

Guidance for the Management of Household Hazardous Waste at Civic Amenity Sites



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Introduction

This guidance has been developed by the EPA in cooperation with the Health and Safety Authority (HSA) and civic amenity (CA) site operators to establish the environmental and operational standards required at CA sites for the acceptance and safe storage of the wide range of hazardous waste streams from households and small businesses.

The *National Hazardous Waste Management Plan 2014–2020* (NHWMP) estimates that 30,000 tonnes of hazardous waste from households, small businesses and farms go unreported and untreated in Ireland every year. The fate of this waste is unknown, but it is possibly mixed with general household waste, discharged to drains or shores, dumped, buried or burnt. The risk of environmental pollution and negative health impacts from this type of pollution is very high. For example, if discharged to water, a single drop of herbicide can breach the drinking water limit in a small stream for 30 km.¹ Furthermore, backyard burning or burning of waste in household fires or stoves is a confirmed method of exposing those nearby and the householders themselves, both indoors and outdoors, to health-threatening amounts of toxic fumes.² Burning domestic waste in backyards and in household stoves and fires accounted for 3% of all dioxin emissions in Ireland in 2014.³ Obviously, burning hazardous waste risks serious exposure to any of the hazards listed in Table 1.

Further development of the network of CA sites around Ireland to increase the range of household hazardous waste accepted and to broaden their customer base to greater numbers of householders and small business owners will lead to more environmentally sustainable management of hazardous waste and better protection of the environment.

1.1 Definition of Household Hazardous Waste

Waste is classified as being hazardous when it displays one or more of the hazardous properties listed in Annex III of Commission Regulation (EU) No. 1357/2014⁴ (see Table 1). Commission Regulation (EU) No. 1357/2014 replaced Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste, which had previously listed the properties of hazardous waste.

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- 1 *Protecting Drinking Water from Pesticides – Herbicide Use in Grassland*. EPA. http://www.epa.ie/pubs/advice/drinkingwater/sourceprotectionleaflets/01987_EPA_HerbicideUse_leaflet_Proof02.pdf
 - 2 *Dangerous Health Effects of Home Burning of Plastics and Waste*. Women in Europe for a Common Future, 2005. http://www.wecf.eu/cms/download/2004-2005/homeburning_plastics.pdf
 - 3 *Air Pollutant Emissions in Ireland 1990–2014. Reported to the Secretariat of the UNECE Convention on Long-range Transboundary Air Pollution*. EPA, Johnstown Castle, Ireland.
 - 4 Commission Regulation (EU) No. 1357/2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R1357&from=EN>

Table 1. Properties of hazardous waste

Hazardous property	Description
Explosive	Waste that is capable, by chemical reaction, of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings
Oxidising	Waste that may, generally by providing oxygen, cause or contribute to the combustion of other materials
Flammable	Waste that is easily set on fire
Irritant – skin irritation and eye damage	Waste that on application can cause skin irritation or damage to the eyes
Specific target organ toxicity (STOT)/aspiration toxicity	Waste that can cause specific target organ toxicity, either from a single or repeated exposure, or which can cause acute toxic effects following aspiration
Acute toxicity	Waste that can cause acute toxic effects following oral or dermal administration, or inhalation exposure
Carcinogenic	Waste that induces cancer or increases its incidence
Corrosive	Waste that on application can cause skin corrosion
Infectious	Waste containing viable micro-organisms or their toxins that are known or reliably believed to cause disease in humans or other living organisms
Toxic for reproduction	Waste that has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring
Mutagenic	Waste that may cause a mutation that is a permanent change in the amount or structure of the genetic material in a cell
Release of an acute toxic gas	Waste that releases acute toxic gases in contact with water or an acid
Sensitising	Waste that contains one or more substances known to cause sensitising effects to the skin or the respiratory organs
Eco-toxic	Waste that presents or may present immediate or delayed risks for one or more sectors of the environment
Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste.	

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Household hazardous waste is a subset of hazardous waste. It comprises small quantities of domestic hazardous products that a household or small business wishes to discard. Hazardous waste is indicated in the Waste Classification List of Waste⁵ (LoW) using a six-digit code followed by an asterisk (*). Non-hazardous waste does not have an asterisk.

⁵ Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous. EPA, 2015. https://www.epa.ie/pubs/reports/waste/stats/wasteclassification/EPA_Waste_Classification_2015_Web.pdf

The LoW⁶ system, which replaces the European Waste Catalogue (EWC) applies across the EU and allows for correct classification of all wastes to ensure that the collection, transport, storage, treatment and disposal of waste is carried out in a manner that provides protection for the environment and human health. Wastes are listed in chapters according to generic industry or process from which they are generated.

The range of hazardous wastes generated by households and small businesses that may be acceptable at CA sites, together with their LoW codes, is given in Section 1. Vegetable oils and waste electrical and electronic equipment (WEEE) are included in the guidance because, although they are not always hazardous, they may be considered problematic at CA sites.

Hazardous wastes that may be acceptable at CA sites include the following materials:

- aerosol cans
- asbestos [non-fibrous asbestos from small-scale construction and do-it-yourself (DIY) jobs]
- batteries (automotive)
- batteries (portable)
- fire extinguishers
- gas cylinders
- household and garden chemicals
- motoring products
- oils and oil filters
- paints and DIY products
- smoke alarms
- vegetable oil
- WEEE fluorescent tubes and compact fluorescent light (CFL) bulbs
- WEEE fridges/freezers
- WEEE large household appliances
- WEEE mixed (small) household appliances
- WEEE televisions and monitors.

Hazardous wastes NOT accepted at CA sites:

- healthcare risk waste
- explosives
- fibrous/inappropriately wrapped asbestos.

Asbestos is not currently accepted at any CA site in Ireland; however, best practice in dealing with asbestos-containing material is included in this guidance because the NHWMP recommends that a network of collection and transfer facilities be established to capture small-scale waste asbestos-containing material arising from DIY and small contracting jobs. This would prevent substantial quantities of asbestos waste from being managed illegally, either because of ignorance

⁶ Commission Decision of 18 December 2014, amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European parliament and of the Council (2014/955/EEC). http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2014.370.01.0044.01.ENG

of legal obligations or because of the high cost of employing specialist contractors for small jobs. Capturing more hazardous waste at CA sites will reduce the environmental impact of this waste stream.

Increasing the range and quantities of hazardous waste at CA sites means that there will be a greater potential for pollution and a greater need to protect against the risk of fire and of exposure of staff and visiting public to hazardous waste. This guidance will assist in assessing the increased risks and identifying the environmental, health and safety control measures necessary to protect the environment, staff and visiting public.

Sections 19 and 20 of the Safety, Health and Welfare at Work Act, 2005, require that a comprehensive risk assessment be carried out to address the hazards at the CA site in question and that a safety statement is prepared. The risk assessment exemplars in Attachment 1 to this guidance will assist in the preparation of these documents but will not replace them.

Scope of Guidance

This guidance concerns itself with the specific implications of increasing the range of household hazardous waste accepted at CA sites and does not address the full range of generic hazards at CA sites. This guidance will assist CA site managers to identify, assess and manage the environmental, health and safety risks associated with the acceptance, handling and storage of household hazardous waste types likely to be presented at a CA site.

This guidance is recommended to CA site designers and operators as good practice, but it is not compulsory. It is recognised that existing sites may or may not have the space or resources to implement all of the control measures recommended and that CA sites at the design stage may be best placed to benefit. However, it is recommended that the control measures be implemented to the greatest extent possible in all CA sites.

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Although the range of hazardous wastes presented at CA sites is large, the quantities presented by householders and small businesses are usually small. CA site operators should impose quantity limits to prevent large deliveries of hazardous waste by trade users and develop waste storage plans that limit the maximum quantity of waste on site at any time. The relatively small quantities received at CA sites and the limit of site activities reduces the potential risks of hazardous waste storage. The control measures described here are limited to reception, storage and shipment off site; they do not extend to treatment activities such as bulking up.

The conditions laid out in a site's authorisations will detail, among other things, the activities, quantities and types of waste that may be accepted and stored and other requirements that are necessary to prevent environmental pollution. CA site managers should use the information in this guidance in combination with the specific requirements mentioned in the CA site's licence,⁷ facility permit or certificate of registration⁸ to develop a CA site's waste acceptance policy.

Section 1: Guidelines for Specific Hazardous Wastes details the range of household hazardous waste types that are accepted at CA sites and provides illustrations and descriptions of each. Related hazards are detailed and control measures are recommended to reduce environmental, health and safety risks.

