure 6.1 – Different models of mobile CRC services



These activities should be carefully considered to ensure the appropriate design, construction and operation of mobile CRC services. The mobile service and any associated storage facility should protect health of staff and members of the public, and minimise the impact on the environment.

This part of the Handbook outlines important considerations and minimum requirements for providing mobile CRC services. A key feature of providing mobile CRC services is the need to safely transport problem wastes that are dangerous goods, in compliance with legislation, and in accordance with waste tracking requirements.

Sections 6.2 – 6.4 provide guidance on the additional hazards and risks that must be considered in the transport of problem wastes by the CRC Operator, and the appropriate controls and legislative requirements that are generally applicable to these activities. **Sections 6.5** and **6.6** provide specific guidance on establishing and operating mobile CRC services, including the appropriate controls and minimum requirements that should be implemented when providing mobile CRC services as part of the EPA's CRC program.

6.2 Risk management approach

A risk management approach is important in effectively providing mobile CRC services. Organisations considering providing mobile CRC services must prepare an initial functional description of how the service(s) will operate, and then undertake a risk assessment to identify the most appropriate controls to incorporate into its design and operation.

It is recommended that this part of the Handbook be read fully prior to undertaking the risk assessment as it first outlines the legislative requirements applicable to the transport of problem wastes, and then provides specific guidance on the minimum requirements for mobile CRC services. This information will inform and assist in undertaking the risk assessment.

The Worksheet provided as **Appendix 2.1** of this Handbook should be used to complete this risk assessment. An example of a completed risk assessment for a mobile CRC service is provided as **Appendix 6.1**.

6.3 Compliance with dangerous goods transport legislation

In NSW the transport of dangerous goods must comply with the *Dangerous Goods (Road and Rail Transport) Act 2008* and the *Dangerous Goods (Road and Rail Transport) Regulation 2014*. The Regulation extensively references the Australian Dangerous Goods Code (ADG Code), which classifies the substances that are dangerous goods.

In general, a vehicle transporting problem wastes will carry the following substances that are dangerous goods:

- Gas cylinders (Class 2.1 – flammable gas)
- Fire extinguishers (Class 2.2 – compressed gas)
- Lead acid batteries (Class 8 – corrosive substance)
- Smoke detectors (Class 9 – miscellaneous dangerous goods)
- Solvent (oil) based paint (Class 3 – flammable liquid)
- Other by-catch materials as determined by the CRC operator.

Operators of mobile CRC services must therefore comply with the requirements of the Act and Regulation. The NSW EPA regulates the on-road transport of dangerous goods and provides an outline of the requirements at **www.epa.nsw.gov.au/dangerousgoods**. A summary of the requirements relevant to mobile CRC services is provided here.

The Act, Regulation and the ADG Code specify the controls that must be implemented to manage the risks associated with the transport of dangerous goods. Different levels of controls apply to different types of loads, depending on the size of the receptacles (containers in which the dangerous goods are packed) and the total quantity of goods transported. **Table 6.1** outlines the three types of loads defined by the legislation, and the controls applicable to each.

6.3.1 Placard load

A placard load is any load containing an aggregate quantity of dangerous goods of 1,000kg or L or more, or individual receptacles greater than 500L capacity or with a net mass greater than 500kg. Where individual receptacles up to 500L capacity or net mass less than 500kg are transported, a placard load is also any of the following:

- Any quantity of Class 6.2 – infectious substances – Category A
- 10kg or more of Class 6.2 – infectious substances – Category B
- 250L or kg or more where there is any Division 2.1 – flammable gases (not including aerosols) or 2.3 – toxic gases, or any Packing Group I substance.

The legislation requires CRC operators to implement the controls listed in **Table 6.1** that are relevant to the specific design of their mobile CRC service. Many vehicles providing mobile CRC services will be designed to carry more than 250kg or L of gas cylinders, or 1,000kg or L or more of other dangerous goods, in receptacles less than 500L capacity or net mass 500kg. In this case the controls listed in **Table 6.1** for Transport Type 2 would be implemented. However, the CRC program requires CRC operators to implement more stringent controls. Details of what is required are outlined in **Section 6.5** Establishing a mobile CRC service.

Table 6.1: Controls applicable to various types of Dangerous Goods loads

Type of Transport	Controls
1. Less than placard load	Transport documents
2. Placard load (where receptacles have up to 500L capacity or net mass up to 500kg)	Placards (Class Labels) Transport documents Emergency information Emergency information holder Double-sided reflectors 30B Fire extinguisher Driver protective equipment Materials stowed correctly Segregation
3. Placard load (where receptacles have greater than 500L capacity or net mass greater than 500kg)	Placards (EIPs and Class Label) Transport documents Emergency information Emergency information holder Double-sided reflectors Additional fire extinguishers Driver protective equipment Materials stowed correctly Segregation Vehicle and driver to be licensed

6.3.2 Transport documents

Transport documents listing the type and quantity of dangerous goods are required at all times that these goods are transported. The transport document must include the following information in legible English:

1. Consignor's name and telephone number
2. A description of the dangerous goods including:
    - United Nations number (UN number)
    - the proper shipping name, or the name that appears on the packaging or receptacle
    - the dangerous goods Class or Division
    - the subsidiary risk (if applicable)
    - the packing group (if applicable)
    - a description of each receptacle, e.g. 'drum' or 'intermediate bulk container' (IBC).
3. The number of packages or receptacles of each type
4. The 'aggregate quantity' of the goods. This is the total quantity in litres and/or kilograms of each separate type of dangerous good being transported. At all times the aggregate quantities shown must reflect the actual quantities currently on the vehicle. It must be updated as dangerous goods are loaded and unloaded from the vehicle.

The driver of the mobile CRC vehicle must ensure their transport documents are carried in the vehicle's cabin, and make them available to any authorised person and emergency services if requested. If the vehicle is transporting a placard load, transport documents must be carried in the emergency information holder.

A template for a transport document suitable for a mobile CRC vehicle is provided as **Appendix 6.2**.

6.3.3 Placards

Information on placarding requirements is provided in **Section 5.3** of the ADG Code. A mobile CRC vehicle carrying a placard load must be placarded with a Mixed Class Placard as more than one Class or Division will be carried in the load. Placards must be: displayed in a substantially vertical plane and securely fixed to the vehicle; or stencilled onto or printed on to it; or placed securely in a frame that is securely fixed to the mobile CRC vehicle. The placard must be durable and weather resistant, have letters and numerals that are legible, and must not be obscured. The part of the mobile CRC vehicle immediately behind the placard must be of a contrasting colour to the colour of the placard unless the border of the placard is of a contrasting colour and design.

Any placard must be capable of being removed. It is an offence to display a placard if there are no dangerous goods in the load.

As a minimum, placards must be installed on the front and rear of the vehicle.

In the case of a trailer the whole unit becomes a combination vehicle. If the whole combination is carrying a placard load, a dangerous goods placard should be placed at the front and at the rear. If any part of the combination vehicle contains more than a placard load on its own, then it requires additional placards on each side. Again a mixed class placard will be required as more than one Class or Division will be carried in the load. For more details on placard requirements, including the particular locations they must be displayed for other combinations, refer to **Section 5.3.6** of the ADG Code.

Mixed class placard

6.3.4 Emergency information

Emergency information addresses substance hazards, first aid procedures and the protective equipment to use. It explains how to deal with any emergency involving dangerous goods, such as a leak, spill, vehicle rollover or fire. The following are acceptable types of emergency information:

- the Standards Australia HB76 Dangerous Goods – Initial Emergency Response Guide (recommended)
- an individual Standards Australia emergency procedure guide (EPG) plus the emergency guide for vehicle fire
- an emergency procedure guide plus a vehicle fire guide that are both substantially the same as the Standards Australia guides
- any other emergency procedure guide plus a vehicle fire guide, which have both been approved by the EPA before the mobile CRC service becomes operational.

A safety data sheet (SDS) is not the same as emergency information and is not acceptable.

Where an operator of a mobile CRC service prepares their own emergency procedure guide, it should be prepared using specialist advice such as from an appropriately qualified and experienced Dangerous Goods Consultant.

In the case of a placard load, emergency information must be carried in an emergency information holder. If less than a placard load is being transported and an emergency information holder is not fitted, emergency information must be in a prominent position in the cabin if it is a vehicle, or if it is a trailer, at the front of the trailer.

6.3.5 Emergency information holder

An emergency information holder must be fitted to a vehicle transporting a placard load of dangerous goods. The holder must be:

- of a size and shape suitable for carrying emergency information and transport documentation
- marked with the words 'emergency procedure guides' or 'emergency information' in red letters at least 10mm high on a white background
- securely placed on a road vehicle in one of these locations:
  - on the inside of a door of the cabin
  - immediately adjacent to a door of the cabin
  - if either of the above is not possible, in a visible and accessible position in the cabin (provided the position of the holder is identified on a notice affixed to the inside of the driver's door).

6.3.6 Safety equipment

The following safety equipment must be carried on a vehicle transporting a placard load of dangerous goods:

- three double-sided reflector signals that comply with AS 3790 and are clean and in good condition
- one 30B dry powder fire extinguisher located in or directly behind the cabin near the driver's door, or at the front of any trailer
- personal protective and safety equipment including thermal insulated gloves, chemical resistant gloves and chemical resistant boots.

Each fire extinguisher must be mounted securely in a quick-release bracket. In cases of combination vehicles, a fire extinguisher must be provided for every separate trailer transporting a placard load. Refer to *AS 2444-2001 Portable fire extinguishers and fire blankets – Selection and location* for more guidance on the selection and location of fire extinguishers.

Safety equipment requirements depend on the type of dangerous goods being transported. **Table 6.2** (an excerpt from **Table 12.2** in the ADG Code) shows the safety equipment required for transporting each class or division of dangerous goods in a mobile CRC vehicle.

Table 6.2: Personal Protective Equipment required for mobile CRCs

Minimum equipment required	Class of Dangerous Goods (refer to **Section 6.3** for material types relevant to classes)					
	2.1	2.2	3	6.1	8	9
Respiratory protection equipment for escape purposes	No	No	No	***[a]***	***[a]***	No
Face hugging goggles with increased facial seal or full face shield as appropriate	Yes	Yes	No	Yes	Yes	No
Eye wash kit at least 250ml capacity, filled and ready for use	No	No	Yes	Yes	Yes	Yes
Chemical resistant gloves or gauntlets	No	No	Yes	Yes	Yes	Yes
Thermal insulated gloves or gauntlets	Yes	Yes	No	No	No	No
Chemical resistant suit or coveralls	No	No	No	Yes	Yes	No
Chemical resistant boots	No	No	No	Yes	Yes	No
Any electric torch	No	Yes	No	Yes	Yes	Yes
Electric torch complying with AS/NZS 60079.11 or other recognised Code	Yes	No	Yes	No	No	No

[a] The minimum requirement is air supplied short term breathing apparatus suitable for escape purposes, except when, even in an emergency, the dangerous goods will not give rise to harmful vapours, gases or dust. Note that where a driver attends to the loading or transfer of goods, self contained breathing apparatus with a duration of greater than 15 minutes may be required by other (e.g. health and safety) legislation.

Minimum requirements for safety equipment are outlined in **Section 6.5.3** Important design elements of a mobile CRC vehicle.

6.3.7 Stowing materials correctly

The mobile CRC vehicle must be strong enough to withstand the rigours of transport. Packages must be stowed and restrained within the vehicle or trailer as outlined in the National Transport Commission's Load Restraint Guide. This includes any intermediate containers into which the materials are loaded. The design and operation of the mobile CRC service must ensure that materials are stowed correctly, and that manual handling by operators is kept to a minimum. Further guidance on the important design elements of a mobile CRC vehicle is provided in **Section 6.5.3**.

Before loading, the interior and exterior of the mobile CRC vehicle must be inspected to ensure there is no damage that could affect its integrity or that of the packages to be loaded in it. Specific loading instructions such as orientation arrows, 'not to be double stacked' 'keep dry' or temperature control requirements must be met. Liquid dangerous goods must be loaded below dry dangerous goods whenever possible. Packaging fitted with a vented closure must be stowed and restrained with the closure at the top.

If the dangerous goods are of a kind that may lead to the formation of flammable, toxic or other harmful atmospheres, they must be stowed so that no harmful atmosphere will accumulate in the vehicle cabin if there is a leak.

Packages that appear to be leaking or damaged, potentially allowing the contents to escape, must be placed in an appropriate container together with appropriate absorbent material, before they are loaded into the mobile CRC vehicle. The container used must be approved for dangerous goods transport, such as the HAZMAT containers used by Fire and Rescue NSW, or pails, drums or kegs that have been approved and provided by the EPA's collection contractor.

For a vehicle that has open or non-rigid sides:

- materials must be stowed and restrained within rigid sides or gates
- no package containing dangerous goods may protrude above the sides or gates by more than 30 per cent of the height of the article or package, and
- no package may protrude horizontally beyond the sides or gates.

A curtain-sided container or vehicle is not regarded as a closed unit and must be fitted with gates. The requirement for rigid sides or gates does not apply to intermediate containers or segregation devices, as long as they are restrained on the vehicle according to the load restraint guide.

6.3.8 Segregation

Segregation rules help minimise the risk of incompatible substances reacting dangerously if they were to come into contact with each other. Such contact might be caused by a leak, spill or vehicle accident. Section 6 of the ADG Code has considerable information covering segregation rules, the types of segregation devices and their design tests, and how to use such devices.

In general, the target materials carried on a mobile CRC vehicle do not need to be segregated. However by-catch materials, if accepted, do need to be segregated. If these materials are to be accepted, specialist advice must be obtained on the appropriate segregation devices to be used and the design of the mobile CRC vehicle.

The mobile CRC vehicle must be designed such that lead acid batteries are not packed immediately adjacent to either motor oil or gas cylinders.

6.3.9 Dangerous goods training and licensing

Mobile CRC vehicles only need to be licensed for dangerous goods transport if they are designed to carry individual receptacles that have a capacity of more than 500L or contain more than 500kg of dangerous goods. Where this is the case, the vehicle must be covered by a dangerous goods vehicle licence and the driver must hold a dangerous goods driver licence.

A licence can be issued for a vehicle that will be loaded with dangerous goods, such as a trailer, rigid vehicle, B-double trailer or a road-train trailer. Prime movers are not able to be licenced. A single licence is issued for each transport organisation and details of each vehicle are included on that licence. The licence is valid for one year and is nationally recognised. Applicants for a vehicle licence must:

- provide information about the vehicle
- advise the class or classes of dangerous goods to be carried
- hold an insurance policy for the vehicle to cover clean-up and emergency services costs incurred in response to, and recovery of, any vehicle(s) and/or goods involved in a dangerous goods incident
- pay the licence application fee (currently $89)
- provide a rear 3/4 image of the vehicle showing the number plate and vehicle type.

More information on application requirements is available at **www.epa.nsw.gov.au/dangerousgoods/training.htm**.

A current dangerous goods driver licence issued by any state or territory is recognised throughout Australia. Holders of a current interstate dangerous goods driver licence are able to drive a dangerous goods vehicle anywhere in NSW.

Dangerous goods driver training

Before applying for a dangerous goods driver licence, the driver must complete a certified training course in the transport of dangerous goods by road (reference number TLILOC3013A). Information on providers of this training can be found at **www.training.gov.au**. Applicants for a dangerous goods driver licence must:

- complete the required training provided by an appropriate Registered Training Organisation (RTO)
- be certified as medically fit by a general practitioner
- have a satisfactory driving history
- provide identification (passport-sized photographs and a copy of your vehicle driver licence)
- obtain the RTO's certification on the application form
- submit an application within 6 months of undertaking the training or the medical assessment.

More information on application requirements is available at **www.epa.nsw.gov.au/dangerousgoods/training.htm**. The requirements for driving history and medical fitness are given in the licence application form.

6.4 Compliance with legislation regarding transport of wastes

The operation of a mobile CRC service involves the transport of waste and is subject to the requirements of the *Protection of the Environment Operations Act 1997* (the Act), and the *Protection of the Environment Operations (Waste) Regulation 2014* (the Regulation). These requirements are outlined below.

6.4.1 Environment protection licence

An environmental protection licence is required to undertake certain activities (scheduled activities) that are not premises-based (Clause 49 of the Act). The transport of more than 200kg of category 1 trackable waste is a scheduled activity (Clause 48 of Schedule 1 of the Act).

Category 1 trackable waste means waste transported within NSW of a type described in Part 1 of Schedule 1 of the Regulation that exhibits any of the characteristics specified in Part 3 of that Schedule. Not all CRC target materials are specifically listed as Category 1 trackable wastes. Only waste paint, waste oil (waste mineral oil, water/oil mixtures), and lead acid batteries (as these contain acid) are listed. Smoke detectors, gas cylinders, fluorescent tubes and globes, and household batteries are not listed as Category 1 trackable waste. **Table 6.1** below shows which household problem wastes are trackable.

Under Part 9 of the Regulation, waste oil and lead acid batteries are exempt from the tracking requirements outlined in Part 4 of the Regulation (notices 2006-E-4 and 2009-E-1, respectively). However, these exemptions only modify the record keeping requirements, they do not remove them.

An environment protection licence is therefore required where a mobile CRC service will transport more than 200kg of paint, oil, or lead acid batteries at a time.

Table 6.1: Status of household problem wastes as Category 1 trackable wastes

Household Problem Waste	Trackable Waste?
Targeted	
Paint (water based, oil –based, and other paint types)	YES
Used oil (non-hazardous waste hydrocarbon oil)	EXEMPTED BY 2006-E-4
Batteries – lead acid batteries	EXEMPTED BY 2009-E-1
Batteries – other household types	NO
Domestic gas cylinders (typically LPG, but also other types)	NO
Conventional tube type and compact fluorescent lamps, and other types	NO
Smoke detectors	NO
Not targeted but accepted	
By catch (Toxic, Flammable Liquid, Oxidiser, Acid, Alkali)	YES

Waste transporter licence application

Applications for this licence must be made using the application form that is available at:

www.epa.nsw.gov.au/resources/licensing/140543-licence-application-waste-transport.doc.

6.4.2 Waste tracking

Part 4 of the POEO (Waste) Regulation 2014 (the Regulation) places certain obligations on consigners, transporters, and receivers of waste to track and record the movement of waste.

The EPA approved an exemption under Part 9 of the Regulation on 12 August 2016, modifying these obligations and simplifying the requirements for operators of CRCs, in particular operators of mobile CRC services.

Where the waste tracking exemption applies

The exemption applies to household problem waste that is trackable waste and that is being transported to a CRC that has been approved and established under the NSW Government's Waste Less, Recycle More Initiative.

The exemption applies to:

- waste delivered by a householder to a CRC; or
- waste collected from a householder, or a temporary location, or a satellite CRC; or
- orphan household waste collected by a mobile, satellite or central storage facility (CRC) operator.

It exempts a consignor, a transporter, and a receiver of waste to which the exemption applies from Part 4 of the Regulation.

Conditions relating to the exemption of transporters

A transporter is exempt only if the transporter complies with these conditions.

For each load of waste transported, the transporter must make a record of the following:

- the name and address of the transporter
- the transporter's environment protection licence number (if the transporter is required to be licensed under the Act)
- the registration number of the vehicle used to transport the waste
- the type and quantity of the waste transported
- the date on which the waste is delivered to the receiver
- the name and address of the receiver
- the date on which the record was made.

The transporter must:

- retain the record for a period of not less than four years after the date on which the record was made;
- make the record available for inspection by an authorised officer on request; and
- give a copy of the record to the receiver.

Conditions relating to the exemption of receivers

A receiver is exempt only if the receiver complies with the following conditions. The receiver must:

- retain the copy of the record made by the transporter (see above) for a period of not less than 4 years after the time the record was made; and
- make a copy of the record available for inspection by an authorised officer on request.

Dangerous goods requirements

The exemption does not exempt any person or class of person from any requirement under the *Road and Rail Transport (Dangerous Goods) Act 1997* or the Regulations made under that Act.

Definitions

- **Householder –** person who owns, or rents, or lives in a house or tenement, and generates household problem waste.
- **Temporary location –** a location at which a mobile CRC service temporarily collects household problem waste as part of the EPA's Community Recycling Centres Program.
- **Mobile CRC service –** a service in which household problem waste is collected from dispersed locations and transported to either a Satellite CRC or a Central CRC.
- **Satellite CRC –** a location at which small quantities (less than minor quantities as defined by AS3833 The Storage and Handling of Mixed Classes of Dangerous Goods) of household problem waste can be deposited and stored temporarily, prior to transport to a Central CRC.
- **Central CRC –** a Community Recycling Centre that has been approved and established as such by the EPA.
- **Orphan waste –** household problem waste left abandoned on public land.
- **Household problem waste –** waste generated by householders which CRCs are designed to accept and store including:
    - paint (water based, oil based and other paint types)
    - used oil
    - batteries (including lead acid batteries, and other types of batteries used by households)
    - domestic gas cylinders (typically LPG, but also other types)
    - conventional tube type and compact fluorescent lamps, and other types
    - smoke detectors
    - other types of hazardous waste originating from household or domestic sources.

Not all household problem waste is trackable waste.

Householders

As a result of the exemption, householders are now exempt from waste tracking requirements where they transport waste to an approved CRC or mobile CRC service.

Operators of a mobile CRC service

Operators of a mobile CRC service transporting household problem waste from a household, a temporary location, a satellite CRC, or collecting orphan waste, are exempted from waste tracking requirements for movements of waste to a central CRC. However, these operators are required to carry a Transport Document listing the waste carried. The required form of Transport Document is provided as **Appendix 6.2**.

Operators of a mobile CRC service must obtain a Waste Transport Licence for movements where applicable (refer to **Section 6.4.1**).

Central CRC operators

Receivers of waste being transported to a central CRC are exempted from waste tracking requirements. However, they are required to keep copies of the transport documents provided to them by transporters delivering waste to the Central CRC for a minimum of four years.

Transport of waste by the collection contractor

The contractor engaged by the EPA to collect waste from CRCs must generate a new transport certificate number (TCN) under a new consignment authorisation (CA) for movements of waste from the central CRC to the collection contractor's receiving facility. The collection contractor generates a CA for the central CRC that is part of a mobile CRC service. The organisation that operates the central CRC (which is a waste facility as defined by the Act) must confirm consignment of the waste by completing the appropriate part of the transport certificate when the waste is collected by the contractor.

When the EPA's contractor collects the target materials (paint, oil, gas bottles, batteries, smoke detectors and fluorescent lights), the CRC operator must lodge this information on the online Drop Off system. The CRC operator must also use this system to capture the transport certificate number, record the number of receptacles collected, confirm that placards were displayed and the load was secured, and enter the total weight collected (if there is a weighbridge on site). This process will ensure the movement of materials from the CRC to the collection contractor's premises is tracked and meets all ADG requirements.

This activity is not exempted. Only transport of household problem waste to a central CRC is exempt.

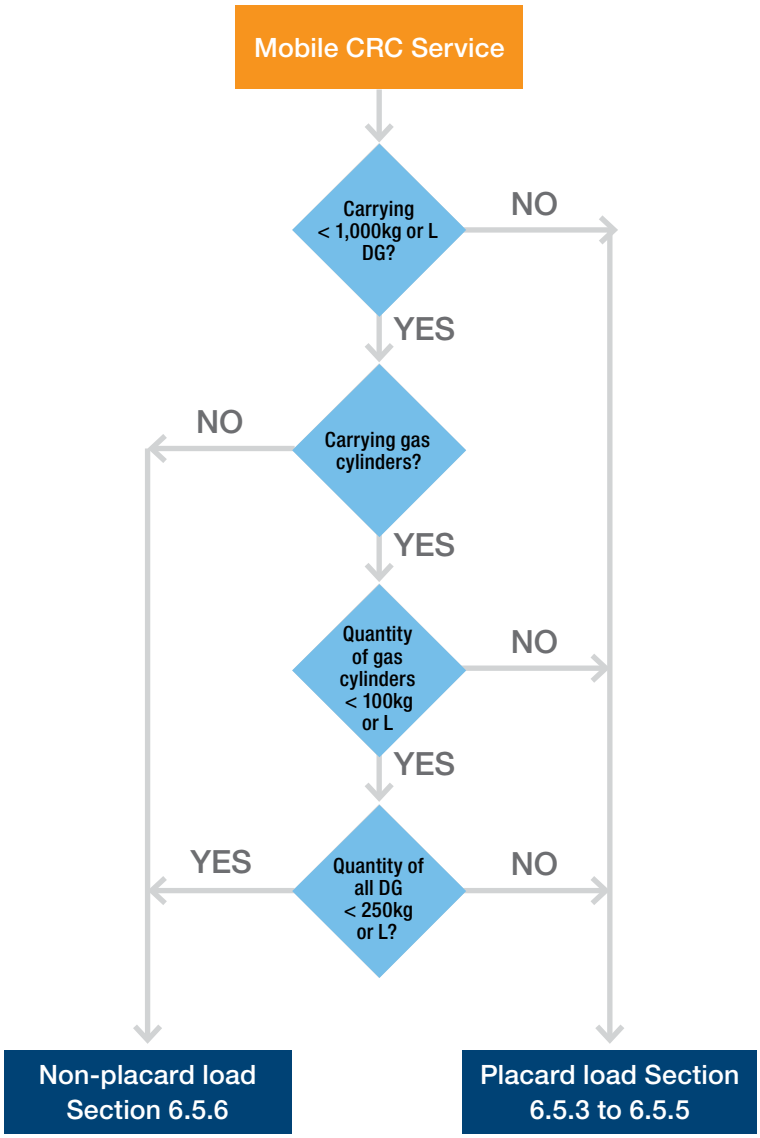
6.5 Establishing a mobile CRC service

6.5.1 Size and capacity of the mobile CRC service

When considering the establishment of a mobile CRC service, the following factors should to be taken into account.

- The distribution of householders and their willingness and ability to travel to the locations proposed for the service
- The number of locations proposed to be served
- The number of households to be served
- The type and quantity of the different materials that are to be accepted
- The required capacity of the mobile CRC vehicle(s) and storage facility.

The flowchart below provides a simple test to determine whether a mobile CRC must meet the requirements of a placard load under the dangerous goods legislation. It also includes references to relevant sections of the Handbook.



6.5.2 Preparing materials for acceptance

When operating a mobile CRC service, the means for providing clear instruction to householders on what materials are accepted (and what materials are not) and how to present them at the drop-off or pick-up point must be considered. This could include signage on a mobile CRC vehicle at a location visited by householders, or information mailed to householders prior to a pick up from their house. Consideration should also be given to the appropriateness of providing bags for certain types of materials for segregation, and to minimise the manual handling and loss of containment risks.

6.5.3 Important design elements of a mobile CRC vehicle

The design of a mobile CRC vehicle must incorporate the following features.

Sizing

When designing the mobile CRC transport vehicle, ensure that the appropriate weight capacity calculations are undertaken. The material carrying capacity of the vehicle will be net of the weight of all the equipment, shelves, compartments and receptacles to be carried. For example a trailer rated for 3T may only be able to carry 2T of materials once the weight of equipment and compartments is taken into consideration.

Transport receptacles

Materials should be transported in receptacles appropriate to their type.
Liquids (e.g. water based and solvent based paint) must be transported in bunded storage receptacles.

Transport receptacles must be fixed or easily secured to prevent movement during transport that could cause damage to the vehicle, receptacle failure, or loss of containment. Transport receptacles and any shelving built into the mobile CRC vehicle to accommodate them must be adequate for the load they will bear. The way in which any shelves are used must minimise overloading.

The transport receptacles must be easily accessible for packing to minimise manual handling difficulty, and prevent operator slips, trips or falls when entering the mobile CRC vehicle that could result in injury or loss of containment.

Transport receptacles should either be able to be unloaded in their entirety by forklift, or be unpacked easily in a way that minimises manual handling difficulty. During packing or unpacking of fixed storage receptacles, the mobile CRC vehicle should allow easy use of intermediate containers such as a box trolley or wheeled receptacle to minimise the risk of loss of containment and impact on public health or environment.

Transport of flammable liquids and gases

Flammable liquids and gases (oil based paint, gas cylinders) must be kept separate from ignition sources (especially lead acid batteries) inside the mobile CRC vehicle.
The vehicle must be adequately ventilated to prevent build-up of flammable gases from gas cylinders and flammable liquids, such as solvent based paint. Flammable liquids must be stored in a bunded transport receptacle.

Transport of aerosols

The transport of aerosols, being flammable gases, presents some difficulties and is not recommended. If aerosols are collected and transported as part of a mobile CRC service, the following considerations apply:

- the aerosols must be transported in a cage receptacle that allows adequate ventilation to prevent the build up of dangerous gases and provide protection, should an aerosol can explode.
- The cage receptacle should be transported in a part of the mobile CRC vehicle that is also adequately ventilated and kept separate from ignition sources.

Transport of gas cylinders – flammable and non-flammable

A mobile CRC service should only collect regular household gas cylinders. Other types of gas cylinders such as acetylene, oxygen and medical oxygen, or vehicle LPG tanks require additional controls and add a level of complexity that is outside the scope of the CRC program.

Gas cylinders must not be stacked, but can be placed in a cage with multiple level racks. Gas cylinders must not be stowed near a source of heat. When transporting gas cylinders the main valve must be closed and any regulator removed prior to loading.

When gas cylinders are transported in standard gas industry cylinder pallets (stillages):

- the cylinders must be secured within the frame of the stillage by a lashing system that meets the load restraint guide
- not more than 45 per cent of the height of the cylinders may protrude above the stillage rail
- the stillages must be stowed and restrained according to the load restraint guide.

Where gas cylinders are collected as part of a mobile CRC service, consideration should be given to transporting them separately to all other types of problem wastes collected by the service.

Transport of lead acid batteries

Lead acid batteries are the primary corrosive material accepted by the CRC Program and must not be stacked. They should be able to be secured when packed in an upright position.

Transport of household batteries

Single use household batteries are to be placed in a purpose built collection receptacle supplied by the collection contractor. Household batteries of all types are to be placed in the same container. Special requirements apply to lithium metal and lithium ion batteries.

Lithium ion and lithium metal cells and batteries, and equipment containing such cells and batteries, must be packaged in accordance with instruction P909 of the Australian Dangerous Goods Code (current version is 7.4), when transported for disposal or recycling. Receptacles must be marked ‘LITHIUM BATTERIES FOR DISPOSAL’ or ‘LITHIUM BATTERIES FOR RECYCLING’. The collection contractor will supply labels and receptacles appropriate to this purpose.

In addition, lithium batteries must be packed to prevent short circuits and the dangerous evolution of heat. This could include, but is not limited to:

- individual protection of the battery terminals, or
- inner packaging to prevent contact between cells and batteries, or
- the use of a non-conductive and non-combustible cushioning material to fill empty space between the cells or batteries in the packaging.

Lithium batteries must be secured within the outer packaging to prevent excessive movement during transport (e.g. by using a non-combustible and non-conductive cushioning material or through the use of a tightly closed plastic bag).