Section 2: Planning for Household Hazardous Waste at Civic Amenity Sites discusses the waste acceptance policy, site layout and staff training issues to be considered when introducing or extending the types of hazardous waste accepted on site. Table 3 provides a list of all hazardous waste types and the separation distances recommended to reduce the risk of potentially dangerous

⁷ Issued by the EPA under the Waste Management (Licensing) Regulations 2004 to 2011.

⁸ Issued under the Waste Management Facility Permit (Facility Permit and Registration) Regulations 2007 to 2013.

interactions. Table 4 provides guidance on the segregation required for higher risk chemicals. This section also highlights the need for clear communication to the public so that hazardous waste is identified, separately stored and brought to the CA site.

Section 3: Managing Safety at Hazardous Waste Civic Amenity Sites will assist CA site operators to comply with sections 19 and 20 of the Safety, Health and Welfare at Work Act, 2005, which require that a comprehensive risk assessment be carried out to address each activity at each CA site and that a safety statement is prepared. Where a site is considering increasing the range of hazardous wastes that it currently accepts, it is necessary to reconsider the site risk assessment to ensure that it encompasses the risks associated with the new waste type and that it also considers any risks associated with that waste in the context of the other wastes already being accepted on the site. This guidance and the risk assessment exemplars in Attachments 1–3 to this guidance will assist local authorities in creating site-specific risk assessments, an emergency response procedure, and a procedure for the reporting of accidents and incidents.

Section 4: Processing Household Hazardous Waste at a Civic Amenity Site describes the processing of hazardous waste through a CA site from reception and identification of waste, correct storage, procedures to deal with unacceptable wastes and preparation for shipment off site.

The following attachments are available at www.hazardouswaste.ie:

Attachment 1 – Risk Assessment Exemplars describes the process of risk assessment and provides exemplars of risk assessment for all the waste and known hazards at CA sites.

Attachment 2 – Emergency Response Procedure – Guidance Template. This will assist CA site staff to develop site-specific emergency response procedures for CA sites.

Attachment 3 – Procedure for the Reporting of Accidents and Incidents – Guidance. This outlines a procedure for dealing with the reporting of accidents and incidents at CA sites that can be used by CA site staff to prepare site-specific documents.

Guidelines for Specific Hazardous Wastes



Section 1: Guidelines for Specific Hazardous Wastes

Aerosol Cans

LoW Code and Description

16 05 04* gases in pressure containers (including halons) containing dangerous substances

16 05 05 gases in pressure containers other than those mentioned in 16 05 04



Description

In the context of household hazardous waste, the term aerosol describes the various types of products packaged in non-refillable, self-dispensing pressurised containers. These include spray products and foam products used by household consumers. In addition, farms generate a significant amount of waste aerosol sprays, which are used for marking cattle and sheep.

Associated Hazards

Post-consumer aerosols may contain significant residual amounts of their original content that may be hazardous, flammable (e.g. automotive products, insecticides) or toxic (e.g. chlorinated solvent sprays or some cleaning products). Aerosols also contain a propellant gas, which may be flammable, such as butane. Even when notionally “empty”, aerosol cans still contain an amount of flammable propellant gas under pressure. Very old aerosols may contain chlorofluorocarbons (CFCs) or fluorinated greenhouse gas (F-gas) propellants, which are damaging to the ozone layer and contribute to climate change, respectively. When stored together, the cumulative volume of gas in aerosols may be significant and their gases can cause fires and explosions if released through mistreatment.

Aerosols may have multiple hazards and a decision must be made as to which is the most important by talking to the waste holder, assessing the product label, the safety data sheet (SDSs) or checking with the site’s dangerous goods safety advisor (DGSA) if necessary.

Control Measures Required

Record Keeping

Civic amenity (CA) site staff must maintain the following records:

- the current inventory of aerosol drums or containers on site
- results of regular container inspections.

CA site management can determine the frequency of container inspections and collection required by monitoring the level of activity and the quantities of aerosols accepted.

Storage Requirements

- Aerosols should be stored in the same cage, drum or wire mesh crate (stillage container) with a closing top and metal clasp that will be used for transport to avoid double handling.
- Aerosols should be stored away from moving vehicles in a well-ventilated area that is protected from rain in order to prevent corrosion.
- Adequate general and local exhaust ventilation should be used to maintain exposure levels below, for example, occupational exposure limits.
- Do not store at temperatures over 50°C on account of the possibility of explosion.
- Aerosol containers should not be punctured, crushed or emptied.
- Warning signs prohibiting smoking and naked flames should be in place.
- Avoid direct sunlight, excessive heat, sparks, flames and other sources of ignition.

Separation Distance

Aerosols should be kept at least 6 metres from automotive batteries, flammable gas cylinders, paints and varnishes. See Table 3 for further separation distances.

Handling

Aerosol containers should not be punctured, crushed or emptied. Specialist equipment is required to empty and crush aerosols and such activities are outside the remit of CA sites. CA site staff should label drums to reflect the hazard class of the contents; drums should then be sealed and removed from public areas once they are full.

Personal Protective Equipment

- Personal protective equipment (PPE) such as high-visibility clothing, gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites. Safety goggles are recommended where eye contact is possible, as are chemical-resistant gloves to avoid skin contact. Respiratory protection is not required if ventilation is adequate to maintain exposure levels below occupational exposure limits.
- In addition, CA site management must make an assessment of the hazards related to aerosols on site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

Emergency Procedures

- Leaking aerosol cans should be placed in a separate open plastic container until the pressure has dissipated. Any liquid should be contained and controlled using an inert absorbent and placed in a container for disposal. Clean the spill area thoroughly. Damaged aerosols may not be packaged with other waste aerosols – refer to your DGSA for appropriate handling/packaging of damaged aerosols.
- The selection, number and locations of fire extinguishers should be considered from the results of a site-specific risk assessment and assessment of the aerosol safety data sheet.

Dangerous Good: Yes

ADR⁹ Hazard Class: 2 (Gases)

UN number: UN 1950

Requirements may include carriage under special provision 327. Larger consignments of waste aerosols **may be carried under this special provision** if they cannot be protected from inadvertent discharge, e.g. if the caps are no longer available. All other relevant provisions of ADR will apply.

Provisions of particular relevance are as follows:

- The waste aerosols shall be packed in accordance with packaging instruction P207 and special provision PP87, or LP02 with special provision L2.
- There is an option to use either United Nation (UN)-approved packaging [P207(a)] or rigid outer packaging [P207(b)]. Only prescribed rigid packaging may be used under option (b), with a maximum net mass of 125 kg, or 55 kg for fibreboard packaging.
- Measures must be taken to prevent the dangerous build-up of pressure and dangerous atmospheres, i.e. the packaging must be fitted with a vent.
- The packages shall have a means of retaining any free liquid that may escape during carriage, e.g. they shall contain absorbent material.
- Packages containing waste aerosols must bear the mark "UN 1950 AEROSOLS".
- The waste aerosols must be carried in ventilated or open vehicles or containers.
- Specialist advice is necessary.

⁹ ADR is the abbreviation of a French phrase meaning "international agreement concerning the carriage of dangerous goods by road" (see section 4.5).

Asbestos

LoW Code and Description

16 01 11* brake pads containing asbestos

17 06 05* construction materials containing asbestos



Description

Asbestos is a naturally occurring substance that originates from crystallisation of molten rock. It is classified into many different types; the six listed below are regulated, but the first three are the main types of asbestos that have any real significance or usage in Ireland.

- | | |
|--|------------------|
| 1. Crocidolite, often referred to as blue asbestos | 4. Anthophyllite |
| 2. Amosite, often referred to as brown asbestos | 5. Tremolite |
| 3. Chrysotile, often referred to as white asbestos | 6. Actinolite |

Chrysotile is the most widely used form of asbestos. Asbestos was used extensively in a wide range of products between 1940 and 1985. The majority of buildings, including domestic buildings, built during this time will contain some asbestos products. The list below is ranked from high-risk to lower risk asbestos-containing materials:

- insulation from around pipes and boilers, including sprayed coatings
- insulating board used for fire barriers in applications such as door panels, partitioning, ceiling panels, attic access insulation, and insulation to stoves, ovens and storage heaters
- rope insulation or compressed gaskets for pipework
- profiled cement roofing sheets and roof tiles
- cement pipes, flues, guttering and water tanks
- vinyl floor tiles and bitumen adhesive
- textured coatings and paints containing asbestos
- asbestos-backed linoleum
- moulded products such as cisterns and tanks
- asbestos bitumen roofing felts and damp proof courses.