Transport of by-catch

If by-catch is accepted, separate transport receptacles that are appropriate segregation devices must be provided for each of the following types of materials: flammable liquids, toxics, oxidisers, acids, and alkalis. Specialist advice on the appropriate type of segregation devices required for each type of material, and their location within the mobile CRC vehicle, must be obtained if it is intended that by-catch be accepted.

Safety and spill response equipment

The following safety equipment must be carried on a mobile CRC vehicle:

- three double-sided reflector signals that comply with AS 3790 and are clean and in good condition
- one 30B dry powder fire extinguisher located in or directly behind the cabin near the driver's door, or at the front of any trailer
- personal protective and safety equipment including thermal insulated gloves, chemical resistant gloves and chemically resistant boots.

Each fire extinguisher must be mounted securely in a quick-release bracket. In cases of combination vehicles, a fire extinguisher must be provided for every separate trailer transporting a placard load. Refer to *AS 2444-2001 Portable fire extinguishers and fire blankets – Selection and location* for more guidance on the selection and location of fire extinguishers.

As a minimum, a mobile. CRC vehicle must have the following personal protective equipment (PPE):

- gas tight goggles or full face shield as appropriate
- eye-wash kit
- chemically resistant gloves or gauntlets
- thermally insulated gloves or gauntlets
- chemically resistant suit or coveralls
- chemically resistant boots
- electric torch complying with AS/NZS 60079.11
- first aid kit

The CRC operator must carry out its own risk assessment and determine any additional safety equipment appropriate to its particular operation. The risk assessment and determination must be recorded and kept for reference.

The mobile CRC vehicle must also carry spill response equipment appropriate to the materials being carried. This includes adequate quantities of absorbent material, a sufficient quantity of resealable waste-recovery containers made of materials compatible with the substances being kept, and marked for emergency use only, and shovels and brooms. Waste recovery containers should be approved for dangerous goods, such as the Hazmat bins used by Fire and Rescue NSW.

Procedures are to be implemented to regularly:

- check and replenish the first aid equipment and supplies
- check and replenish the personal protective equipment (PPE)
- check and replenish the spill response equipment.

PPE should be kept separate from normal clothing, and cleaned and maintained after use in accordance with the manufacturer's instructions and the relevant Australian Standard.

Security

The mobile CRC vehicle must incorporate security features to prevent theft of the vehicle, access to the storage compartment and theft of material.

Signage and labelling

The mobile CRC vehicle must be provided with placards as outlined in **Section 6.3.3**.

A CRC program branded sign must be installed on the mobile CRC vehicle. Signage acknowledging the NSW EPA and Environmental Trust must also be installed on the vehicle. Please contact the Community Recycling Unit to discuss custom signage. Email **recycling.centres@epa.nsw.gov.au**

Signs with pictorial and text descriptors appropriate to the type of material to be stored must be installed on the receptacles to allow easy sorting and packing by operators. If appropriate, the signage should include how materials are to be packed in the storage receptacles.

The EPA will provide artwork in electronic format to maintain consistent branding across the network and to distinguish CRCs from the Household Chemical CleanOut events. The particular requirements for the mobile CRC service must be discussed with the EPA's Community Recycling Unit, and all artwork for signs must be sent to the Unit for approval prior to purchasing and installing the signs.

6.5.4 Safety and environmental management procedures

Established processes and documented procedures such as Safe Work Method Statements (SWMSs) or Safe Operating Procedures (SOPs) should be in place for both the mobile CRC service and the storage facility to protect the health and safety of customers and staff. These procedures must be based on a risk assessment approach as outlined in **Section 6.2**.

All staff involved in the operation of the mobile CRC service are to be trained in the use of the SWMSs and must sign off as having been trained and agreeing to undertake the relevant tasks safely in accordance with the SWMSs.

6.5.5 Emergency preparedness and response

The equipment and facilities required for emergency situations have already been outlined in previous sections. The mobile CRC vehicle must have reflectors, fire extinguishers, a spill response kit and personal protective equipment on board. The storage facility must have a safety shower and eyewash station, spill response kits, fire extinguishers, personal protective equipment and first aid equipment on site.

An emergency response plan, outlining the initial response in the event of vehicle accident, loss of containment, fire or other incident, must be prepared and carried with the mobile CRC vehicle. Refer to **Section 6.3.4** Emergency Information for details of what is required.

An emergency plan and associated procedures must be prepared for the storage facility, and located near the entrance to the facility. Refer to **Section 1.3.4.2** for more information on preparing the emergency plan and associated procedures. All staff involved in the operation of the mobile CRC service and associated storage facility must be trained to implement the emergency plans and procedures.

The EPA will establish and maintain contracts for the provision of specialist advice and support arrangements in the event of unknown materials being deposited, and other unexpected or emergency situations. The mobile CRC operator is to ensure its operating and emergency procedures appropriately reference this specialist advice.

6.5.6 Specific requirements for transport from a satellite

Whilst the operator of a satellite arrangement will transport dangerous goods and trackable waste from the satellites to the storage facility in a similar way to other models, due to the smaller quantities of materials to be transported, minimum requirements are slightly different.

Dangerous goods quantity limits

If flammable gas cylinders (Class 2.1) are not being transported, loads must be in quantities of less than 1,000kg or L of dangerous goods. If the load contains flammable gas cylinders, then a total quantity of dangerous goods of 250kg or L may be transported, and the quantity of gas cylinders must not exceed 100kg or L. Note that these quantity limits apply to the capacity of the cylinders. No individual transport container must have a capacity of greater than 500kg or L. Note also that water based paint is not a dangerous good and does not need to be included in these quantity limits.

Controls required

Transporting wastes under the dangerous goods quantity limits means that the loads are not placard loads. The only control required by the dangerous goods transport legislation is to carry transport documents. However, operators of a satellite must implement the following controls when transporting any load:

- Carry transport documents showing the quantity of each type of material being transported – refer to **Section 6.3.2** for details on the appropriate information to be provided in the documents
- Keep a copy of Standards Australia HB76 Dangerous Goods – Initial Emergency Response Guide in the cab of the transport vehicle

- Locate a 30B fire extinguisher at the front of vehicle behind the cab or in an easily accessible position
- Carry a small spill kit appropriate to the quantity of materials being carried, in particular the largest package being carried
- Provide the following protective equipment for the driver: safety glasses, eye-wash kit, chemical resistant gloves, thermal insulated gloves, chemical resistant suit or coveralls, chemical resistant boots, and an electric torch complying with AS/NZS 60079.11 or other recognised Code
- Stow materials safely in accordance with the guidance provided in **Sections 6.3.7** and **6.5.2**
- If by-catch is transported, provide separate transport receptacles such as pails or boxes that are appropriate segregation devices for each of the following types of materials: flammable liquids, toxics, oxidisers, acids, and alkalis. Specialist advice on the appropriate type of segregation devices required for each type of material, and their location within the transport vehicle must be obtained if it is intended that by-catch be transported.

In addition, packages in which materials have been delivered must be inspected prior to loading to ensure they are in a sound condition and are not leaking. Intermediate containers should be used if necessary. A sufficient supply of appropriate intermediate containers should be kept on the transport vehicle for this purpose.

In order to limit exposure to ignition sources, smoking must not be permitted in and around the satellite, transport vehicle or in the storage facility at any time. Mobile phones should not be used near any material storage areas.

Flammable liquids such as solvent based paint and flammable gas cylinders should be packed separately from lead acid batteries.

Waste tracking

The waste tracking requirements outlined in **Section 6.4** must be met.

6.5.7 Specific requirements for the design of satellites

In general satellites will be small sites at which only a small quantity of materials are kept. They should be established and operated as a minor store as outlined in Section 2 of *AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers*. **Table 6.3** outlines the maximum quantities for minor storage.

Where a satellite is operated with quantities greater than those of a minor store, it should meet all the requirements for a regular CRC as outlined in this Handbook.

Table 6.3: Maximum quantities for minor storage

Description	Quantity, kg or L		
	Packing Group I	Packing Group II	Packing Group III
Total quantity of all dangerous goods	25	250	1,000

Notes:

1. It is permissible to store, at the same time and in the same area, the maximum allowance for each of the Packing Groups. For an explanation and examples of Packing Groups, refer to Box 3 in **Section 1.2.6** of this manual.
2. Where manufactured product is stored, the quantities of manufactured product may be doubled.
3. The maximum quantity of Division 5.2 dangerous goods allowable as minor storage is 10kg or L.
4. For the purpose of determining minor storage quantities, Class 2 dangerous goods in retail packages, aerosols, and substances and articles of Class 9 are regarded as Packing Group III.

The following requirements must be implemented for satellites operating as minor stores.

Location

- Separated by more than 10m from any other dangerous goods store.
- Not more than one minor store per 500sqm of floor or ground area.

Precautions

- Any materials that are incompatible or might react dangerously, are segregated.
- Storage area shall be away from heating and ignition sources.
- Storage area shall be provided with adequate natural or mechanical ventilation.
- Packages shall be kept closed, and there should be no decanting on site.
- Appropriate spill control measures shall be provided where packages are opened and their contents transferred.
- Any spills or leaks shall be cleaned up immediately and disposed of appropriately. Contaminated, spilled or leaked material shall not be returned to original packaging, except for disposal where it is known that this will not increase the risk.
- The transfer of dangerous goods from the store to transport vehicle shall be carried out in a manner that minimises the possibility of spillage or fire.
- Dangerous goods shall not be stored or handled where they could hinder escape from a building in the event of fire.
- Persons who handle dangerous goods shall be informed and aware of the hazards involved.

- Packages shall be kept in such a manner as to avoid spillage.
- Stores shall be kept clear of combustible matter and refuse.
- Packages shall be kept on surfaces that are resistant to attack by their contents if spilt.
- Appropriate personal protective equipment shall be worn by personnel involved in product transfer or clean-up operations.
- A fire extinguisher of a suitable type shall be installed in each minor store. It shall be located so that it is immediately accessible in an emergency, along an exit route.
- A supply of water shall be available at a nearby location for personal hygiene.

Additional precautions for outdoor minor storage

- The ground around the storage area shall be kept clear of combustible vegetation and refuse by at least 3m.
- Any potential flow of spillage shall be prevented from reaching any protected place, watercourse or boundary by such means as the use of natural ground slope, or the provision of a diversion channel, kerb or bund.
- The store shall be separated from any protected place or property boundary by at least 3m.

Signage

Signage must be provided at the satellite to direct customers where to place their materials safely. CRC program branded signage is required.

6.5.8 Storage facility for a mobile CRC service

Whether or not a storage facility established for a mobile CRC service accepts material directly from customers or not, it must meet all the requirements of a regular CRC as outlined in this Handbook. This includes the design, construction and operation of the facility, emergency preparedness and response, induction and training of all staff involved in the provision of the all parts of the mobile CRC service, and record-keeping and reporting.

6.5.9 Insurance

The operator of a mobile CRC service must maintain adequate property, motor vehicle, comprehensive third party, public liability and workers compensation insurance cover for the mobile CRC vehicle(s), for the various locations of the vehicle whilst it will be accepting materials (if necessary), for satellites if part of the service and for the storage facility.

6.6 Operating a mobile CRC service

A mobile CRC service should be operated to make it easy for householders to manage their own problem waste. A well-managed operation protects the health and safety of customers and staff, protects the environment and the community, and facilitates safe disposal and reuse of problem materials. The following elements must be implemented when operating a mobile CRC service.

6.6.1 Acceptance from householders

Containers must be inspected prior to acceptance to ensure they are in a sound condition and not leaking. Intermediate containers should be used if necessary. A sufficient supply of appropriate intermediate containers should be kept on the mobile CRC for this purpose.

Where applicable, material should be moved from the house to the mobile CRC vehicle in small loads, or in a box trolley to minimise the risk of loss of containment and operator injury from manual handling. Care should be taken not to mix incompatible substances when moving them from the house to the mobile CRC vehicle.

A sign (e.g. A-frame size) should be placed on the footpath when material is being moved from the house to the mobile CRC vehicle to advise members of the public that material is being moved, and to minimise the risk of collision with a pedestrian.

In order to limit exposure to ignition sources, smoking must not be permitted in and around the mobile CRC vehicle at any time, or in the storage facility. Mobile phones and cellular tablet devices should not be used within the storage compartment of the mobile CRC vehicle. Flammable liquids such as oil based paint and flammable gas cylinders should be packed separately from lead acid batteries.

6.6.2 Loading for transport

If materials are packed into transport receptacles, these receptacles must be labelled on the outside and inside to indicate their contents. Operations staff must follow any directions provided in the mobile CRC vehicle indicating how materials should be packed.

In addition, adsorbent material should be added to transport receptacles where they are used to minimise vapour production from flammable liquids, and to minimise the potential for loss of containment and environmental damage.

6.6.3 Transfer to storage facility

In order to minimise the risk of operator injury and loss of containment, it is recommended that materials being unloaded from a mobile CRC vehicle with fixed transport receptacles be moved in an intermediate receptacle on a box (bunded) trolley. Materials should not be carried package by package more than a metre from mobile CRC vehicle to storage facility.

It is recommended that wherever possible, materials of a particular type be moved from the mobile CRC vehicle to the storage facility separately. If the mobile CRC vehicle is designed such that each type of material is transported in a separate moveable transport receptacle, this means only moving receptacles of that type of material at one time. If the mobile CRC vehicle is designed such that materials are packed into fixed receptacles, then only materials of one type should be moved at one time.

6.6.4 Collection of materials from storage facility

The EPA and/or other funding bodies (e.g. product stewardship schemes) will establish and maintain contracts for the collection and disposal (or recycling) of paint, used oil (other than motor oil), gas cylinders, household batteries and fluorescent lights, as well as incidental by-catch. The mobile CRC operator will be responsible for arranging the collection and recycling (not disposal) of lead acid batteries and used motor oil.

The mobile CRC operator must ensure that materials are removed from the storage facility with sufficient frequency to prevent the accumulation beyond the capacity of the facility.

The mobile CRC operator must ensure that materials are loaded and consigned in accordance with basic requirements for the transport of waste and dangerous goods. Refer to the procedure in **Section 3.5.3** of this Handbook for the procedure for loading and consignment of materials from CRCs. Monitoring, record-keeping and reporting of material quantities in the storage facility, and reporting of collections is the same as for a regular CRC as outlined in **Part 5** of this Handbook.

6.6.5 Collecting orphan waste

The collection of orphan waste requires pre-planning and care when undertaking the task. However, operators of mobile CRC services are often the best equipped to do so. The following specific requirements must be met when collecting orphan waste.

Providing appropriate segregation devices

As the type of material is generally not known beforehand, and there could be a number of different types of both target problem wastes and by-catch materials, a quantity of approved segregation devices (e.g. buckets, kegs or drums) should be carried on the mobile CRC vehicle.

Handling unknowns

Containers of unknown materials are not to be opened for the purpose of identification. A photograph of the container should be taken prior to packing. The container should then be placed in a resealable container suitable as a segregation device (e.g. a bucket or drum) appropriate to the material and labelled as unknown (e.g. 'Unknown – to be identified' written on to an adhesive label affixed to the container).

The photograph must then be emailed to the collection contractor with a request for advice as to how the material should be stored. Once a response is received, the identification can be written on the label, and the resealable container can be placed in the appropriate receptacle or Dangerous Goods Safety Cabinet. Where the material cannot be identified through the provision of specialist advice, it should be placed in the Toxic Dangerous Goods Safety Cabinet.

Handling of containers that are leaking or without lids

Similarly, if there are leaking containers or containers without lids, these must be placed in a resealable container appropriate to the material type, suitable as a segregation device, with a suitable amount of adsorbent material. The outer container must then be labelled according to the material type and placed in the appropriate receptacle or Dangerous Goods Safety Cabinet.

Appendix 6.1 – Sample mobile CRC risk assessment

Source of risk	Hazards	Risk	Possible Controls
Activities			
Acceptance of problem waste from householder	Manual handling of large containers of problem wastes resulting in operator injury.	3 / 2 Medium	Provide clear instructions to householder prior to acceptance as to how materials should be presented. Use small loads or a box trolley to move the waste. Safe work procedures. Operator training and behaviour.
	Container failure during transfer from house to mobile CRC, resulting in loss of containment and impact on public health or environment.		Use intermediate container such as a bag, bin or box trolley. Take care not to mix incompatible substances.
	Collision with pedestrian at house acceptance point, resulting in operator or pedestrian injury, or loss of containment, and impact on public health or environment.		Set up advisory signs, safe work procedures, and operator awareness.
Packing and storage of problem waste in mobile CRC	Slips, trips and falls when entering the mobile CRC, resulting in operator injury, or loss of containment.	3 / 2 Medium	Design mobile CRC so that storage receptacles are easily accessible for packing.
	Manual handling of containers whilst loading them into storage receptacles, resulting in operator injury.	3 / 2 Medium	Design CRC so that storage receptacles can be packed to minimise manual handling difficulty.
	Mixing of incompatible substances, resulting in reaction causing injury to operator or impact on public health or environment.	2 / 4 Medium	Use approved segregation devices as storage receptacles. Clear signage indicating where materials are to be placed and if appropriate, how they are to be packed. Proper identification of materials, and labelling of storage receptacles. Incident and emergency preparedness, and response procedures.
	Container failure, resulting in loss of containment and impact on public health or environment.	3 / 2 Medium	Inspect container prior to acceptance and use intermediate containers if necessary.
	Shelf or rack failure.	3 / 3 Medium	Design mobile CRC so that shelving and storage receptacles are adequate for the load they will bear, and they will minimise overloading when used. Safe work procedures and operator training to minimise overloading.

Source of risk	Hazards	Risk	Possible Controls
Transport of problem waste to next location in the mobile CRC	Movement of storage receptacles during transport causing damage to vehicle, receptacle failure and loss of containment.	3 / 3 Medium	Design mobile CRC so that storage receptacles are fixed or can be easily secured.
	Vehicle collision, resulting in loss of containment and impact on public health or environment.	1 / 4 Medium	Driver training and behaviour. Dangerous goods transport licensing. Incident and emergency preparedness, and response procedures.
Intermediate or overnight parking of vehicle	Vehicle is stolen, or storage compartment is accessed and material taken, resulting in loss of containment and impact on public health or environment.	1 / 4 Medium	Ensure mobile CRC can be secured to prevent access to the materials.
Unloading of problem waste materials from mobile CRC and consolidation into storage receptacles suitable for collection by the collection contractor.	Manual handling when moving containers from mobile CRC to storage area, resulting in operator injury.	3 / 3 Medium	Design mobile CRC so that storage receptacles can be unloaded in their entirety by forklift, or can be unpacked to minimise manual handling difficulty.
	Container failure, resulting in loss of containment and impact on public health or environment.	3 / 2 Medium	Design mobile CRC so that storage receptacles can be unloaded in their entirety, or use intermediate containers such as a box trolley.
	Storage receptacle is dropped during forklift unloading.	3 / 2 Medium	Provide forklift of adequate design and capacity appropriate to storage receptacles being used. Forklift operator trained and licensed.
	Forklift collision with operator or other vehicle on site where storage area is located.	1 / 4 High	Design layout of storage area and truck loading area to (as far as possible) limit intersection of forklift, vehicle and operator movements. Implement procedures to provide an exclusion zone around truck loading area.

Source of risk	Hazards	Risk	Possible Controls
Storage of materials	Storage area is accessed and material taken, resulting in loss of containment and impact on public health or environment.	1 / 4 Medium	Ensure storage area can be secured to prevent access to the materials.
Collection of materials	Vehicle collision, resulting in fire, loss of containment and impact on public health or environment.	1 / 4 Medium	Design storage area so that it is separate from other operations, or implement procedures (such as ceasing other operations during collection), to minimise intersection of vehicles during collection.
Materials			
Compressed gas – flammable	Failure of compressed gas cylinder.	3 / 2 Medium	Design mobile CRC so that gas cylinders are not stacked.
	Gas cylinder is dropped.	3 / 2 Medium	Safe work procedures, operator training and behaviour.
	Ignition of gas.	2 / 4 High	Design mobile CRC so that it is ventilated to prevent build-up of flammable gases.
Flammable – liquid	Container failure.	3 / 2 Medium	Design mobile CRC so that flammable materials are stored in a receptacle that is bunded and is an appropriate segregation device. Use appropriate PPE when handling materials. Incident and emergency preparedness, and response procedures.
	Ignition of atmosphere.	2 / 4 High	Add adsorbent material to segregation device / storage receptacle to minimise vapour production. Design mobile CRC so that it is ventilated to prevent build-up of flammable gases. Incident and emergency preparedness, and response procedures. Limit exposure to ignition sources: no smoking; separate flammable liquids from lead acid batteries; do not use mobile phone within the storage compartment of the mobile CRC.

Source of risk	Hazards	Risk	Possible Controls
Corrosives	Container failure.	3 / 3 High	Design mobile CRC so that lead acid batteries (primary corrosive material) are not stacked, and can be secured when packed in an upright position. Use appropriate PPE when handling materials. Incident and emergency preparedness, and response procedures.
	Mixing of incompatible substances.	2 / 4 High	Move corrosive materials to mobile CRC separately, or use intermediate container that provides appropriate segregation. Use approved segregation devices as storage receptacles. Proper identification of materials, and labelling of storage receptacles.
Oxidisers	Container failure.	3 / 2 Medium	Do not accept oxidising materials. Design mobile CRC so that oxidisers are not stacked, and can be segregated appropriately. Incident and emergency preparedness, and response procedures.
	Mixing of incompatible substances.	2 / 4 High	Move oxidisers to mobile CRC on their own, or use intermediate container that provides appropriate segregation. Clear signage indicating where materials are to be placed and, if appropriate, how they are to be packed. Proper identification and labelling of materials.
Toxics (fluoro tubes)	Lamp breakage, release of mercury to the atmosphere, operator injury from broken glass.	2 / 2 Low	Move lamps to the mobile CRC in an separate intermediate container. Consider supply of suitable container or bag to householder prior to collection. Pack lamps in an appropriate storage receptacle that minimises lamp breakage during transport.

Appendix 6.2 – Sample transport document

Transporter:	**Receiver:**
Mobile CRC Operator	Central CRC name
Street Address	Street Address
Suburb State Postcode	Suburb NSW Postcode
Contact Number (02) xxxx xxxx	Contact Number (02) xxxx xxxx
Vehicle Registration:	Date waste delivered:
Waste Transport Licence Number:	Date this record was made:

UN Number	Proper Shipping Name	Class / Division	Packing Group	Container Type	Number of Containers	Aggregate Quantity
1263	Paint-related material (solvent based paint)	3	III			
1263	Paint-related material (solvent based paint)	3	II			
2794	Batteries, wet filled with acid (lead acid batteries)	8	–	Battery		
1075	Petroleum gas, liquefied (gas cylinders)	2.1	–	Bottle (9kg) Bottle (3kg)		
1044	Fire extinguishers	2.2	–	Extinguisher (4 kg)		
	Fluorescent tubes and lamps	Non DG		Tube Lamp box		
	Water-based paint	Non DG				
	Other materials					
					TOTAL	

Appendix 6.3 – Checklist for mobile CRC vehicles

This checklist is to be used for vehicles involved in providing a mobile CRC service that are designed to carry placard loads with individual receptacles with a capacity of less than 500kg or L.

Aspect	Element
1 Design of the service	
1.1 Type of mobile service	• What type of mobile CRC service is being provided? • What type of vehicle is being used to transport problem wastes? • What type of materials is the service designed to collect? • Has a risk assessment of the mobile CRC service been undertaken and documented?
1.2 Preparing materials for acceptance	• What information are householders given about what materials are accepted and how they are to be presented? • What supplies, if any (e.g. bags), are householders provided with prior to collection?
2 Dangerous goods transport requirements	
2.1 Transport documents	• Are procedures in place to ensure transport documents, as required for the transport of dangerous goods, are carried on the vehicle? • Are the transport documents carried in the vehicle's cabin in an emergency information holder?
2.2 Emergency information	• Has emergency information required for the transport of dangerous goods been prepared and is this information carried appropriately on the vehicle? • Is the emergency information carried in an appropriately marked and located emergency information holder?
2.3 Placards and signage	• Does the vehicle have the appropriate placards? • Does the vehicle have CRC program branded signage? • Are signs with pictorial and text descriptors provided on the mobile CRC and on receptacles to allow easy sorting and packing? • Do signs include how materials are to be packed in receptacles?
2.4 Safety and spill response equipment	• Does the vehicle have the following safety equipment: – three double-sided reflector signals that comply with AS 3790 that are clean and in good condition – one 30B dry powder fire extinguisher located in or directly behind the cabin, near the driver's door, or at the front of any trailer – first aid kit – spill response kit appropriate to the materials being carried

Aspect	Element
2.5 Personal protective equipment (PPE)	• Does the vehicle carry the following PPE: – gas tight goggles or full face shield – eye-wash kit – chemical resistant gloves or gauntlets – thermal insulated gloves or gauntlets – chemical resistant suit or coveralls – chemical resistant boots – electric torch complying with AS/NZS 60079.11 or other recognised code.
2.6 Other safety equipment	• What other safety equipment is carried on the vehicle, and has this been informed by a documented risk assessment?
2.7 Maintenance of safety equipment	• Are procedures in place to check and replenish the first aid kit, PPE and spill response equipment?
3 Transport receptacles and material stowage	
3.1 General	• Are materials transported in receptacles appropriate to their type (e.g. bunded receptacles for liquids, cages for gases)? • Is the capacity of individual receptacles less than 500kg or L? • Are receptacles fixed or easily secured to prevent movement during transport? • Are receptacles and shelving in the vehicle adequate for the load? • Are shelves used in a way that minimises over-loading? • Are receptacles easily accessible for packing to minimise manual handling difficulty? • Does the access to the vehicle and the arrangement of receptacles minimise manual handling difficulty, and the potential for slips trips and falls? • Can receptacles be removed in their entirety or be unpacked without manual handling difficulty? • Are intermediate storage containers used when packing and unpacking the receptacles in the vehicle? What type?
3.2 Flammable liquids	• Are flammable liquids kept separate from ignition sources? • Is the material storage area of the vehicle adequately ventilated? • Are flammable liquids stored in a bunded receptacle?
3.3 Gas cylinders	• Are gas cylinders stored in a ventilated area, not stacked, away from sources of heat and other ignition sources? • Are procedures in place to ensure the main valve is closed and any regulator is removed prior to loading a gas cylinder? • Has due consideration been given to transporting gas cylinders separately?

Aspect	Element
3.4 Aerosols	• Where aerosols are carried, are they transported in a cage receptacle that is adequately ventilated and is able to contain exploding cans? • Where aerosols are carried, is the receptacle transported in a part of the vehicle that is adequately ventilated and separated from ignition sources?
3.5 Lead acid batteries	• Are lead acid batteries packed in an upright position in a bunded area of the vehicle, secured and not stacked?
3.6 Household batteries	• Are arrangements in place to ensure lithium batteries are packed to prevent short circuits and the dangerous evolution of heat? • Are lithium batteries packed with other household battery types? • Are household battery receptacles containing lithium batteries labelled appropriately?
3.7 By-catch	• Are appropriate receptacles, that are approved segregation devices, available for the transport of by-catch materials? • Are there separate receptacles for flammable liquids, toxics, oxidising agents, acids and alkalis? • Are these receptacles secured appropriately for transport? • Are these receptacles appropriately labelled?
4 Procedures and training	
4.1 Operating procedures	• Are safe operating procedures, based on the risk assessment, in place for the mobile CRC service?
4.2 Training	• Have all staff involved in the operation of the mobile CRC service been trained in the use of the safe operating procedures?
5 Waste tracking	
5.1 Waste transporter licence	• Has a waste transporter licence been obtained?
5.2 Record keeping	• Are arrangements in place to record the locations from which the waste was collected, the waste type and quantity, and date and time of collection?
6 Security and insurance	
6.1 Security	• Does the vehicle incorporate security features to prevent theft of the the vehicle, access to the storage access to the storage compartment and theft of material?
6.2 Insurance	• Has appropriate insurance cover been obtained for the mobile CRC service?

Appendix 6.4 – Checklist for vehicles transporting from a satellite

This checklist is to be used for vehicles involved in transporting small quantities of problem wastes from satellites to a central storage facility, where these vehicles are designed to carry less than placard loads.

Aspect	Element
1 Design of the service	
1.1 Type of mobile service	• What type of vehicle is being used to transport problem wastes? • What type of materials is the service designed to collect? • Has a risk assessment of the mobile CRC service been undertaken and documented?
1.2 Preparing materials for acceptance	• Are procedures in place to only transport less than 1,000kg or L of dangerous goods, where no flammable gases are transported? • Are procedures in place to ensure that where flammable gases (e.g. gas cylinders or aerosols) are transported, the total quantity of dangerous goods is limited to 250kg or L, and the quantity of flammable gases (gas cylinders plus aerosols, measured by capacity rather than contents) does not exceed 100kg or L? • Do all individual transport containers have a capacity of less than 500kg or L?
2 Dangerous goods transport requirements	
2.1 Transport documents	• Are procedures in place to ensure transport documents, as required for the transport of dangerous goods, are carried on the vehicle? • Are the transport documents carried in the vehicle's cabin?
2.2 Emergency information	• Has emergency information required for the transport of dangerous goods been prepared and is this information carried appropriately on the vehicle?
2.3 Placards and signage	• Does the vehicle have CRC program branded signage? • Are signs with pictorial and text descriptors provided in the mobile CRC and on receptacles to allow easy sorting and packing? • Do signs include how materials are to be packed in receptacles?
2.4 Safety and spill response equipment	• Does the vehicle have the following safety equipment: – one 30B dry powder fire extinguisher located in or directly behind the cabin near the driver's door, or at the front of any trailer – first aid kit – spill response kit appropriate to the materials being carried

Aspect	Element
2.5 Personal protective equipment (PPE)	• Does the vehicle carry the following PPE: – safety glasses – eye-wash kit – chemical resistant gloves or gauntlets – thermal insulated gloves or gauntlets – chemical resistant suit or coveralls – chemical resistant boots – electric torch complying with AS/NZS 60079.11 or other recognised code.
2.6 Other safety equipment	• What other safety equipment is carried on the vehicle, and has this been informed by a documented risk assessment?
2.7 Maintenance of safety equipment	• Are procedures in place to check and replenish the first aid kit, PPE and spill response equipment?
3 Transport receptacles and material stowage	
3.1 General	• Are materials transported in receptacles appropriate to their type (e.g. bunded receptacles for liquids, cages for gases)? • Are receptacles fixed or easily secured to prevent movement during transport? • Are receptacles adequate for the load? • Are receptacles easily accessible for packing to minimise manual handling difficulty? • Does the access to the vehicle and the arrangement of receptacles minimise manual handling difficulty and the potential for slips, trips and falls? • Can receptacles be removed in their entirety or be unpacked without manual handling difficulty? • Are intermediate storage containers used when packing and unpacking the receptacles in the vehicle? What type?
3.2 Flammable liquids	• Are flammable liquids kept separate from ignition sources? • Is the material storage area of the vehicle adequately ventilated? • Are flammable liquids stored in a bunded receptacle?
3.3 Gas cylinders	• Are gas cylinders stored in a ventilated area, not stacked, away from sources of heat and other ignition sources? • Are procedures in place to ensure the main valve is closed and any regulator is removed prior to loading a gas cylinder? • Has due consideration been given to transporting gas cylinders separately?
3.4 Aerosols	• Where aerosols are carried, are they transported in a cage receptacle that is adequately ventilated and is able to contain exploding cans? • Where aerosols are carried, is the receptacle transported in a part of the vehicle that is adequately ventilated and separated from ignition sources?