Associated Hazards

Asbestos is a Category 1 carcinogen and all six types can cause cancer. Friable, damaged or disturbed asbestos is more likely to release fibres into the air that can lead to inhalation by exposed persons and contamination of clothing and skin. Examples of friable asbestos include sprayed fireproofing on structural steelwork or thermal insulation on pipe work. Non-friable asbestos means material containing asbestos that is resistant to mild abrasion and damage and less likely to release inhalable fibres. Examples of non-friable and therefore lower risk asbestos-containing materials include vinyl floor tiles and asbestos cement products such as roof sheets from sheds and garages, roof tiles, associated guttering, downpipes, cisterns, tanks and flue pipes.

Acceptance

CA sites that become authorised to accept non-friable asbestos should refer to the HSA's 2013 publication *Practical Guidelines on Asbestos-Containing Material Management and Abatement*.¹⁰ This document provides full guidance on all aspects of working with asbestos including risk assessment, risk abatement, training, waste management and disposal of asbestos-containing material. Reference should also be made to the guidelines below in order to develop the site's waste acceptance policy, site-specific risk assessment and standard operating procedures for the management of non-friable asbestos on site and to develop emergency procedures for unacceptable asbestos types that may arise on site. All staff should undertake asbestos awareness training and training in the site policy and procedure regarding asbestos.



Figure 1. UN-approved flexible intermediate bulk container (FIBC).

The CA site's acceptance procedure should include the following:

- The public must be required to book a delivery appointment prior to delivery of any appropriately wrapped asbestos waste to the CA site. This will ensure that there is spare capacity on site to store asbestos and that CA site staff are prepared to take delivery.
- The CA site should provide the UN-approved asbestos waste bags, suitable polythene sheeting, printed labels and information on how to prepare and wrap asbestos prior to delivery on site (this detail is contained in Section 17 of the abovementioned publication).
- CA site staff should wear appropriate PPE (see below) before accepting a load of asbestos on site.
- Deliveries of asbestos should be checked for appropriate wrapping and labelling by staff members who have received appropriate training.
- In order to discourage use by trade organisations, a quantity limit must be set in the site's waste acceptance policy. Examples of the types of quantity limits that might be used include: 15 roofing sheets (of no greater size than 120 cm by 60 cm sheets); this is approximately equal to the amount of roofing sheets that come from a normal single garage roof, or the ground floor area in a typical domestic property for vinyl-asbestos floor tiles; or a 50 metre limit for guttering and down pipes on an average domestic property.

Control Measures Required

Record Keeping

CA site staff must maintain the following records for asbestos stored on site:

- detailed current inventory, to manage the control and prompt movement of asbestos off site
- results of regular storage skip inspections
- results of regular inspection of the asbestos storage area
- records of asbestos awareness training records
- PPE records, including records of respirator face-fit test records.

¹⁰ *Asbestos-containing Materials (ACMs) in Workplaces. Practical Guidelines on ACM Management and Abatement.* HSA, 2013a. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/Asbestos-containing_Materials_ACMs_in_Workplaces_-_Practical_Guidelines_on_ACM_Management_and_Abatement.html

Storage Requirements

A site that accepts asbestos must have a dedicated secure storage compound that is as remote as possible from other site activities and from the public.

- The compound should have asbestos warning signage on the entrance gate and on the fence, stating "Asbestos Waste Only"
- Signs should also be posted at the site entrance and at the asbestos unloading area asking members of the public with asbestos products to notify site staff before unloading.
- Wrapped asbestos should be stored in an enclosed lockable roll on/off flat-bedded skip. This will remove the requirement for double handling of asbestos waste on site and prevent the generation of contaminated rainwater.

A teleporter may be required to handle and insert wrapped asbestos or FIBCs (flexible intermediate bulk containers) into an enclosed lockable roll on/off flat-bedded skip.

- Hoses to dampen down suspect material in the event of inadvertent damage to wrapped/bagged asbestos should be available close by.



Figure 2. An enclosed lockable skip for asbestos storage.

Separation Distance

The asbestos storage area should be located remotely from other wastes and activities on site. Refer to Table 3 for further separation distances.

Handling

Deliveries should be checked by staff trained in handling asbestos-containing material. If there is any doubt as to the content of a delivery, it should be treated as asbestos-containing material until deemed not to contain asbestos by an appropriately qualified person.

Personal Protective Equipment

Section 10 of the HSA's publication *Practical Guidelines on Asbestos-Containing Material Management and Abatement* should be used by CA site managers to designate the PPE required. However, appropriate PPE should include the following as a minimum:

1. respiratory protective equipment (RPE)
2. Disposable filtering face piece respirator (FFP3)
3. disposable coveralls with hoods (type 5)
4. wellington boots
5. disposable gloves

When removing PPE, care should be taken to avoid disturbing any fibres. Used PPE should be treated as asbestos waste.

Emergency Procedures

Presentation of Unwrapped Non-friable Asbestos at the CA Site by a Member of the Public

In this case, the carrier (holder) of the waste should be informed immediately that the asbestos waste is not acceptable at the site in its current state. The holder of the waste should be given instructions on the correct presentation of asbestos-containing material. The CA site should provide appropriate bags and stickers warning of asbestos, so that the holder can correctly present the asbestos.

Procedures to follow if unacceptable friable asbestos or asbestos that has not been presented in an appropriate manner is dealt with in section 4.4 Procedure for Unacceptable Wastes.

Dangerous Good: Yes

ADR Hazard Class: 9 (Miscellaneous)

UN number: Various (refer to the HSA's publication *Carriage of Asbestos and Asbestos Waste by Road*¹¹)

Batteries

All batteries contain substances that are harmful to the environment, so collecting and recycling batteries can prevent pollution and save resources. The Battery and Accumulator Regulations 2014¹² describe three types of batteries that are covered under these regulations:

1. **automotive batteries** (ignition/starter batteries in cars, vans, trucks and boats)
2. **industrial batteries** (including those used in forklift trucks, electric pallet trucks, electric vehicles and golf buggies)
3. **portable batteries** (including those found in blister packs used in household appliances, toys, mobile phones, remote controls, button cells used in cameras, watches, etc.).

Waste batteries must be separately collected for recycling and recovery of resources. They must not be disposed of in general refuse or mixed waste streams and free take-back must be provided to all end users. This applies to both household and non-household end users. A system for the free take-back of waste batteries from the household waste stream is well established through retail outlets and they can be brought to CA sites.

Waste industrial batteries are generally managed through specialist suppliers. Therefore, this guidance will focus on the handling and storage of portable and automotive batteries only.

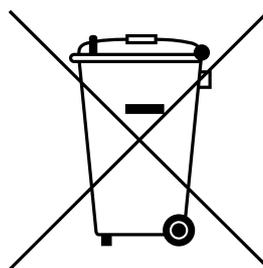


Figure 3. Waste batteries must not be disposed of in general refuse.

12 2015 European Union (Batteries and Accumulators) (Amendment) Regulations, 2015. Amendment to Batteries and Accumulators Regulation.

Batteries (Automotive)

LoW Code and Description

- 16 06 01* lead batteries
- 16 06 02* Ni-Cd batteries
- 16 06 03* mercury-containing batteries
- 20 01 33* batteries and accumulators
- 20 01 34 batteries and accumulators not mentioned in 20 01 33*



Description

Automotive batteries are a type of rechargeable battery that supplies electric energy to a vehicle's starter motor, lights and ignition system. Automotive starter batteries are usually of lead–acid type.

Automotive batteries are included in the scope of the Batteries and Accumulators Regulations 2014. Therefore, householders can bring back waste batteries free of charge to the retailer selling batteries of a similar type, on a one-for-zero basis (i.e. no purchase is necessary), or, alternatively, take them to the local CA site.

Associated Hazards

Automotive batteries are very toxic to aquatic life and are harmful to human health. Lead is persistent in soil and sediments and bioaccumulates in aquatic and terrestrial animals and plants. Automotive batteries are also corrosive and can also produce high-energy sparks and heating if shorted-out by a metal item placed or dropped across the terminals. Shorting is often violent enough to “weld” a metal item (e.g. metal jewellery) to the battery and provide a source of ignition (it cannot be assumed that waste batteries have been discharged).

Lead–acid batteries can also produce highly flammable hydrogen. This, combined with potential ignition by sparks, should shorting occur, makes vehicle batteries very hazardous. Lead–acid batteries can also split and explode if maltreated.