Aspect	Element
3.5 Lead acid batteries	• Are lead acid batteries packed in an upright position in a bunded area of the vehicle, secured, and not stacked?
3.6 Household batteries	• Are arrangements in place to ensure lithium batteries are packed to prevent short circuits and the dangerous evolution of heat? • Are lithium batteries packed with other household battery types? • Are household battery receptacles containing lithium batteries labelled appropriately?
3.7 By-catch	• Are appropriate receptacles, that are approved segregation devices, available for the transport of by-catch materials? • Are there separate receptacles for flammable liquids, toxics, oxidising agents, acids and alkalis? • Are these receptacles secured appropriately for transport? • Are these receptacles appropriately labelled?
4 Procedures and training	
4.1 Operating procedures	• Are safe operating procedures, based on the risk assessment, in place for the transport of problem wastes using the vehicle?
4.2 Training	• Have all staff involved in using the vehicle to transport problem wastes been trained in the use of the safe operating procedures?
5 Waste tracking	
5.1 Waste transporter licence	• Has a waste transporter licence been obtained?
5.2 Record keeping	• Are arrangements in place to record the locations from which the waste was collected, the waste type and and quantity, and date and time of collection?
6 Security and insurance	
6.1 Security	• Does the vehicle incorporate security features to prevent theft of the vehicle, access to the storage compartment and theft of material?
6.2 Insurance	• Has appropriate insurance cover been obtained for the mobile CRC service?

Appendix 6.5 – Checklist for satellites

This checklist is to be used for satellite drop-off points that are operated as a minor store. Refer to **Section 6.5.7** for the definition of a minor store.

Aspect	Element
Location	• Is the storage area separated by more than 10 metres from any other dangerous goods store? • Is there not more than one minor store per 500 square metres of floor or ground area?
Precautions	• Are materials that are are incompatible, or that might react dangerously, segregated? • Is the storage area located away from heating and ignition sources? • Is the storage area provided with adequate natural or mechanical ventilation? • Are all packages kept closed and there is no decanting on site? • Are appropriate spill control measures in place where packages are opened and their contents transferred? • Are procedures in place to ensure spills or leaks shall be cleaned up immediately and disposed of appropriately? Contaminated, spilled or leaked material shall not be returned to original packaging, except for disposal where it is known that this will not increase the risk. • Are procedures in place to ensure that the transfer of dangerous goods from the store to the transport vehicle are carried out in a manner that minimises the possibility of spillage or fire? • Are personnel who handle dangerous goods informed and aware of the hazards involved? • Are packages stored in a way that avoids spillage? • Is the store kept clear of combustible matter and refuse? • Are packages kept on surfaces that are resistant to attack by their contents if spilt? • Is appropriate PPE provided and worn by personnel involved in movement or clean-up of materials? • Is a fire extinguisher of a suitable type installed in the store, located so that it is immediately accessible in an emergency, along an exit route? • Is a supply of water available at a nearby location for personal hygiene?
Additional precautions for outdoor minor storage	• Is the ground around the storage area clear of combustible vegetation and refuse by at least 3m? • Is any potential flow of spillage prevented from reaching any protected place, watercourse or boundary by such means as the use of natural ground slope, or the provision of a diversion channel, kerb or bund? • Is the store separated from any protected place or property boundary by at least 3m?

7.
Important references

NSW Government agencies and legislation

Australian Standards

EPA2016/0557
ISBN 978-1-76039-493-6

Important references

7.1 NSW Government agencies and legislation

7.1.1 NSW EPA

7.1.1.1 Contact details

Website: www.epa.nsw.gov.au

Phone: 131 555 (or (02) 9995 5555 from outside NSW)

Email: info@environment.nsw.gov.au

Post: EPA Head Office, PO Box A290, Sydney South NSW 1232

Fax: (02) 9995 5999

7.1.1.2 Local offices: www.epa.nsw.gov.au/contact/Locations.htm

7.1.1.3 Contact details: EPA Community Recycling Unit

Email: recycling.centres@epa.nsw.gov.au

Post: Community Recycling Unit, PO Box 668, Parramatta NSW 2124

7.1.1.4 Relevant legislation

Available from **www.legislation.nsw.gov.au**.

- Protection of the Environment Operations Act 1997
- Waste Avoidance and Resource Recovery Act 2001
- Protection of the Environment Operations (Waste) Regulation 2014
- Protection of the Environment Operations (General) Regulation 2009

7.1.1.5 Guide to licensing

The guide to licensing will help you determine whether you require an environment protection licence and it provides other licensing information about:

- how and where to apply for a licence
- how much a licence costs
- what you may need to do even if you don't need a licence

Available at **www.epa.nsw.gov.au/licensing/licenceguide.htm**.

7.1.1.6 Handbook for rural and regional transfer stations

The handbook for the design and operation of rural and regional transfer stations helps rural councils understand the challenges, opportunities and unique issues associated with rural transfer station operations. It showcases some of the innovative and practical solutions adopted by rural and regional councils and the experiences of numerous councils in responding to waste management needs.

Available at **www.epa.nsw.gov.au/warrlocal/rural-regional.htm**

7.1.2 SafeWork NSW

7.1.2.1 Managing risks of hazardous chemicals in the workplace code of practice

This code provides practical guidance on how to manage health and safety risks associated chemicals and is for persons conducting a business or undertaking that uses chemicals. The code applies to:

- substances, mixtures and articles used, handled, generated or stored at the workplace, which are defined as hazardous chemicals under the WHS Regulations
- the generation of hazardous chemicals from work processes, for example toxic fumes released during welding.

Available from **www.safework.nsw.gov.au/__data/assets/pdf_file/0018/52155/managing-risks-hazardous-chemicals-code-3837.pdf**.

7.1.2.2 Placarding for storage of hazardous chemicals

A fact sheet on placarding for storage of hazardous chemicals is available from **www.safework.nsw.gov.au/media/publications/health-and-safety/placarding-for-storage-of-hazardous-chemicals**

7.1.2.3 Contact details

Website: www.workcover.nsw.gov.au

Phone: 13 10 50

Email: contact@workcover.nsw.gov.au

Obtain publications online or call **1300 799 003**.

7.1.2.4 Relevant legislation

Available from **www.legislation.nsw.gov.au**.

- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2011

7.2 Australian standards

7.2.1 Guide to standards – Dangerous goods

This document provides information on standards and other industry specific information (including the Australian Dangerous Goods Code) that may be of interest to anyone working with different types of dangerous goods, including manufacturers, importers, suppliers, installers and users.

The publications outlined in this guide cover requirements (including storage and handling) for dangerous goods transported by road and rail in relation to the 7th edition of the Australian Dangerous Goods Code (ADG7).

7.2.1.1 HB76:2010, Dangerous Goods – Initial emergency response guide

This handbook provides information on dealing with accidents, spills, leaks, hazards or fires involving dangerous goods, and the protective clothing to be worn in emergency procedures.

Available from Standards Australia at **www.saiglobal.com/store**.

7.2.1.2 Australian Dangerous Goods Code

The Australian Code for the Transport of Dangerous Goods by Road and Rail, also often referred to as the Australian Dangerous Goods Code (ADGC), sets out the requirements for transporting dangerous goods by road or rail. The current version of the code is edition 7.4, amended 30 June 2016.

Available from **www.ntc.gov.au/heavy-vehicles/safety/australian-dangerous-goods-code/**.

7.2.1.3 Load restraint guide

The load restraint guide (published by the National Transport Commission) details the performance standard for securing loads on vehicles.

Available from **www.ntc.gov.au/heavy-vehicles/safety/load-restraint-guide/**.

7.2.2 Relevant standards

The following Australian Standards are of particular interest in establishing and operating Community Recycling Centres.

Available from Standards Australia at **www.saiglobal.com/store**.

General information

- AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers

Specific classes of dangerous goods

- AS/NZS 1596:2014 The storage and handling of LP Gas
- AS 1940-2004 The storage and handling of flammable and combustible liquids
- AS 3780-2008 The storage and handling of corrosive substances
- AS 4332-2004 The storage and handling of gases in cylinders
- AS/NZS 4452:1997 The storage and handling of toxic substances

Equipment and facilities

- AS 1216-2006 Class labels for dangerous goods
- AS 1319-1994 Safety signs for the occupational environment
- AS 1603 Automatic fire detection and alarm systems
- AS 1670 Fire detection, warning, control and intercom systems
- AS 2444-2001 Portable fire extinguishers and fire blankets: selection and location
- AS 4775-2007 Emergency eyewash and shower equipment

8.
Safety data sheets

Provides safety data sheets for the hazardous materials received at a Community Recycling Centre

EPA2016/0557
ISBN 978-1-76039-493-6

Community Recycling Centres

Safety data sheet for: ACIDS

1. Material and supplier identification

The most common acid dropped off by householders at Community Recycling Centres (CRCs) is **hydrochloric acid** (also known as muriatic acid).

Less often, **sulphuric acid**, **nitric acid** and / or **phosphoric acid** may be dropped off.

These acids have many properties in common, and this is a combined Safety Data Sheet for the common acids presented at CRCs. Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Orica Ltd (now Ixom Operations Pty Ltd) | 1 Nicholson Street, Melbourne VIC 3000 | Tel: **03 9665 7111** | Emergency Tel: **1800 033 111**
- Ajax Finechem | 17/21 Bay Road, Taren Point NSW 2229 | Emergency Tel: **1800 638 556**
- Chem-Supply Pty Ltd | 38-50 Bedford Street, Gillman SA 5013 | Tel: **08 8440 2000**

and many others.

2. Composition information

Common **acids** dropped off at Community Recycling Centres may contain the following chemicals:

	CHEMICAL ENTITY	CAS No
	Hydrochloric acid	7647-01-0
OR	Nitric acid	7697-37-2
OR	Sulphuric acid	7664-93-9
OR	Phosphoric acid	7664-38-2

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Acids typically have the following hazardous classifications:

Hazardous Classification	Hazardous chemicals
Australian Dangerous Goods (ADG) Classification	Class 8 Corrosive Substances 
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 6
UN No	Hydrochloric acid – 1789 Sulphuric acid >51% – 1830 Sulphuric acid <51% – 2796 Sulphuric acid – fuming (unlikely to be brought in) – 1831 Nitric acid – 1796 Phosphoric acid – 1805
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Danger
Hazard Classification	Corrosive to Metals – Category 1 Skin Corrosion – Category 1A or 1B Eye damage – Category 1 Specific Target Organ Toxicity – Category 3
Hazard Statements	H290 May be corrosive to metals H314 Causes severe skin burns and eye damage H335 May cause respiratory irritation

Prevention Precautionary Statements	P234	Keep only in the original container
	P260	Do not breathe mist / vapours / spray
	P264	Wash hands thoroughly after handling
	P280	Wear protective gloves / protective clothing / eye protection
Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
	P301+P330+P331	If swallowed, rinse mouth. DO NOT induce vomiting
	P310	Immediately call a poison centre or a doctor / physician
Storage Precautionary Statements	P405	Store locked up
	P403+P233	Store on a well-ventilated place. Keep container tightly closed
	P406	Store in a corrosive resistant container

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Remove victim from area of exposure – avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood – cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.
Ingestion	Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.
Skin contact	If spilt on large areas of skin or hair, immediately drench with running water and remove clothing. Continue to wash skin and hair with plenty of water until advised to stop by the Poisons Information Centre or a doctor.

Eye contact	Hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes. Continue to wash with large amounts of water until medical help is available.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Non combustible, but decomposes on heating, emitting toxic fumes.
Suitable extinguishing media	Non combustible, but if involved in a fire, use fine water spray, normal foam or a dry agent (carbon dioxide, dry chemical powder).
Hazards from combustion products	Decomposes on heating, emitting toxic fumes.
Precautions for fire fighters and special protective equipment	Decomposes on heating emitting toxic fumes. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire.
Hazchem Code:	**2R**

6. Accidental Release Measures

Wear protective equipment to prevent skin and eye contamination. Alert others in the spill area. Do not touch or walk through the spilled material and avoid breathing vapours. As quickly as possible, dike the spilled liquid to prevent spreading. Use spill pillows, pads or a non-combustible absorbent for this purpose. Do not use sawdust. Neutralise the acid with sodium bicarbonate, lime or soda ash in excess. Add the neutraliser slowly, working from the edges to the centre of the spill. Use caution, as reaction can cause splattering. Sweep up the powder and wash the area gently with water. Use vermiculite to absorb any remaining liquid.

Prevent run-off into waterways or drains. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above).
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for acids from several manufacturers that are available in the public domain, particularly those by Ixom Operations and Chem-Supply Pty Ltd, whose authorship of that material is acknowledged.

Section 6 on Accidental Release Measures has been adapted from material published by the University of Iowa. Sections 6 and 7 contain material supplied by the current collection contractor for Community Recycling Centres, Toxfree Australia Pty Ltd.

Community Recycling Centres

Safety data sheet for: ALKALIS

1. Material and supplier identification

The most common alkali (base) materials dropped off by householders at Community Recycling Centres (CRCs) include household cleaners such as **bleaches, ammonia solution** and **drain clearing agents** (which may contain **sodium and / or potassium hydroxide**). Alkaline materials dropped off at CRCs may be liquid or solid. They have many properties in common, and this is a combined Safety Data Sheet for the common alkalis presented at CRCs.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Orica Ltd (now Ixom Operations Pty Ltd) | 1 Nicholson Street, Melbourne VIC 3000 | Tel: **03 9665 7111** | Emergency Tel: **1800 033 111**
- S C Johnson and Son Pty Ltd | 160 Epping Road, Lane Cove NSW 2066 | Tel: **02 9428 9111**
- Kleenco Australia Pty Ltd | 25 Moxon Road, Punchbowl NSW 2196 | Tel: **02 9707 3333**
- Pental Products Pty Ltd | 390 St Kilda Road, Melbourne VIC 3000 | Tel: **03 9251 2311**

and many others.

2. Composition information

Common **alkalis** dropped off at Community Recycling Centres may contain the following chemicals:

	CHEMICAL ENTITY	CAS No
	Sodium hydroxide	1310-73-2
AND / OR	Potassium hydroxide	1310-58-3
OR	Ammonia, aqueous solution	1336-21-6

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Alkalis typically have the following hazardous classifications:

Hazardous Classification	Some of the packages of alkaline materials dropped off at Community Recycling Centres are not classified as Hazardous Substances or Dangerous Goods, some are classified as Hazardous Substances but not Dangerous Goods. Some, particularly **solid drain cleaners**, are classified as both. The precautionary approach is to consider all such materials as Hazardous Substances and Dangerous Goods.
Australian Dangerous Goods (ADG) Classification	Class 8 – Corrosive Substances 
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 6
UN No	Sodium hydroxide – solid – 1823 Sodium hydroxide – solution – 1824 Potassium hydroxide – solid – 1813 Potassium hydroxide – solution – 1814 Ammonia aqueous solution with not more than 35% ammonia – 2672
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Danger
Hazard Classification	Corrosive to Metals – Category 1 Skin Corrosion – Category 1A or 1C Eye damage – Category 1 Acute Aquatic Toxicity – Category 1

Hazard Statements	H290	May be corrosive to metals
	H314	Causes severe skin burns and eye damage
	H335	May cause respiratory irritation
	H400	Very toxic to aquatic life
Prevention Precautionary Statements	P234	Keep only in the original container
	P260	Do not breathe dust / fume / mist / vapours / spray
	P264	Wash hands thoroughly after handling
	P280	Wear protective gloves / protective clothing / eye protection, face protection
	P273	Avoid release to the environment
Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
	P301+P330+P331	If swallowed, rinse mouth. DO NOT induce vomiting
	P310	Immediately call a poison centre or a doctor / physician
	P363	Wash contaminated clothing before re-use
	P390	Absorb spillage to prevent material damage
Storage Precautionary Statements	P405	Store locked up
	P403+P233	Store on a well-ventilated place. Keep container tightly closed
	P406	Store in a corrosive resistant container

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Remove victim from area of exposure. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood – cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

Ingestion	Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.
Skin contact	If spilt on large areas of skin or hair, immediately drench with running water and remove clothing. Continue to wash skin and hair with plenty of water until advised to stop by the Poisons Information Centre or a doctor.
Eye contact	Immediately wash in and around the eye area with large amounts of water for at least 15 minutes. Eyelids to be held apart. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport promptly to hospital or medical centre.
Note to physician	Treat symptomatically. Can cause corneal burns.

5. Fire fighting measures

Specific hazards	Non combustible. However, containers of aqueous ammonia, if heated, may rupture and release ammonia vapour. Ammonia may decompose into flammable hydrogen gas, forming flammable mixtures with air.
Suitable extinguishing media	Non combustible, but if involved in a fire, use fine water spray, normal foam or a dry agent (carbon dioxide, dry chemical powder).
Hazards from combustion products	Aqueous ammonia may decompose, forming flammable mixtures with air.
Precautions for fire fighters and special protective equipment	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire.
Hazchem Code:	**2R**

6. Accidental Release Measures

Wear protective equipment to prevent skin and eye contamination. Alert others in the spill area. Do not touch or walk through the spilled material and avoid breathing vapours. Prevent run-off into waterways or drains. Use absorbent material (soil, sand or other inert material). Neutralise spill with dilute acid. Collect neutralised material into labelled containers for appropriate disposal. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above).
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for alkaline materials from several manufacturers that are available in the public domain, particularly those by Ixom Operations Pty Ltd, whose authorship of that material is acknowledged.

Section 6 on Accidental Release Measures has been adapted from material published by the University of Iowa.

Community Recycling Centres

Safety data sheet for: FLAMMABLE LIQUIDS (other than solvent based paint)

1. Material and supplier identification

The most common flammable liquids (other than solvent-based paint, for which a separate Safety Data Sheet exists) that are dropped off by householders at Community Recycling Centres (CRCs) include petrol, kerosene, methylated spirits, paint thinners (such as mineral turpentine) and hydrocarbon solvents (such as acetone). These materials have many properties in common, and this is a combined Safety Data Sheet for the common flammable liquids presented at CRCs.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Shell Company of Australia Ltd (Now Viva Energy Australia Pty Ltd) | 720 Bourke Street, Docklands VIC 3008 | Tel: **03 882 34444** | Emergency Tel: **1800 651 818**
- Mobil Oil Australia Pty Ltd | 12 Riverside Quay, Southbank VIC 3006 | Tel: **03 8633 8444** | Emergency Tel: **1800 023 005**
- Recochem Inc | 1809 Lytton Road, Lytton QLD 4178 | Tel: **07 3308 5200** | Emergency Tel: **1300 131 001**
- Orica Ltd (now Ixom Operations Pty Ltd) | 1 Nicholson Street, Melbourne VIC 3000 | Tel: **03 9665 7111** | Emergency Tel: **1800 033 111**
- CSR Distilleries Operations Pty Ltd | 265 Whitehall Street, Yarraville VIC 3013 | Tel: **1800 819 618**

and many others.

2. Composition information

Flammable liquids dropped off at Community Recycling Centres may contain the following ingredients:

	CHEMICAL ENTITY	CAS No
	Gasoline	86290-81-5
OR	Kerosene	8008-20-6
OR	Ethanol	64-17-5
OR	Acetone	67-64-1

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Flammable liquids dropped off by householders at CRCs typically have the following hazardous classifications:

Hazardous Classification	Hazardous chemicals
Australian Dangerous Goods (ADG) Classification	Class 3 Flammable Liquids 
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 5
UN No	Gasoline – 1203 Kerosene – 1223 Ethanol – 1170 Acetone – 1090
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Danger
Hazard Classification	Flammable liquid – Category 1 Skin Irritation – Category 2 Eye Irritation – Category 2A Germ Cell Mutagen – Category 1B Carcinogen – Category 1B Specific Target Organ Toxicant (central nervous system) – Category 3 Aspiration Toxicant – Category 1 Chronic Aquatic Toxicity – Category 2

Hazard Statements	H224	Extremely flammable liquid and vapour
	H304	May be fatal if swallowed and enters airways
	H315	Causes skin irritation
	H319	Causes serious eye irritation
	H336	May cause drowsiness or dizziness
	H340	May cause genetic defects
	H350	May cause cancer
	H361	Suspected of damaging the unborn child
	H411	Toxic to aquatic life with long lasting effects
Prevention Precautionary Statements	P210	Keep away from heat / sparks / open flames / hot surfaces – No smoking
	P233	Keep container tightly closed
	P243	Take precautionary measures against static discharge
	P261	Avoid breathing mist / vapours
	P264	Wash skin thoroughly after handling
	P273	Avoid release to the environment
	P280	Wear protective gloves / protective clothing / eye protection / face protection
Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P302+P352	If on skin – wash with plenty of soap and water
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
	P301+P310	If swallowed – Immediately call a Poisons Centre or doctor / physician
	P308+P313	If exposed or concerned – Get medical advice / attention
	P363	Wash contaminated clothing before re-use
	P312	Call a Poisons Centre or doctor / physician if you feel unwell
	P331	Do NOT induce vomiting

Response Precautionary Statements (continued)	P332+P313	If skin irritation occurs, get medical advice / attention
	P362+P364	Take off contaminated clothing and wash before re-use
	P370+P378	In case of fire, use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish
	P391	Collect spillage
Storage Precautionary Statements	P405	Store locked up
	P403+P235	Store on a well-ventilated place. Keep cool

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.
Ingestion	Seek immediate medical assistance. Do NOT induce vomiting.
Skin contact	Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.
Eye contact	Hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Centre or a doctor, or at least for 15 minutes. If irritation occurs, get medical assistance.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Extremely flammable. Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback.
Suitable extinguishing media	Water fog, foam, dry chemical or carbon dioxide (CO_2). DO NOT USE STRAIGHT STREAMS OF WATER.
Hazards from combustion products	May emit aldehydes, products of incomplete combustion, oxides of carbon, sulphur dioxide, smoke, fumes.
Precautions for fire fighters and special protective equipment	Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop a leak. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA).
Hazchem Code:	**3[Y]E**

6. Accidental Release Measures

Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Vapour-suppressing foam may be used to reduce vapour. Absorb or cover with dry earth, sand or other non-combustible material and transfer to labelled containers. Use clean non-sparking tools to collect absorbed material. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Avoid all personal contact. Wash skin thoroughly after handling. Do not eat, drink or smoke in the area. Prevent exposure to ignition sources. Electrostatic charges may be generated during transfer and cause fire. Do not use electronic devices (mobile telephones, pagers, calculators) when handling the material, unless the devices are certified as intrinsically safe.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for flammable liquids from several manufacturers that are available in the public domain, particularly those by Mobil Oil Australia Pty Ltd (petrol), Recochem Inc (kerosene and methylated spirits) and Ixom Operations Pty Ltd (acetone). Their authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: FLUORESCENT LAMPS (tubular and compact)

1. Material and supplier identification

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each item. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- GE Lighting Australia Ltd | 32 Phillip Street, Parramatta NSW 2150 | Tel: **1300 762 852**
- Philips Lighting | Locked Bag 30, North Ryde NSW 2113 | Tel: **1300 304404**

and many others.

2. Composition information

Tubular and compact-type fluorescent lamps typically contain very small quantities (20 milligrams per lamp or less) of the following materials:

CHEMICAL ENTITY	CAS No
Mercury	7439-97-6
"Phosphor" (e.g. calcium chloro-fluoro-phosphate, the mineral apatite)	–

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Intact tubular and compact-type fluorescent lamps are NOT classified as Hazardous Substances or Dangerous Goods under applicable Australian standards or regulations. However, when broken, they are classified as **Mercury Compounds N.O.S., Class 6 Division 6.1 Toxic Substances.**
Australian Dangerous Goods (ADG) Classification	Division 6.1 
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 7
UN No	2025
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	The information below is taken from the GHS Hazardous Chemical Information List for **inorganic compounds of mercury**. It must be emphasised that, since most fluorescent lamps delivered to and / or stored at Community Recycling Centres are intact (and even if broken, the amounts of mercury compounds present are very small), these statements must be considered as being **extremely conservative**. 
Signal word	Danger

Hazard Classification	Acute Toxicity – Category 1 Acute Toxicity – Category 2 Specific Target Organ Toxicity (repeated exposure) – Category 2 Hazardous to the Aquatic Environment (acute) – Category 1 Hazardous to the Aquatic Environment (chronic) – Category 1	
Hazard Statements	H310 H330 H373 H410	Fatal in contact with skin Fatal if inhaled May cause damage to organs through prolonged or repeated exposure Very toxic to aquatic life with long-lasting effects
Prevention Precautionary Statements	P262 P264 P280 P260 P284 P273	Do not get in eyes, on skin or on clothing Wash hands thoroughly after handling Wear protective gloves / protective clothing Do not breathe dust In case of inadequate ventilation, wear respiratory protection Avoid release to the environment
Response Precautionary Statements	P302+P352 P304+P340 P314 P391	If on skin, wash with plenty of water If inhaled, remove person to fresh air and keep comfortable for breathing Get medical advice if you feel unwell Collect spillage
Storage Precautionary Statements	P405 P403	Store locked up Store on a well-ventilated place

4. First aid measures

The measures below are for **broken or damaged** fluorescent lamps, not for intact ones.
If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Ingestion	This is considered unlikely.

Skin contact	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes. Apply normal first aid for glass cuts if such should occur through lamp breakage.
Eye contact	Get medical aid. Do NOT allow victim to rub eyes or keep eyes closed. Irrigate extensively with water (at least 30 minutes).
Note to physician	The concentration of mercury in whole blood is a reasonable measure of the body-burden of mercury and thus is used for monitoring purposes. Treat symptomatically. Persons with kidney disease, chronic respiratory disease, liver disease, or skin disease may be at increased risk from exposure to this substance.

5. Fire fighting measures

Specific hazards	Intact fluorescent tubes and compact lamps are non-combustible. If subjected to extreme heat, the glass, and plastic (if present), components of the lamp may crack or melt and may emit toxic fumes.
Suitable extinguishing media	Use extinguishing media appropriate for combustibles in the area.
Hazards from combustion products	If caught in a surrounding fire, lamps may crack and emit toxic fumes, including minor quantities of mercury compounds.
Precautions for fire fighters and special protective equipment	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to vapours.
Hazchem Code:	**2X**

6. Accidental Release Measures

Clean up spills immediately. Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable labelled container for appropriate disposal. Avoid runoff into storm sewers and ditches which lead to waterways.

7. Handling and storage

Handling	Wear protective equipment to prevent skin and eye contamination. Wash hands thoroughly after handling. If any lamps are broken, remove contaminated clothing and wash it before reuse. Minimize dust generation and accumulation. Do not get on skin or in eyes. Do not ingest or inhale.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material published by GE Consumer and Industrial Lighting (USA) and Philips Lighting Co (USA) available in the public domain, and their authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: LEAD-ACID BATTERIES

1. Material and supplier identification

Other names: Batteries wet filled with acid, Car batteries, Automotive batteries

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each item. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Century Yuasa Batteries | 49–65 Cobalt Street, Carole Park QLD 4300 | Tel: **07 3361 6161** | Emergency | Tel: **07 3361 6707**
- Marshall Power Australia Pty Ltd | 1–5 Winterton Road, Clayton VIC 3168 | Tel: **1300 695 717** | Emergency Tel: **1800 039 008**

and many others.

2. Composition information

Lead-acid batteries typically contain the following materials:

CHEMICAL ENTITY	CAS No
Lead	7439-92-1
Lead oxide	1317-36-8
Sulphuric acid	7664-93-9
Non-hazardous components	–

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Lead-acid batteries are classified as a Hazardous Chemical in the NSW WHS Regulation 2011 by virtue of being listed in Part 7.1 Clause 328 as "Any dangerous goods other than those listed above".	
Australian Dangerous Goods (ADG) Classification	Class 8 Corrosive Substances	
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Lead-acid batteries *per se* are exempted in SUSMP, but sulphuric acid is a Schedule 6 poison and "lead compounds" are also Schedule 6.	
UN No	2794	
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	Lead-acid batteries *per se* are not listed in the GHS Hazardous Chemical Information List. The information below is for sulphuric acid. 	
Signal word	Danger	
Hazard Classification	Skin Corrosion – Category 1A	
Hazard Statements	H314	Causes severe skin burns and eye damage
Prevention Precautionary Statements	P260 P264 P280	Do not breathe mist / vapours / spray Wash hands thoroughly after handling Wear protective gloves / protective clothing / eye protection

Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing,
	P301+P330+P331	If swallowed, rinse mouth. DO NOT induce vomiting
	P310	Immediately call a poison centre or a doctor / physician
	P363	Wash contaminated clothing before reuse
Storage Precautionary Statements	P405	Store locked up

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	If fumes of combustion products are inhaled, lay the patient down, keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing. Transport to hospital, or doctor without delay.
Ingestion	Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Give water to rinse out mouth, then provide liquid slowly and as much as the patient can comfortably drink. Transport to hospital or doctor without delay.
Skin contact	Immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.

Eye contact	Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Note to physician	Treat symptomatically for acute or short term exposure to strong acids.

5. Fire fighting measures

Specific hazards	Lead-acid batteries are non-combustible and are not considered to be a significant fire risk. However, heating may cause expansion or decomposition leading to violent rupture of containers. Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
Suitable extinguishing media	Water spray or fog, Foam, Dry chemical powder, Carbon dioxide.
Hazards from combustion products	Heating may cause expansion or decomposition leading to violent rupture of containers. Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
Precautions for fire fighters and special protective equipment	Fire fighters to wear breathing apparatus and protective gloves. Prevent spillage or run-off from entering drains or water courses. DO NOT approach batteries suspected to be hot. Cool fire-exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
Hazchem Code:	**2R**

6. Accidental Release Measures

Wear protective equipment to prevent skin and eye contamination. Alert others in the spill area. Do not touch or walk through the spilled material and avoid breathing vapours. Shut off ignition sources. As quickly as possible, dike the spilled liquid to prevent spreading. Use spill pillows, pads or a non-combustible absorbent for this purpose. Neutralise the acid with sodium bicarbonate in excess. Add the neutraliser slowly, working from the edges to the centre of the spill. Use caution, as reaction can cause splattering. Sweep up the powder and wash the area gently with water. Use vermiculite to absorb any remaining liquid.