Control Measures Required

Record Keeping

Automotive batteries are an unstable waste that require daily inspection. CA site staff must maintain the following records:

- Record of daily storage container inspection. Containers should be inspected daily to ensure they are intact and free from conductive objects that may cause shorting.
- Records of spill kit inspection: if any elements of the spill kit are not functional or present, they must be replaced.
- Records of spillage emergency response training should be maintained.

Storage Requirements

- The following storage requirements should be in place for automotive batteries:
- Batteries should only be stored in plastic or stainless steel boxes/containers of a capacity of up to 1 m³ and must be covered/fitted with a lid or stored in a covered area in order to prevent ingress of rainwater and consequent contamination of surface water.
- Containers should not be filled above the height of the box sides.
- Containers should be labelled “Automotive Batteries Only” to reflect the contents and the hazard.
- Signage should be erected for members of the public disposing automotive batteries, outlining their proper handling and associated risks.
- Containers should be labelled with the corrosive warning sign plus a written warning.
- Storage containers should be inspected regularly to ensure that they are intact.
- The lid of the storage containers must be kept closed and locked when the site is closed.
- Metal or other conductive wastes should not be placed in vehicle battery containers – this includes small domestic batteries

Separation Distance

- Containers for automotive batteries should be kept close to those for domestic batteries (for easy use by the public), but at least 3 metres apart in case of spills.
- Ensure batteries are not located within 6 metres of flammable gas cage or flammable liquids containers, or where any spill may leak into drainage systems. See Table 3 for further separation distances.

Handling

When handling vehicle batteries:

- Ensure batteries are always handled in a well-ventilated area.
- Do not touch the terminals with metal objects such as bracelets or long necklaces or rings. Metal jewellery in contact with battery terminals causes burns and flash injuries. Jewellery should never be worn when working with batteries.
- A safety data sheet should be held at storage area.
- A spare pair of acid-resistant gloves and safety glasses should be available at the battery location for CA site users.

Personal Protective Equipment

- PPE such as high-visibility clothing, gloves, trousers and boots with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.
- Due to the presence of strong sulfuric acid in lead–acid batteries, site staff should wear rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots, and appropriate eye protection, such as chemical goggles or a face shield.
- In addition, CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that it is appropriate to the risk.

Emergency Procedures

- Damaged batteries should be double-bagged in polyethylene bags of at least 85 microns thickness.
- In the event of skin or eye contact, immediately drench the affected area with clean water and remove any contaminated clothing; if any soreness or irritation persists seek medical attention.
- Eyewash bottles should be provided close to battery containers because of the danger of battery acid.
- Any spillage must be cleaned up immediately using suitable absorbent granules. Consideration should be given to the selection of a spill kit with absorbents designed to absorb the spill and, if required, an acid neutraliser for battery acid spills, which are available commercially.
- The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment of automotive batteries on site and by automotive battery safety data sheets.

Dangerous Good: Yes

ADR Hazard Class: 8 (Corrosive substances)

UN number: Various

Transport regulations may apply if exemption criteria are not complied with. Further advice should be sought from a DGSA/specialist waste contractor. Appropriate UN number and hazard label should be applied to the box for transport. Consequently, ADR consignor and other participant duties may apply.

Batteries (Portable)

LoW Code and Description

- 16 06 01* lead batteries
- 16 06 02* Ni-Cd batteries
- 16 06 03* mercury-containing batteries
- 16 06 05 other batteries and accumulators (including lithium batteries)
- 20 01 33* batteries and accumulators
- 20 01 34 batteries and accumulators not mentioned in 20 01 33*



Description

Portable batteries include alkaline and carbon–zinc (9-volt, D, C, AA, AAA), mercuric oxide (button, some cylindrical and rectangular), silver oxide and zinc–air (button), and lithium (9-volt, C, AA, coin, button, rechargeable). Portable batteries also include those found in blister packs used in household appliances, toys, mobile phones, remote controls, and button cells used in cameras, watches, etc.

These products are included in the scope of the Batteries and Accumulators Regulations 2014 and free take-back of batteries at the end of their useful life must be made available by retailers to householders and, in certain circumstances, commercial end users. They must not be disposed of in general refuse or mixed waste streams. Householders can bring back waste portable batteries free of charge to any retailer who is selling batteries of a similar type, on a one-for-zero basis (i.e. no purchase necessary), or alternatively to the local CA site.

Associated Hazards

Portable batteries are generally smaller and lower risk than automotive batteries. However, they contribute many potentially hazardous compounds to the municipal solid waste stream, including zinc, lead, nickel, alkalines, manganese, cadmium, silver and mercury. If lithium batteries are exposed to water, there is a chemical reaction that releases hydrogen and significant amounts of heat. Contact with battery contents may cause irritation to skin and eyes. Inhalation of vapours or fumes released due to heat or a large number of leaking batteries may cause respiratory irritation.

Control Measures Required

Record Keeping

CA site staff must maintain the following records for portable batteries:

- record of current inventory
- inventories to limit quantities on site
- record of storage container inspection and inspection for conductive objects that may cause shorting.
- CA site management can determine the frequency of container inspections and collection required by monitoring the level of activity and the quantities of batteries accepted.

Storage Requirements

The following storage requirements should be in place for portable batteries:

- Signage should clearly indicate “Portable Batteries Only – No Automotive Batteries”.
- Containers should be labelled to reflect the contents and the hazard.
- Portable batteries should be kept dry, either indoors or covered and protected from the weather.
- Portable batteries should be stored in non-conductive containers with:
 - a lid, which must be kept closed, or the container must be closed-top (e.g. enclosed plastic “tub” with holes in its upper side to accept batteries). This will allow ventilation while preventing water ingress, and
 - entry holes should be small enough to prevent automotive batteries being deposited.

Separation Distance

Containers for portable batteries should be kept close to vehicle batteries containers (for easy use by the public), but at least 3 metres apart in case of spills from vehicle batteries. They should also be kept 6 metres from paints and related DIY products and cooking oils. Refer to Table 3 for suitable separation distances.

Handling

Batteries must not be dropped, knocked, short circuited or maltreated.

Personal Protective Equipment

- PPE such as high-visibility clothing, gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.
- When dealing with batteries, site staff should wear appropriate eye protection, neoprene or natural rubber gloves, and suitable clothing such as an apron or strong overalls.
- CA site management must make an assessment of the hazards at the site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

Emergency Procedures

- Do not use water to fight fires that may contain lithium batteries. Lithium batteries often contain a copper powder. If fires containing lithium batteries are treated with water, the batteries will release large amounts of hydrogen, making them more dangerous.
- The selection, number and location of fire extinguishers should be informed by a risk assessment of portable batteries on site and by safety data sheets.

Dangerous Good: Yes (Lithium batteries)

ADR Hazard: Class 9

UN number: Various

Used lithium cells and batteries with a gross mass of not more than 500 g each, whether or not contained in equipment, collected and presented for carriage for disposal between the consumer collecting point and the intermediate processing facility, together with other non-lithium cells or batteries, are not subject to the other provisions of ADR if they meet the following conditions:

1. The provisions of packing instruction P909 (packaged into suitable drums, boxes or jerricans conforming to ADR packing group II and special packing provision 377 and 636 applies).
2. A quality assurance system is in place to ensure that the total amount of lithium cells or batteries per transport unit does not exceed 333 kg.
3. Packages shall bear the inscription: "LITHIUM BATTERIES FOR DISPOSAL" or "LITHIUM BATTERIES FOR RECYCLING".

Large lithium batteries (> 500 g) and damaged lithium batteries require specialist assessment prior to transport.

Transport regulations may apply if exemption criteria are not complied with or are not applicable. Further advice to be sought from a specialist waste contractor. Consequently, ADR consignor and other participant duties may apply.