Environmental precautions	Contain the spill to prevent entry into drains or waterways. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above). Lead acid batteries should always be handled and stacked in an upright position. Stacking should be no more than two-high, with a sheet of cardboard placed between the first and second layers. Avoid dropping. As some batteries may be “live”, there is potential for sparking if dropped or if conducting material is placed across the terminals.
Storage	Follow the storage conditions recommended in the EPA’s Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for lead acid batteries from several manufacturers that are available in the public domain, particularly those by Century Yuasa Batteries and Marshall Power Australia Pty Ltd, whose authorship of that material is acknowledged.

Section 6 on Accidental Release Measures has been adapted from material published by the University of Iowa. Sections 6 and 7 contain material supplied by the current collection contractor for Community Recycling Centres, Toxfree Australia Pty Ltd.

Community Recycling Centres

Safety data sheet for: DOMESTIC LPG CYLINDERS

1. Material and supplier identification

Other names: Propane cylinders, Propane / butane cylinders, Domestic gas bottles, BBQ gas cylinders.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each cylinder. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material. LPG cylinders delivered by householders to Community Recycling Centres are usually empty; however, as part of the precautionary approach, they are treated as still containing LPG.

Original suppliers may have included:

- Elgas Ltd | 10 Julius Avenue, North Ryde NSW 2113 | Tel: **02 8094 3200** | Emergency Tel: **1800 819 783**
- Origin Energy | 264–278 George Street, Sydney NSW 2000 | Tel: **02 8345 5000** | Emergency Tel: **1800 808 526**
- Supagas NSW | 5 Benson Road, Ingleburn NSW 2565 | Tel: **02 8788 4444** | Emergency Tel: **1300 651 106**

and many others.

2. Composition information

Domestic LPG cylinders may typically contain one or more of the following chemical compounds in varying proportions:

CHEMICAL ENTITY	CAS No
Propane	74-98-6
Propene	115-07-1
n-Butane	106-97-8
Iso-Butane	75-28-5
Ethane	74-84-0
Odorant: Ethyl Mercaptan	75-08-1

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Hazardous Chemical (NSW WHS Regulation 2011 Part 7.1 Clause 328)	
Australian Dangerous Goods (ADG) Classification	Class 2 Division 2.1 – Flammable Gases	
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Not classified	
UN No	1075	
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification		
Signal word	Danger	
Hazard Classification	Flammable Gases – Category 1 Gases Under Pressure – Liquefied Gas	
Hazard Statements	Extremely flammable gas Contains gas under pressure – may explode if heated	
Prevention Precautionary Statements	P210	Keep away from heat / sparks / open flames / hot surfaces. No smoking
Response Precautionary Statements	P377 P381	Leaking gas fire. Do not extinguish, unless leak can be stopped safely Eliminate all ignition sources if safe to do so

Storage Precautionary Statements	P410+P403	Protect from sunlight. Store in a well-ventilated place
Other hazards	In high concentrations may cause asphyxiation. Contact with liquid may cause cold burns / frostbite	

4. First aid measures

Inhalation	LPG is an asphyxiant. Remove victim to fresh air. Be aware of possible explosive atmospheres. Keep person warm and at rest. If not breathing, or breathing is irregular, provide artificial respiration or oxygen by a trained person.
Ingestion	Due to the volatile nature of the product, this is considered unlikely.
Skin contact	Cold burns: remove contaminated clothing and gently wash affected areas with warm (30°C) water for 15 minutes. Apply non-adhesive sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. Seek medical attention.
Eye contact	Cold burns: immediately flush with tepid water or with sterile saline solution. Seek medical advice.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Extremely flammable gas. May form flammable mixtures with air. Gas may travel considerable distance to a source of ignition. If ignition has occurred, this may weaken cylinder metal from the heat, resulting in an explosion.
Suitable extinguishing media	Evacuate the area, remove all ignition sources. Stop flow of gas if safe to do so, by closing the cylinder valve. DO NOT EXTINGUISH THE FLAME, as this may lead to re-ignition and explosion. If extinguishing the flame is absolutely necessary, use only a dry powder extinguisher. Keep cylinders cool by spraying with fine water spray from a safe distance. Do not move cylinders for at least 24 hours after the fire and avoid shocks to cylinders that have been in a fire.

Hazards from combustion products	On burning, may emit toxic fumes, including oxides of carbon and nitrogen, smoke, and products of incomplete combustion.
Precautions for fire fighters and special protective equipment	Do not approach cylinders suspected of being hot.
Hazchem Code:	**2YE**

6. Accidental Release Measures

Any leak or spill is a fire and / or explosion hazard. If a leak has not ignited, stop gas flow if safe to do so, remove sources of ignition and evacuate personnel. Liquid leaks generate heavier-than-air flammable vapour, which may travel a considerable distance (e.g. through drains) to find a source of ignition. Vapour may collect in confined spaces. Where appropriate, use water spray to disperse the gas or vapour.

7. Handling and storage

Handling	Avoid inhalation of vapour. Avoid contact with liquid and cold storage containers. When handling cylinders wear protective footwear and suitable gloves.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for LPG cylinders from several suppliers that are available in the public domain, particularly those by Elgas Ltd, Origin Energy and Supagas NSW, whose authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: OXIDISING MATERIALS

1. Material and supplier identification

The most common oxidising material dropped off by householders at Community Recycling Centres (CRCs) is the swimming pool chemical **calcium hypochlorite**, which is a granular solid[1]. Other, less common, oxidising materials occasionally presented at CRCs are **potassium permanganate** ("Condy's crystals") and **hydrogen peroxide** (which is only available in solution of varying strengths). These materials have some properties in common, and this is a combined Safety Data Sheet for oxidising materials, which are occasionally presented at CRCs.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Kleenco Australia Pty Ltd | 25 Moxon Road, Punchbowl NSW 2196 | Tel: **02 9707 3333** (for calcium hypochlorite)
- Pool Pro Products | 10-12 Cairns Street, Loganholme QLD 4129 | Tel: **07 3209 7884** | Emergency Tel: **1800 033 111** (for calcium hypochlorite)
- Biotech Pharmaceuticals Pty Ltd | 83 Cherry Lane, Laverton North VIC 3026 | Tel: **03 9278 7555** (for potassium permanganate)
- Orica Ltd (now Ixom Operations Pty Ltd) | 1 Nicholson Street, Melbourne VIC 3000 | Tel: **03 9665 7111** | Emergency Tel: **1800 033 111** (for hydrogen peroxide)

and many others.

2. Composition information

Oxidising materials dropped off at Community Recycling Centres may contain the following chemicals:

	CHEMICAL ENTITY	CAS No
	Calcium hypochlorite	7778-54-3
OR	Potassium permanganate	7722-64-7
OR	Hydrogen peroxide	7722-84-1

[1] Another common swimming pool chemical, sodium hypochlorite, (which is only available in solution and is often colloquially, but incorrectly, referred to as "liquid chlorine") is not classified as an oxidising material, but as a corrosive material.

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Oxidising materials dropped off by householders at CRCs typically have the following hazardous characteristics:

Hazardous Classification	Hazardous chemicals
Australian Dangerous Goods (ADG) Classification	Class 5 Division 5.1 Oxidising Substances 
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 6
UN No	Calcium hypochlorite – 1748 Potassium permanganate – 1490 Hydrogen peroxide – 8 to 20% – 2984 Hydrogen peroxide – 20 to 60% – 2014 Hydrogen peroxide – above 60% – unlikely to be delivered
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Danger
Hazard Classification	Oxidising solid – Category 2 (for calcium hypochlorite and solid potassium permanganate) OR Oxidising liquid – Category 2 (for hydrogen peroxide) Skin corrosion – Category 1B Acute toxicity – Category 4 Aquatic Toxicity – Category 1

Hazard Statements	H272	May intensify fire: oxidiser
	H302	Harmful if swallowed
	H314	Causes severe skin burns and eye damage
	H335	May cause respiratory irritation
	H400	Very toxic to aquatic life
Prevention Precautionary Statements	P221	Take any precaution to avoid mixing with combustibles
	P210	Keep away from heat / sparks / open flames / hot surfaces. No smoking
	P220	Keep / store away from clothing / combustible materials
	P273	Avoid release to the environment
	P260	Do not breathe dust / fume / gas / mist / vapours / spray
	P280	Wear protective gloves / protective clothing / eye protection / face protection
Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
	P301+P310	If swallowed – Immediately call a Poisons Centre or doctor / physician
	P363	Wash contaminated clothing before re-use
	P312	Call a Poisons Centre or doctor / physician if you feel unwell
	P331	Do NOT induce vomiting
	P332+P313	If skin irritation occurs, get medical advice / attention
	P370+P378	In case of fire, use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish
	P391	Collect spillage
Storage Precautionary Statements	P405	Store locked up
	P403+P233	Store on a well-ventilated place Keep container tightly closed

4. First aid measures

Inhalation	Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting. Immediately rinse mouth with water. Give a glass of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
Skin contact	Remove contaminated clothing and wash affected areas with soap and water. Seek immediate medical attention. Launder clothing before reuse. Skin burns: cover with a clean, dry dressing until medical help is available.
Eye contact	Check for and remove any contact lenses. Immediately irrigate eyes with plenty of running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
Note to physician	Treat symptomatically. Can cause corneal burns. Delayed effects from exposure to chlorine can include shortness of breath, headache, oedema and pneumonia.

5. Fire fighting measures

Specific hazards	Non combustible, but will support combustion of other materials. Calcium hypochlorite is a powerful oxidising agent and decomposes violently upon heating, liberating oxygen and toxic chlorine gas.
Suitable extinguishing media	Water spray (large quantities), foam, dry chemical or carbon dioxide (CO_2).
Hazards from combustion products	Calcium hypochlorite may emit toxic chlorine gas.
Precautions for fire fighters and special protective equipment	Fire-fighters should wear, self-contained breathing apparatus (SCBA) and protective clothing.
Hazchem Code:	**1W**

6. Accidental Release Measures

Wear self-contained breathing apparatus and full protective clothing. Evacuate all non-essential personnel from affected area. Ensure adequate ventilation. Do not breathe dust or fumes. Prevent spillage from entering drains or water courses. For solid oxidisers (calcium hypochlorite and crystalline potassium permanganate) - sweep up the spill, avoiding generation of dust. Immediately spread as a thin layer in uncontaminated, dry, open area to reduce the possibility of forming local hot spots. Do not return spilled material to original container. Do not add small amounts of water to calcium hypochlorite. Where a spill has occurred in a confined space or an inadequately ventilated enclosure and the material is damp and evolving chlorine, the rate of chlorine evolution can be reduced by covering the thinly spread solid with soda ash (sodium carbonate).

For liquid oxidisers – dilute / flood area with water, taking care to prevent entry of contaminated water into stormwater drains or water courses. Contain the spill using non-flammable inorganic materials until decomposition is completed naturally. If entry into drains or watercourses has occurred, inform appropriate authorities.

7. Handling and storage

Handling	Avoid skin and eye contact and breathing in vapour, mists and aerosols. Do not return unused product to original container. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for oxidising materials from several suppliers that are available in the public domain, particularly those by POPS Group Pty Ltd (suppliers of Pool Pro brand of granular calcium hypochlorite) and Ixom Operations Pty Ltd (hydrogen peroxide). Their authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: SOLVENT-BASED PAINT (Oil-based paint)

1. Material and supplier identification

Containers of this paint can generally be identified by having the Flammable Liquids Dangerous Goods sign on them and / or by the text: “Wash brushes and equipment in mineral turpentine” (or similar).

Since materials delivered by householders to Community Recycling Centres are discarded (“waste”) products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Dulux Australia | 1956 Dandenong Road, Clayton VIC 3168 | Tel: **13 25 25** | Emergency Tel: **1800 033 111**
- Taubmans Paints (now PPG Architectural Coatings) | 9 Birmingham Avenue, Villawood NSW 2163 | Tel: **02 9794 1200** | Emergency Tel: **1800 883 254**
- Wattyl (now Valspar Australia Pty Ltd) | Level 4, 2 Burbank Place, Baulkham Hills NSW 2153 | Tel: **02 8867 3333** | Emergency Tel: **1800 039 008**

and many others.

2. Composition information

Solvent-based (“oil-based”) paint may typically contain one or more of the following solvents in total concentrations of up to 90% by mass, the balance consisting of non-hazardous materials:

CHEMICAL ENTITY	CAS No
White spirit	8052-41-3
Mineral turpentine	–
Kerosene	64742-81-0
Xylene, mixture of isomers	1330-20-7
Toluene	108-88-3
1,2,4-trimethyl benzene	95-63-6
Naphtha (petroleum) light aromatic	64742-95-6
Naphtha (petroleum) medium aliphatic	64742-88-7

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Hazardous (Safe Work Australia)
Australian Dangerous Goods (ADG) Classification	Class 3 – Flammable Liquids **Note 1:** Some solvent-based paints presented at a CRC may be Packaging Group II and some may be Packaging Group III  **Note 2:** Some solvent-based paints presented at a CRC may contain toxic metals, such as lead; these paints should be stored separately with Class 6 Division 6.1 Toxic Substances
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 5
UN No	1263
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Warning
Hazard Classification	Flammable Liquid – Category 3 Aspiration Hazard – Category 2 Sensitisation – Skin – Category 1A Specific Target Organ Toxicity (Single Exposure) – Category 1A
Hazard Statements	H226 Flammable liquid and vapour H305 May be harmful if swallowed and enters airways H317 May cause an allergic skin reaction H336 May cause drowsiness or dizziness

Prevention Precautionary Statements	P102	Keep out of reach of children
	P210	Keep away from all sources of ignition – No smoking
	P233	Keep container tightly closed
	P243	Take precautionary measures against static discharge
	P261	Avoid breathing in mist / vapours
	P272	Contaminated clothing should not be allowed
	P280	Wear protective clothing, gloves, eye / face protection and suitable respirator as required
Response Precautionary Statements	P101	If medical advice is needed, have product container or label at hand
	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P301+P310	If swallowed – Immediately call a Poisons Centre or doctor / physician
	P331	Do NOT induce vomiting
	P312	Call a Poisons centre or a doctor / physician if you feel unwell
	P363	Wash contaminated clothing before reuse
	P333+P313	If skin irritation or a rash occurs, get medical advice / attention
	P370+P378	In case of fire, use alcohol-resistant foam for extinction
Storage Precautionary Statements	P405	Store locked up
	P403+P235	Store on a well-ventilated place. Keep cool

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Remove victim to fresh air. Remove contaminated clothing and loosen remaining clothing. Keep person warm and at rest. If not breathing, or breathing is irregular, provide artificial respiration or oxygen by a trained person.
Ingestion	Seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting. Rinse mouth with water and give a glass of water to drink. If vomiting occurs, give further water.
Skin contact	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
Eye contact	Remove contact lenses, irrigate eyes copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Flammable liquid. May form flammable vapour mixtures with air. Vapour may travel considerable distance to a source of ignition. Heating can cause expansion or decomposition, leading to violent rupture of containers.
Suitable extinguishing media	Dry chemical, CO_2 or foam. Water fog may be used to keep fire-exposed containers cool. DO NOT USE WATER JET.
Hazards from combustion products	On burning, may emit toxic fumes, including oxides of carbon, nitrogen and metals, and products of incomplete combustion.
Precautions for fire fighters and special protective equipment	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to vapours or combustion products.
Hazchem Code:	**3Y or 3YE**

6. Accidental Release Measures

Small spills	Wear protective equipment to prevent skin and eye contamination. Soak up with absorbent. Allow absorbent to dry before collecting it for appropriate disposal.
Larger spills	Wear protective equipment to prevent skin and eye contamination. Wear appropriate respirator if ventilation is inadequate. Shut off all possible sources of ignition. Clear area of all unprotected personnel. Prevent further leakage or spillage if able to do so safely. Contain the spill to prevent its spread or entry into drains or waterways. Soak up using absorbent and allow absorbent to dry before collecting it into labelled containers for appropriate disposal.
Environmental precautions	Contain the spill to prevent entry into drains or waterways. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above).
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for solvent based paints from several manufacturers that are available in the public domain, particularly those by Dulux Australia and PPG Architectural Coatings, whose authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: TOXIC SUBSTANCES

1. Material and supplier identification

Toxic substances (Class 6 Division 6.1 in the Australian Code for the Transport of Goods by Road and Rail) are not included among the materials targeted by the CRC Program. However, small quantities of such materials may be occasionally dropped off at CRCs by householders, despite not being targeted (so-called "by-catch"), and all CRCs have provisions for storing them safely until they are collected for disposal. By far the most common such toxic substances are **garden chemicals** – a wide variety of insecticides, weed killers, **rat and mice poisons**, and other pesticides, current or outdated. These vary widely in their toxicity, and may be solid or in solution or suspension in water or a hydrocarbon. Very occasionally they may include strong poisons (such as cyanides or arsenic), or so-called "Schedule X" chemicals, which are persistent organochlorine compounds that are no longer permitted to be used in Australia. Very occasionally, other "historic" poisons, such as strychnine, may be brought in.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Given the wide variety of possible toxic substances that may be dropped off by householders at CRCs, the difficulty of producing a single Safety Data Sheet for them, and as part of the precautionary approach required by the NSW WHS Regulation, this Safety Data Sheet has been prepared for some of the most toxic materials that may be encountered at a CRC.