Fire Extinguishers

<p>LoW Code and Description</p> <p>16 05 04* gases in pressure containers (including halons) containing dangerous substances</p> <p>16 05 05 gases in pressure containers other than those mentioned in 16 05 04</p>	
<p>Description</p> <p>There are two main types of fire extinguishers: stored pressure and cartridge-operated extinguishers. In stored pressure units, the propellant is stored in the same chamber as the fire-fighting agent itself. Depending on the agent used, different propellants are used. With dry chemical extinguishers, nitrogen is typically used; water and foam extinguishers typically use air. Stored pressure fire extinguishers are the most common type. Cartridge-operated extinguishers contain the propellant gas in a separate cartridge that is punctured prior to discharge, exposing the propellant to the extinguishing agent. This type is not as common.</p> <p>Halon fire extinguishers are usually green and marked “halon” or “BCF” (bromochlorodifluoromethane) and can be stored within the same secure area as other fire extinguishers. Halon was banned in 2003, under the Ozone-depleting Substances (ODS) Regulation (1005/2009/EC) because it damages the ozone layer. Halon must be recovered and destroyed by authorised processes. Newer extinguishers may contain F-gases, which are also widely used for refrigeration and air conditioning; these are climate change gases and should be brought to an authorised facility for disposal. Those cylinders are owned by the manufacturer/main supplier of the gas and therefore they may not be classified as waste.</p> <p>Associated Hazards</p> <p>Fire extinguishers are usually under pressure and should be treated in the same manner as compressed gas cylinders. Halon is a potent ozone-depleting substance and F-gases are potent climate change gases.</p> <p>CA site managers must assess the hazard of the range of extinguishers on site and a decision must be made as to which is the most important by assessing the product label or the safety data sheet or checking with the site’s DGSA if necessary.</p>	
<p>Control Measures Required</p>	
<p>Record Keeping</p> <p>CA site staff must maintain the following record for fire extinguishers:</p> <ul style="list-style-type: none"> ➤ A current inventory of fire extinguishers must be maintained and used to keep stored quantities to a minimum. <p>Storage Requirements</p> <ul style="list-style-type: none"> ➤ At a minimum, fire extinguishers should be kept in the open air in a caged area with other [non-liquefied petroleum gas (LPG)] compressed gases, and away from occupied buildings, traffic and boundaries. ➤ The cage should be kept locked at all times with the exception of loading and unloading. ➤ Cylinder storage area should be located away from sources of ignition, heat and moving vehicles. ➤ The caged area should be labelled with the hazard symbol to reflect gas under pressure. 	

Separation Distance

The storage area should be at least 3 metres distance from the other hazardous waste containers and 6 metres away from cooking oil. See Table 3 for further separation distances.

Handling

Because of the diverse range of fire extinguishers available, local authorities and their contractors should consult supplier information on fire extinguisher cylinders and contact suppliers for treatment and disposal guidance. The original manufacturer of an end-of-life fire extinguisher may be able to offer advice and/or a collection service.

Personal Protective Equipment

- PPE such as high-visibility clothing, gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites. When moving fire extinguishers, appropriate eye protection and gloves should be worn.
- CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

Emergency Procedures

- If eye contact occurs, immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
- If skin contact occurs, wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.
- In the event of fire, fire extinguishers are used as extinguishing agents and therefore are not a problem when trying to control a blaze. Use an extinguishing agent appropriate to the other materials involved.

Dangerous Good: Yes

ADR Hazard: Class 2 (Gases)

UN number: UN 1044

UN 1044 is for fire extinguishers with compressed or liquefied gas. Note that other types exist.

Transport regulations apply. Seek advice from a specialist contractor. ADR consignor and other participant duties apply.

Gas Cylinders

LoW Code and Description

16 05 04* gases in pressure containers (including halons) containing dangerous substances

16 05 05 gases in pressure containers other than those mentioned in 16 05 04



Description

Gas bottles/cylinders for heating, refrigeration, industrial uses, etc. are often brought to CA sites. These can contain residual amounts of fuels such as propane or butane, which are flammable, refrigerant gas such as F-gases or ODS, which are climate change gases and ozone layer-depleting gases, respectively, or industrial gases such as carbon dioxide, acetylene and oxygen, etc.

CA site staff should examine all cylinders on receipt at the CA site and should consider the condition of the cylinder including any valve damage and the type of gas contained. Any damaged cylinders should be isolated.

All gas cylinders are required to be labelled to indicate the contents and this should be the primary means of identifying the contents, the hazard(s) and the owner of the cylinder. The British Compressed Gases Association's information sheet on cylinder identification provides further information on interpreting labels.¹³ The shoulder colour, i.e. the colour on the curved part at the top of the cylinder, will identify the properties of the gas in the cylinder¹⁴ as shown in Table 2 (this is not applicable to LPG cylinders).¹⁵

Table 2. Colour classification of industrial and medical gas cylinders by hazard property; this colour code does not apply to LPG cylinders (cylinder identification, colour coding and labelling requirements, British Compressed Gases Association)

GAS TYPE	COLOUR	
Inert		Bright green RAL 6018
Oxidising		Light blue RAL 5012
Flammable		Red RAL 3000
Toxic and / or Corrosive		Yellow RAL 1018

Gas cylinders are owned by the manufacturer/main supplier of the gas and therefore they may not be classified as waste. The simplest and best way for CA site staff to deal with cylinders is to contact the supplier and request that they be collected. The supplier's name should be on the cylinder. Householders should be encouraged to return unwanted heating fuel cylinders to a local dealer. If the owner of a cylinder is unidentifiable, some gas distribution companies may collect "orphaned" gas cylinders for reuse. If a cylinder needs to go for disposal by specialist companies, a hazardous waste contractor can advise on this.

13 Cylinder Identification. Colour Coding and Labelling Requirements. Technical Information Sheet 6 Revision 2. British Compressed Gases Association, 2012. www.bcgaco.uk

14 EN 1089-3 European standard colour coding for gas cylinders.

15 The Safe Handling of Gas Cylinders at Waste Facilities Leaflet 2 Revision 4. British Compressed Gases Association, 2013. www.bcgaco.uk

Associated Hazards

Gas cylinders, including LPG cylinders and other gas cylinders, may contain significant amounts of their original gas. The hazards associated with these gases include flammability, explosion hazards, toxic effects of leaks and the physical hazards of a ruptured cylinder. The release of gas in a confined space can displace oxygen and cause asphyxiation, and contact with cold gas as it escapes can damage the skin. Gas cylinders are under pressure and may explode if heated.

The variety of gas cylinders present may have multiple hazards and a decision must be made as to which is the most important by talking to the waste holder, assessing the product label, the Safety Data Sheet or checking with the site's DGSA if necessary.

Control Measures Required**Record Keeping**

CA site staff must maintain the following record for gas cylinders:

- The current inventory of numbers of cylinders and gas types stored on site. These records must be made available to the emergency services in the event of a fire.

Storage Requirements

- LPG cylinders and other gas cylinders should be stored in locked cages in the open air, ideally protected from the weather to prevent excessive heating or corrosion due to rainfall. If cylinders must be stored inside, the area must be well ventilated to dissipate gas if there is a leak.
- If storing flammable gases, the area must be free from any source of ignition, e.g. light fittings, heaters etc.
- At least two gas cylinder cages should be available, unless a larger gas cylinder cage with suitable internal firewall segregation is provided. These should be used to segregate flammable gases from non-flammable and non-toxic gases.
- Cages should be locked at all times except when cylinders are being moved in/out.
- Cylinders must be securely stored upright to prevent toppling, unless instructions on the cylinder state otherwise.
- The cylinder storage area should be well drained to prevent water accumulation and corrosion of the cylinders.
- The storage area should be clearly marked with signs to indicate the hazard, the types of gas stored and prohibition of smoking and naked flames.
- Good housekeeping should ensure that the area around cages must be kept free of combustible or flammable materials.
- Acetylene cylinders should be isolated from all other gases, in a separate cage and removed from site as soon as possible – acetylene fires are extremely energetic.
- Cylinders should be kept in areas that are well away from moving vehicles and occupied buildings.
- The caged area should be labelled with the hazard symbol to reflect gas under pressure, may explode if heated and any hazard particular to the individual cylinders on site.

Separation Distance

- Stores should segregate flammable gases (e.g. acetylene, butane and propane) from non-flammable and non-toxic gases.
- Stores should be at least 3 metres apart or separated by a suitable firewall. Flammable gas stores should not be located within 6 metres of any potential ignition sources such as electrical systems or batteries.
- Cages should not be located within 3 metres of traffic or the site boundary.

Handling

Cylinders are heavy and should be handled with care. They should not be dropped or subjected to impact when being moved or used. When handling cylinders:

- Assess the risk before lifting or moving cylinders (refer to manual handling guidelines¹⁶).
- Whenever possible use mechanical handling aids to move the cylinder, e.g. via fork lift trucks, pallets, stillages. For short distances, use a suitable cylinder trolley.
- Do not lift a cylinder by its valve or valve guard.
- Do not roll cylinders along the ground (for larger cylinders use a cylinder trolley).
- Do not cut into or attempt to puncture cylinders.
- Do not drop cylinders, bang cylinders together or maltreat them.
- Do not attempt to discharge or empty gas cylinders.
- Never attempt to stop a falling cylinder, get out of the way.
- No gas cylinder scavenging is permitted. Only authorised collectors should remove gas cylinders.

Personal Protective Equipment

PPE such as high-visibility clothing, gloves, and trousers, footwear with appropriate physical protection and slip-resistant properties and eye protection should be worn when working with cylinders.

In addition, CA site management must make an assessment of the hazards of the range of gas cylinders on site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

Emergency Procedures

- Upon discovering or suspecting a leak from a flammable gas cylinder personnel should inform others in the area and direct all personnel and users of the CA site to evacuate the area. Inform the facility manager of a leak or suspected leak and alert emergency services.
- The CA sites current inventory of gas cylinders should be made available to the emergency services in the event of a fire.
- The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment of gas cylinders on the site and by the waste safety data sheets. In the event of fire, dry powder extinguishers or other appropriate fire extinguishers should be used.

Dangerous Good: Yes

ADR Hazard Class: 2 (Gases)

UN number: Various

Transport regulations apply. Seek advice from a specialist contractor. ADR consignor and other participant duties apply.

¹⁶ Handle Gas Cylinders Safely. Information for customers handling gas cylinders. Revision 1. British Compressed Gases Association (BCGA), 2010. http://www.bcg.co.uk/pages/index.cfm?page_id=21&title=technical_information_sheets

Household and Garden Chemicals

LoW Code and Description

- 20 01 14* acids, e.g. corrosive floor cleaners
- 20 01 15* alkalines, e.g. bleach
- 20 01 19* pesticides
- 20 01 29* detergents containing dangerous substances
- 20 01 31* cytotoxic and cytostatic medicines
- 20 01 32 medicines other than those mentioned in 20 01 31



Description

This category includes a range of household and garden chemicals that can be presented in full or partly empty containers.

Toxic waste types include pesticides (herbicides, insecticides and fungicides), weed killers, old medicines, old thermometers containing mercury and chemicals for lawn treatment. Less toxic household hazardous waste types include detergents, disinfectants and surface cleaners.

Corrosive wastes include chlorine bleaches, peroxides, hypochlorites and some fertilisers (presenting a fire hazard by yielding oxygen).

Flammable wastes include solvents such as acetone (in nail polish remover), some drain cleaners, some floor and furniture polishes, and alcohols such as surgical spirits or methylated spirits.

Hazardous waste from farms such as veterinary products, needles, unused pesticides and biocides etc. should be brought to farm hazardous waste collection days¹⁷ organised by the EPA, Teagasc and the Department of Agriculture, Food and the Marine.

Associated Hazards

Household chemicals can be split into low-risk substances, such as detergents and washing powders, and more high-risk hazardous substances, such as chlorine bleaches and peroxides, which are toxic and corrosive. **Garden chemicals** are normally non-reactive, but may be toxic or oxidising. **Pesticides** (herbicides, insecticides, fungicides) are often toxic. **Fertilisers** are oxidising agents and can be explosive if exposed to a heat source. Skin and eye contact and inhalation of toxic fumes due to uncontrolled reactions of these chemicals are toxic.

Household and garden chemicals may have multiple hazards and a decision must be made as to which is the most important by talking to the waste holder, assessing the product label or the safety data sheet or checking with the site's DGSA if necessary.

Householders should be aware that wastes with different characteristics such as oxidising, flammable, corrosive and toxic should be stored separately prior to bringing them to the CA site.

Control Measures Required

Record Keeping

Fertilisers, bleaches and pesticides can be unstable and for this reason household and garden chemicals should be checked daily. CA site staff must maintain the following records:

- a current inventory of materials stored, and this should be used to keep stored quantities to a minimum and should be presented to the emergency services in the event of a fire
- relevant safety data sheets
- the name of the chemicals (if known)
- date deposited and, if possible, the name and contact details of the member of the public who deposited the waste
- results of regular checks for spills within the storage container
- results of regular inspections of storage containers to ensure they are intact.

¹⁷ <http://www.epa.ie/waste/hazardous/farmwaste/>

Storage Requirements

The ideal scenario for the storage of household and garden chemicals is a fully contained storage compound in which hazardous waste is segregated into various containers for the different categories of hazardous waste, e.g. corrosive, flammable, toxic, etc. This must be done according to the direction of the site's DGSA or hazardous waste collection contractor.

A practical option to achieve this may be a steel shipping container (6–12 m long x 3 m wide x 2.5 m high) that is adapted for the purpose or two separate storage containers, one containing flammable materials and the other containing all other chemicals. The container(s) should be placed in an area well away from vehicle movements.

The adaptations required may include:

- a lockable door that is kept locked at all times
- gridded floor over internal bund of 27.5 litres to contain spills
- separate bunding so that spills of chemicals from different hazard categories are prevented from mixing
- safe lighting (ATEX rated¹⁸ where appropriate)
- steel firewalls fitted between each hazard category of waste
- suitable shelving or racking in order to provide adequate space for upright storage of containers
- suitable ventilation to prevent build-up of vapour
- container marked with appropriate hazard symbol(s) and content label
- appropriate spill kits to include absorbent materials in case of spills
- appropriate screw-top UN standard containers for storage of materials that are deposited at the site in fragile or leaky containers
- segregation of solids (pellets) and liquids within the cabinet; solids should be stored at the top of the cabinet and liquids towards the bottom on separate shelves, which will prevent liquids leaking onto solids
- leaving chemicals in their original container (if intact) and placing all containers upright in the appropriate storage area
- a container located at least 3 metres away from other waste containers
- using a container with a closed lid – some oxidising agents will “heat” when exposed to water and the container must be kept dry and not left open
- storing medicines, if accepted, in a container with a small opening to prevent them from being removed or stolen.

Separation Distance

- Low-risk chemicals such as detergents and washing powders can be stored together, in a suitable container with a closing lid.
- High-risk chemicals such as those that are corrosive, toxic, flammable or oxidising must be segregated according to the hazard classes in Table 5: Segregation of hazardous waste by hazard class.
- The minimum requirement in terms of segregation of different materials should ensure that corrosive, oxidising, flammable and other hazardous materials are stored in separate locked containers. These should be kept 6 metres from batteries and gas cylinders. See Table 3 for further separation distances.
- The most hazardous household waste types are oxidising substances such as bleaches, peroxides and some fertilisers. These should be kept in a dedicated secure cabinet with drip and spill protection and internal segregation to prevent substances mixing. Solids should be stored above liquids.
- Non-reactive toxic substances, such as pesticides (herbicides, insecticides, fungicides) should be kept separate from oxidising agents such as fertilisers.

18 The ATEX Directive consists of two European Commission directives that describe the equipment and work environment allowed in an environment with an explosive atmosphere. ATEX derives its name from the French title of the 94/9/EC directive: Appareils destinés à être utilisés en ATmosphères EXplosibles.

Handling

- Care must be taken when handling household and garden chemicals to avoid spills and mixing of waste types.
- Appropriate screw-top UN standard containers should be used for storage of materials that are deposited at the site in fragile or leaky containers.
- Mercury is toxic and mercury thermometers should not be broken as the mercury forms tiny beads and vaporises at temperatures over 20°C.
- Appropriate screw-top UN standard containers should be used for mercury thermometers.

Personal Protective Equipment

- PPE such as high-visibility clothing, gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites. In addition, when dealing with household and garden chemicals, appropriate eye protection and suitable clothing such as overalls should be worn.
- CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

Emergency Procedures

In the event of an emergency:

- Absorbent granules must be used to clean up any spills immediately and the contaminated granules must be disposed of as hazardous waste.
- Spill kits should be used quickly to absorb spilled mercury before it vaporises and disposed of as hazardous waste.
- In the event of fire, the record of inventory should be made available to the emergency services.
- The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment of the inventory of waste at the site and by the safety data sheets.

Dangerous Good: Yes

ADR Hazard Class: Various

UN number: Various

Transport regulations apply. Seek specialist advice. ADR consignor and other participant duties apply.

Motoring Products

LoW Code and Description

- 13 07 01* fuel oil and diesel
- 13 07 02* petrol
- 16 01 13* brake fluids
- 16 01 14* antifreeze fluids containing dangerous substances
- 16 01 15 antifreeze fluids other than those mentioned in 16 01 14



Description

Motoring products that may be presented at a CA site include flammable and toxic substances such as petrol, diesel, brake fluid, transmission fluid, antifreeze and rust remover.