Original suppliers of toxic substances are too numerous to mention.

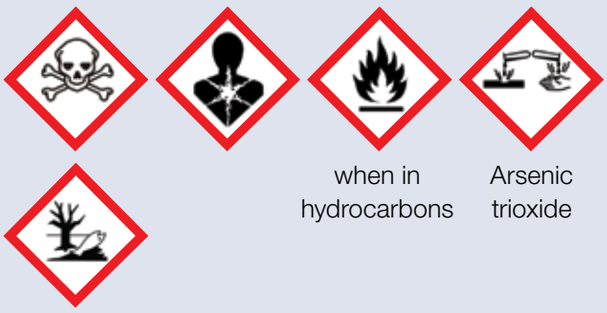
2. Composition information

Some examples of constituents that may be present in **toxic substances** dropped off at Community Recycling Centres are:

	CHEMICAL ENTITY	CAS No
	Sodium cyanide	143-33-9
OR	Potassium cyanide	151-50-8
OR	Arsenic trioxide	1327-53-3
OR	Dimethoate (an organophosphate), active ingredient in "Rogor" pesticide	60-51-5
OR	DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl) ethane)	50-29-3
OR	Strychnine	57-24-9

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Hazardous chemicals
Australian Dangerous Goods (ADG) Classification	Generally – **Class 6 Division 6.1 Toxic Substances** Some pesticides, which are in solution or suspension in a hydrocarbon liquid, are **Class 3 Flammable Liquids**, with Class 6 Division 6.1 being given as a Subsidiary Risk. 
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 7 (cyanides, arsenic, DDT, strychnine) Schedule 6 (dimethoate and some other organophosphate pesticides)
UN No	Sodium cyanide – 1689 Arsenic trioxide – 1562 Organophosphorus pesticides – liquid, flammable, toxic – 2784 Organophosphate pesticide – liquid, toxic, flammable – 3017 Organochlorine pesticide – solid, toxic – 2761 Strychnine – 1692
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	Some of the more toxic substances that may occasionally be dropped off at a CRC have the following GHS classification: 
Signal word	Danger

Hazard Classification	Acute toxicity	– Category 1 or 2 (cyanides, strychnine) – Category 2 or 3 (arsenic trioxide) – Category 2, 3 or 4 (organophosphates) – Category 3 (DDT)
	Carcinogenicity	– Category 1A (arsenic trioxide) – Category 2 (DDT)
	Germ cell mutagenicity	– Category 2 (arsenic trioxide)
	Skin corrosion	– Category 1 (arsenic trioxide)
	Specific target organ toxicity (repeated exposure)	– Category 1 (arsenic trioxide, organophosphates)
	Skin sensitizer	– Category 1 (organophosphates)
	Flammable liquid	– Category 3 (pesticides, when in hydrocarbons)
	Hazardous to the aquatic environment (acute)	– Category 1
	Hazardous to the aquatic environment (chronic)	– Category 1

Hazard Statements	H330	Fatal if inhaled (cyanides)
	H331	Toxic if inhaled (arsenic trioxide)
	H332	Harmful if inhaled (organophosphates)
	H310	Fatal in contact with skin (cyanides, strychnine)
	H311	Toxic in contact with skin (organophosphates)
	H300	Fatal if swallowed (cyanides, arsenic trioxide, some organophosphates, strychnine)
	H301	Toxic if swallowed (DDT)
	H350	May cause cancer (arsenic trioxide)
	H351	Suspected of causing cancer (DDT)
	H341	Suspected of causing genetic defects (arsenic trioxide)
	H314	Causes severe skin burns and eye damage (arsenic trioxide)
	H372	Causes damage to organs through prolonged or repeated exposure (arsenic trioxide, organophosphates, DDT)
	H317	May cause an allergic skin reaction (organophosphates)
	H226	Flammable liquid and vapour (pesticides in solution / suspension in hydrocarbons)
	H410	Very toxic to aquatic life with long lasting effects

Prevention Precautionary Statements	P260	Do not breathe dust / fume / gas / mist / vapours / spray
	P264	Wash hands thoroughly after handling
	P280	Wear protective gloves / protective clothing / eye protection / face protection
	P210 (for pesticides dissolved or suspended in hydrocarbons – generally, but not always, labelled with the Flammable Liquids sign):  	Keep away from heat / sparks / open flames / hot surfaces – No smoking
	P233	Keep container tightly closed
	P243	Take precautionary measures against static discharge
Response Precautionary Statements	P301+P310	If swallowed, immediately call a Poisons Centre or a doctor / physician
	P330	Rinse mouth
	P304+P310	If inhaled, immediately call a Poisons Centre or a doctor / physician
	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P302+P352	If on skin, wash with plenty of water
	P305+P351+P338	If in eyes, rinse copiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
	P308+P353 (DDT, arsenic trioxide)	If exposed or concerned, get medical advice / attention
	P363	Wash contaminated clothing before reuse
	P332+P313 (organophosphates)	If skin irritation occurs, get medical advice / attention
Storage Precautionary Statements	P405	Store locked up
	P403+P233	Store on a well-ventilated place. Keep container tightly closed

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

First aid measures for toxic substances other than cyanide:

Inhalation	Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen may be beneficial, if administered by a trained person, preferably on a doctor's advice. Do not allow the person to move about unnecessarily. In some cases, symptoms of pulmonary oedema may be delayed up to 48 hours after exposure. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting. Immediately rinse mouth with water. Never give anything by mouth to an unconscious person. Seek immediate medical attention. Make every effort to prevent vomit from entering the lungs by careful placement of the patient.
Skin contact	Remove contaminated clothing and wash affected areas with soap and water. Seek immediate medical attention. Launder clothing before reuse.
Eye contact	Check for and remove any contact lenses. Immediately irrigate eyes with plenty of running water for at least 20 minutes, keeping eyelids open. Take care not to rinse contaminated water into unaffected eye or on face. Seek immediate medical attention.

First aid measures for cyanide are provided on the following page.

FIRST AID MEASURES FOR CYANIDE POISONING

This is a special section on cyanide poisoning, since it is extremely serious and requires a somewhat different approach from other forms of poisoning.

T**o be effective, first aid must be prompt.** Sodium and potassium cyanide are poisonous by ingestion and by inhalation of their dust. Contact with skin and eyes may cause irritation of the skin and eyes and poisoning symptoms similar to those for ingestion.

Of prime importance is the protection of the rescuer. No attempt at rescue should be performed until an appropriate hazard assessment of the exposure site is made and appropriate personal protection equipment and personnel are in place.

First aid procedures, equipment, medication and training should be in place BEFORE there is any possibility of exposure. First aid personnel should be aware of the nearest hospitals, which are familiar with the treatment of cyanide exposure.

Equipment and medication in place should be:

- Safety shower and eyewash station immediately accessible
- Fresh, clean, cool drinking water
- Resuscitation bag and mask (or Oxy-Viva)
- Cyanide emergency kit containing amyl nitrite pearls; hydroxycobalamine and sodium thiosulphate
- “Space” or thermal blankets for treating patients for shock

First aid personnel should observe the following precautions:

- Wear protective gloves
- Wear protective goggles
- Wear suitable respiratory protection

IF SWALLOWED

- Remove patient from the source of contamination
- If the patient is not breathing, DO NOT use mouth-to-mouth or mouth-to-nose ventilation, instead use resuscitation bag and mask (Oxy-Viva)
- If pulse is absent, start external cardiac massage and follow standard Advanced Cardiovascular Support guidelines
- Give 100% oxygen by mask (Oxy-Viva) if available
- Remove all contaminated clothing and footwear into a sealable collection bag – launder contaminated clothing thoroughly and wash the affected areas with soap and copious amounts of water
- Arrange for urgent transfer of the patient, accompanied by an attendant with the Cyanide Emergency Kit, to medical professionals
- Persons designated as competent may open the Cyanide Emergency Kit and commence use of amyl nitrite pearls

IF IN EYES

- Immediately irrigate eyes with copious amounts of water, while holding eyelids open, for at least 15 minutes. Seek medical assistance immediately.

IF ON SKIN

- Wash affected area with copious amounts of water for at least 15 minutes. Remove contaminated clothing and launder before reuse. Seek medical assistance.

IF INHALED

- Proceed as in “IF SWALLOWED” above

5. Fire fighting measures

Specific hazards	Toxic substances that may be encountered at a CRC vary widely in their combustion characteristics and behaviour in a fire. Some (e.g. cyanides, arsenic trioxide) are not combustible, while others, particularly pesticides suspended or dissolved in hydrocarbons, are flammable liquids. The precautionary approach would be to treat all toxic substances as flammable.
Suitable extinguishing media	Water fog, foam or dry chemical. Carbon dioxide (CO_2) is not recommended if cyanides are involved in a fire. DO NOT USE STRAIGHT STREAMS OF WATER
Hazards from combustion products	Sodium cyanide, when heated, may emit highly toxic hydrogen cyanide gas. Other toxic substances may also emit toxic decomposition products when involved in a fire.
Precautions for fire fighters and special protective equipment	Fire-fighters should wear self-contained breathing apparatus (SCBA) and protective clothing.
Hazchem Codes:	**2X** Cyanides, solid organophosphorus pesticides, organochlorine pesticides, strychnine **2Z** Arsenic trioxide **3WE** Liquid flammable organophosphorus pesticides **3W** Liquid toxic organophosphorus pesticides

6. Accidental Release Measures

Observe the following general principles in containing and cleaning up a spill

- Evacuate all non-essential and unprotected personnel
- Wear appropriate personal protective equipment, including respiratory protection
- Eliminate all ignition sources (as some of the spilled materials may be flammable)
- Contain the spill by bunding it with sand, soil or vermiculite to prevent it from spreading and / or entering into drains and / or waterways. If entry into a waterway has occurred, ensure that appropriate authorities are notified
- Absorb the spill in an appropriate material that does not interact with the spilt material.
- Collect the spill and contaminated absorbent into appropriately labelled containers for subsequent disposal. Use non-sparking tools.
- Clean the surface(s) that have been affected by the spill.

ADDITIONAL STEPS FOR A CYANIDE SPILL

Because of their extremely high toxicity, cyanide spills require some additional steps. After the spill and the absorbent material have been scooped up, the remaining material should be covered with lime or soda ash, then ferrous sulphate added on top, and mixed in well. After standing for about 30 minutes, the remaining material may be scooped up and placed into labelled containers. The surface should finally be cleaned with a dilute solution of calcium or sodium hypochlorite, to remove the last traces of free cyanide.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where these materials are handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above).
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for a number of toxic substances from several suppliers that are available in the public domain, particularly those by CSBP Limited (sodium cyanide), ALDI GC Pty Ltd (arsenic trioxide) and FMC Australasia Pty Ltd, Nufarm Australia Ltd and Sipcam Pacific Australia Pty Ltd (organophosphate pesticides). Their authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: WATER-BASED PAINT

1. Material and supplier identification

Other names: Aqueous paint, acrylic paint, latex paint.

Containers of water-based paint can generally be identified by the text “Wash brushes and equipment in water”.

Since materials delivered by householders to Community Recycling Centres are discarded (“waste”) products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Dulux Australia | 1956 Dandenong Road, Clayton VIC 3168 | Tel: **13 25 25** | Emergency Tel: **1800 033 111**
- Taubmans Paints (now PPG Architectural Coatings) | 9 Birmingham Avenue, Villawood NSW 2163 | Tel: **02 9794 1200** | Emergency Tel: **1800 883 254**
- Wattyl (now Valspar Australia Pty Ltd) | Level 4, 2 Burbank Place, Baulkham Hills NSW 2153 | Tel: **02 8867 3333** | Emergency Tel: **1800 039 008**

and many others.

2. Composition information

CHEMICAL ENTITY	CAS No	Proportion
Ingredients determined to be non-hazardous	–	100%

3. Hazards identification

Emergency Overview
NON-HAZARDOUS SUBSTANCE | NON-DANGEROUS GOODS

Hazardous Classification	Based on available information, water-based paints are not classified as hazardous according to criteria of Safe Work Australia.
Australian Dangerous Goods (ADG) Classification	Non-Dangerous Goods (i.e. not classified)
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Not classified
UN No	Not classified
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	Not classified

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Remove victim to fresh air. Remove contaminated clothing and loosen remaining clothing. Keep person warm and at rest. If not breathing, or breathing is irregular, provide artificial respiration or oxygen by a trained person.
Ingestion	Seek medical advice and show the container or label. Keep person warm and at rest. Do NOT induce vomiting. Rinse mouth with water and give a glass of water to drink. If vomiting occurs, give further water.
Skin contact	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
Eye contact	Remove contact lenses, irrigate eyes copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek medical advice.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Non-combustible material. However, if the product is caught in a surrounding fire, residual materials may ignite following evaporation of aqueous components.
Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire. Use water fog to keep containers cool.
Hazards from combustion products	If residual materials are ignited after evaporation of the aqueous component, fumes may include smoke, oxides of carbon and metals and products of incomplete combustion.
Precautions for fire fighters and special protective equipment	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to vapours or decomposition products.
Hazchem Code:	**Not applicable**

6. Accidental Release Measures

Small spills	Wear protective equipment to prevent skin and eye contamination. Soak up with absorbent. Place contaminated absorbent in an appropriate waste disposal container and dispose of appropriately.
Larger spills	Wear protective equipment to prevent skin and eye contamination. Slippery when spilt. Move containers from spill area. Clear area of all unprotected personnel. Prevent further leakage or spillage if able to do so safely. Contain the spill to prevent its spread or entry into drains or waterways. Soak up using absorbent and place contaminated absorbent it into labelled containers for appropriate disposal.
Environmental precautions	Contain the spill to prevent entry into drains or waterways. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate personal protection equipment to prevent skin or eye contact or inhalation of vapours from any spilled material.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for water based paints from several manufacturers that are available in the public domain, particularly those by Dulux Australia and PPG Architectural Coatings, whose authorship of that material is acknowledged.