Associated Hazards

Antifreeze is highly toxic; it has a sweet taste and smell that make it attractive to children and pets. Rust remover is corrosive. The hazards associated with these motoring products include fire/explosion hazards and toxic effects. Inhalation of fumes can result in headaches, dizziness, nausea or drowsiness.

Control Measures Required

Record Keeping

CA site management must determine the frequency of container inspections and collection required by monitoring the level of activity and the quantities of motoring products accepted.

Records required are:

- a record of current inventory of each waste; inventories should be managed to keep stored quantities to a minimum
- regular storage container inspection
- results of regular spill checks, including checking for leaking containers within the cabinet.

Storage Requirements

Petrol, diesel, brake fluid and transmission fluid are flammable and therefore should be stored in designated flame-proof containers.

Flammable motoring products should be stored upright and in their original containers, in a shelved flammable materials container. Other storage measures include:



Figure 4. Store large recovery containers in banded areas (steel grids as shown).

- a container with a closed lid that is labelled with the appropriate flammable/toxic/corrosive hazard label
- a separate appropriately labelled locked cabinet with ventilation and internal bunding/spill containment
- shelves within the cabinet that are ventilated to allow spills to fall through
- recovery containers stored in banded areas
- absorbent granules to clean up any spills immediately and the contaminated granules disposed of correctly
- signage asking users to report spillages immediately.

Separation Distance

Waste motoring products should not be mixed with each other, or mixed with waste oil collections on site, and storage cabinets should be located at least 3 metres away from other waste containers and at least 6 metres from a gas cage or vehicle battery container. See Table 3: Separation distances, and for further separation distances based on hazard classes of waste see Table 5: Segregation of hazardous waste by hazard class.

Handling

- Members of the public that present waste motoring products should be directed by a member of site staff when depositing motoring products, and the wastes should be locked away promptly.
- Care should be taken to avoid spills and mixing of waste types.
- A box of nitrile disposable gloves should be maintained (for handling oils, greases, hydrocarbons) and paper towels adjacent to the containers.

Personal Protective Equipment

- PPE such as high-visibility clothing, gloves, trousers and boots with steel toe caps and steel soleplates must be worn by staff on CA sites at all times. When dealing with liquid motoring products, appropriate eye protection and suitable clothing such as overalls should be worn.
- In addition, CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

Emergency Procedures

Emergency measures should include:

- Absorbent granules must be used to clean up any spills immediately and the contaminated granules should be disposed of as hazardous waste.
- In the event of fire, the record of inventory should be made available to the emergency services.
- The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment of the inventory of waste at the site and by the safety data sheets.

Dangerous Good: Yes

ADR Hazard

Class 3 Flammable liquids

Class 6.1 Toxic substances

Class 8 Corrosive substances

UN number: Various

Transport regulations apply to certain substances. Seek advice from a specialist contractor. ADR consignor and other participant duties apply.

Oils and Oil Filters

<p>LoW Code and Description 16 01 07* oil filters 20 01 26* oil and fat other than edible oil and fat</p>	 
<p>Description Waste oils and oil filters, typically from home car servicing. The CA site's acceptance criteria should be set to encourage commercial garages that generate oil and oil filters to use the services of one of the many companies that operate collection and recycling services.</p> <p>Associated Hazards Oil is toxic, corrosive and hazardous to health. Short-term overexposure to petroleum products may lead to dizziness, drowsiness, headache and nausea. Irritation to eyes, skin and throat may also occur. The most common types of accident caused by oils at CA sites are slips and falls from spills. Oil is a commonly reported cause of water pollution. Even a small quantity can cause a lot of damage to the environment. Oils are also combustible and pose a fire risk. Dense smoke may be generated while burning.</p>	
<p>Control Measures Required</p>	
<p>Record Keeping CA site staff must maintain the following records for oil and oil filters stored on site:</p> <ul style="list-style-type: none"> ➤ a current inventory, which should be managed to limit the quantities of oil and oil filters stored on site ➤ results of daily inspections and spill checks. ➤ Storage Requirements ➤ Waste oil filters can be collected on CA sites in simple containers, such as a wheeled bin; however, oil filters contain residual oil and storage containers should therefore be sited in a bunded area. ➤ Replace wheeled bins of oil filters when they are 75% full. ➤ Waste oils should be stored in a suitably strong and bunded tank on impermeable paving. ➤ Absorbents and spill kits should be kept close to the tank. ➤ Signage to be erected, warning of dangers, flammability, slips, no smoking, no mobile phone use, and use of designated containment units. ➤ Signage asking users to report spillages immediately. ➤ Tank access hatches should be lidded and lids kept closed – a prop or similar should be provided to minimise the risk of finger trap when opening/closing the lid. ➤ A mesh over access hatches will reduce the risk of containers (e.g. filters) falling into tanks. 	

- A container to dispose of emptied oil cans should be provided next to the oil tank on a bunded area.
- Empty containers should be disposed of as hazardous waste.
- Waste oil and oil filter storage containers must be kept locked.

Separation Distance

Waste oil stores should not be within 6 metres of any gas cage, battery container or other potential source of ignition. See Table 3: Separation distances for further separation distances.

Handling

- Handle as a combustible liquid. Keep away from heat, sparks and open flame!
- Electrical equipment should be approved for a classified area.
- Spillage control, containment, suitable flooring and cleaning regimes should be used to reduce the risk of accident due to slips.
- Never use welding or cutting torches on or near containers even if they are empty because product (even just residue) can ignite explosively. No special fire hazards are known to be associated with this product.

Personal Protective Equipment

- PPE such as high-visibility clothing, gloves (such as nitrile rubber), trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.
- Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.
- Suitable clothing such as nitrile rubber gloves and overalls are required when dealing with oils.
- CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

Emergency Procedures

Emergency measures should include:

- Contain spills promptly using spill kit, sand, straw, sawdust, wood chips, peat and synthetic absorbent pads, or pillows depending on the size of the spill.
- If a larger spill occurs, prevent run-off to sewers, i.e. by using drain covers.
- Collect any contaminated sorbent and treat as hazardous waste. Brooms can be used to sweep up the sorbent material and put it into buckets, bags or barrels.
- Use cleaning regimes to reduce the risk of slips.
- Make up-to-date records of the site's current inventory of oil and oil filters available to the emergency services in the event of a fire.
- The selection, number and locations of fire extinguishers should be informed by a risk assessment and reference to safety data sheets of oils and filters brought to the site.

Dangerous Good: Yes (only when inadvertent contamination is likely with flammable substances, e.g. petrol/kerosene/diesel or environmentally hazardous substances (heavy fuel oil))

ADR Hazard

Class 9 Environmentally hazardous (to be considered)

Class 3 Flammable liquids (to be considered)

UN Number: to be determined by DGSA

Waste oil products are not subject to ADR; however, depending on the level of management control on site, waste oils may be contaminated with other substances, in which case an appropriate classification should be assigned.

Transport regulations therefore may apply. Seek advice from a specialist contractor. ADR consignor and other participant duties may apply.

Paints and DIY Products

LoW Code and Description

20 01 27* paint, inks, adhesives and resins containing dangerous substances

20 01 28 paint, inks, adhesives and resins other than those mentioned in 20 01 27

20 01 13* solvents



Description

Paint and varnish formulations have changed significantly over the past few years with elimination/reduction in the heavy metals used and a move towards water-based paints that contain lower concentrations of volatile organic compounds (VOCs).

Although much of the paint etc. received on site may be non-hazardous, it still has the potential to cause mess, contamination or nuisance. Hazardous paints and solvents are generally specialist, industrial, commercial or older paints that are marked as hazardous products and may have been hoarded. Many solvent-based paint strippers, paint thinners (such as turpentine) and wood preservatives are also flammable and toxic.

Associated Hazards

Most domestic paints are now non-hazardous, but they should be collected separately for disposal or reuse because of their potential to cause contamination of other wastes or collection vehicles. Paint spills may cause long-term adverse effects in the aquatic environment and cause mess leading to staining, slips, trips and falls. Paint tins can expand in heat, leading to leaks or even explosion. Paints, solvents and thinners are toxic if swallowed.

The main hazards arise from older paints and varnishes that may contain any of a range of flammable, harmful, toxic and carcinogenic organic solvents.

Paints and DIY products may have multiple hazards and a decision must be made as to which is the most important by talking to the waste holder, assessing the product label or the safety data sheet or checking with the site's DGSA if necessary.

Control Measures Required

Record Keeping

CA site staff must maintain the following records for paints and DIY products:

- Record of daily inspections that includes checking for spills and leaking containers within the storage container. During hot weather more frequent checks may be required.
- Record of current inventory of hazardous paints and adhesives on site and inventories to keep stored quantities to a minimum.

Storage Requirements

The following storage requirements should be in place for paints and DIY products:

- Because all paints are sent for treatment in the same process, hazardous and non-hazardous paints can be co-collected on site for further treatment; however, no decanting or bulking up should be undertaken.
- CA site staff should never bulk up or mix hazardous waste streams. Bulking up of flammable liquids by pouring smaller quantities into larger containers carries a high risk of fire.
- All waste paints and DIY products should be left in the containers/bottles they are presented in unless these are leaking or in poor condition (they should be placed in new containers and spill kits should be used).
- Flammable liquids (solvent-based paints, solvents, thinners) should be stored in a locked container with internal isolation, bunding and good ventilation.
- Warning signs should indicate “flammable liquid” and “no smoking and no naked flames”.
- Shelves within the container should be ventilated to allow spills to fall through and not sit on a shelf.
- The public should be directed to deposit paint, adhesives and thinners onto bunded trays for sorting by site staff. Alternatively, signage should direct the public to carefully place paints into containers to avoid spills and mixing of paint types.
- Any large containers of flammable liquids received on site should be isolated.



Separation Distance

Solvent-based paints, solvents or thinners should not be stored within 6 metres of a flammable gas cage, aerosols, battery containers or other potential sources of ignition. See Table 3 for further information on separation distances and Table 5: Segregation of hazardous waste by hazard class.

Handling

- Care must be taken when handling paints and DIY products to avoid spills and mixing of paint types.
- To reduce mixing of hazardous and non-hazardous waste, the public should be directed to deposit paint, adhesives and thinners onto bunded trays for sorting by site staff. If this is not possible, the public should carefully place paints directly into containers to avoid spills and mixing of paint types.

Personal Protective Equipment

- CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.
- PPE such as high-visibility clothing, gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites. Appropriate eye protection and suitable clothing such as overalls should also be worn when dealing with paint and DIY products.

Emergency Procedures

Emergency measures should include:

- In the event of small spills, use absorbent granules to soak up small spills.
- Use booms or containment pillows to contain large spills and ensure that they are disposed of correctly after use.
- Drain covers should be used to prevent the spill reaching the storm water system.
- Records of the current inventory of paints and DIY products should be made available to the emergency services in the event of fire.
- Clean-up materials should be placed in UN-type containers and treated as hazardous waste.
- In the event that a flammable liquid (paint thinner) is spilled, only spark-free clean-up utensils should be used.
- Mop the area with water and detergent. Dispose of this water in accordance with the waste management procedure.
- The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment and reference to safety data sheets of the range of paints and DIY products brought to the site.

Emergency Procedures for Flammable Solvents (i.e. paint thinners)

Flammable liquids with a flash point below 60°C evaporate quickly and can reach a high vapour concentration within a very short period. They can present explosive risks where ignition sources exist and the concentration of vapour exceeds the lower explosive limit for the material.

Consideration should be given to the following in the preparation of a site-specific emergency response procedure (ERP):

- Only spark-free clean-up utensils may be utilised.
- Contain the spillage with absorbent pillows to prevent spread of the solvent and generation of a larger evaporation surface.
- Evacuate the area and inform the facility if the spillage is significant, assemble designated staff and review the material safety data sheet (MSDS) with regard to the spill clean-up and associated hazards.
- PPE required is as specified in the MSDS.
- Working from the outside in, cover the spill with absorbent pillows and mats.
- Place the absorbents in a chemical waste bag, label, seal and place in an open-top drum/container
- Mop the area with water and detergent. Dispose of this water in accordance with the waste management procedure.
- Label the drum in accordance with the waste material and transfer to the waste staging room.
- If there is any doubt over the material spilled or if an excessive amount has been spilled, then consideration should be given to calling the emergency services.

Dangerous Good: Yes

ADR Hazard: Class 3 (Flammable liquids)

UN number: Various (e.g. UN1263)

Transport regulations apply to certain substances. Note ADR special provision 650 for packaging, marking and labelling requirements – restrictions apply to the type of packaging that may be used. Seek advice from a specialist contractor. ADR consignor and other participant duties apply.

Smoke Alarms

LoW Code and Description

20 01 35* discarded electrical and electronic equipment (other than those mentioned in 20 01 21* and 20 01 23*) containing hazardous components



Description

There are two types of smoke alarms in general use: photoelectric detectors, which present no environmental risk, and ionisation chamber detectors, which present little risk in normal use. However, if damaged by fire, americium may be released, resulting in low-level radiation.

Ionisation chamber smoke detectors (ICSDs) use an ionisation chamber and a source of ionising radiation to detect smoke particles. ICSDs contain a low-activity americium-241 source (typically less than 37 kilobecquerels (kBq) and can be battery operated or mains operated with a battery backup.¹⁹ These products are included in the scope of the WEEE and Batteries Regulations and free take-back must be made available by retailers to householders and, in certain circumstances, commercial end users at the end of their useful life. They must not be disposed of in general refuse or mixed waste streams.

Householders can bring back waste smoke alarms, including ICSDs, free of charge to the retailer when they are purchasing a new one, on a one-for-one basis, or alternatively take them to the local CA site. Retailers can arrange collection through their WEEE compliance schemes.

CA site managers should arrange for collection of waste ICSDs by WEEE compliance schemes. ICSDs should be sent by surface mail as they are not suitable for air transport. Guidance on management of ICSDs is available on the EPA website at www.epa.ie/pubs/advice/waste/weee/guidancenoteonwasteionisationchambersmokedetectorsicsds.html

Associated Hazards

Smoke detectors contain americium, a radioactive material that, if ingested, increases the risk of developing cancer. The annual dose to a user of an ICSD is approximately 0.1 microsievert in comparison with an average annual dose of 4037 microsieverts in Ireland.²⁰ Approximately 86% of this dose is from natural sources. Man-made sources contribute approximately 14% and are dominated by the beneficial use of radiation in medicine.

The potential dose estimated in the event of mechanical damage to a smoke detector is 80 microsieverts per year, which is very low. However, an accumulation of smoke detectors could result in exposure to much higher dosages. If ionisation chamber detectors are damaged by fire, americium, a radioactive element, would be released into the atmosphere, resulting in low-level radiation.

Control Measures Required

Record Keeping

CA site staff must maintain the following records for smoke alarms:

- results of daily inspections
- an inventory of current amounts of ICSDs on site, which should be used to keep stored quantities of ICSDs to a minimum
- documentation relating to the transfer of ICSDs off site.

Storage Requirements

- Photoelectric smoke detectors and ICSDs should be stored separately in covered containers.
- ICSDs should be stored in a segregated storage area in a covered drum (preferably steel), or other appropriate covered container. The container must be accurately labelled and stored under suitable, secure cover.
- Clear signage should also be displayed at the area in which the ICSD storage receptacle is located, indicating “Ionisation Chamber Smoke Detectors (ICSDs)”.
- Signage should be erected, warning persons not to break or dismantle smoke alarms.
- Adherence to the above demonstrates compliance with Schedule 8 of the WEEE Regulations²¹ and is also considered good practice from a radiological protection perspective.

Separation Distance

Smoke alarms should be kept 3 metres from fire extinguishers and 3 metres from household and garden chemicals. See Table 3 for further separation distances.

Handling

- Smoke detectors should not be crushed or dismantled.
- Small domestic detectors should be segregated.

Personal Protective Equipment

CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

PPE such as high-visibility clothing, appropriate gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.

Emergency Procedures

Emergency measures in the event of a fire should include:

- the provision of the inventory of ionisation chamber detectors to the fire services
- the selection, number and locations of fire extinguishers should be informed by the results of a site risk assessment.

Dangerous Good: Yes

ADR Hazard: Class 7 (Radioactive material)

Transport must be undertaken in compliance with ADR Regulations for road transport and the IMO IMDG Code¹³ for transport by sea. For ICSDs being shipped out of Ireland by sea, pre-authorisation for the carriage of these units is also required by the sea carrier and the relevant port’s Harbour Master’s office.

19 Guidance Note on Waste Ionisation Chamber Smoke Detectors (ICSDs) at end-of-life. EPA, 2015. <http://www.epa.ie/pubs/advice/waste/weee/guidancenoteonwasteionisationchambersmokedetectorsicsds.html>

20 Radiation Doses Received by the Irish Population. Radiological Protection Institute of Ireland, 2014. http://www.epa.ie/pubs/reports/radiation/RPII_Radiation_Doses_Irish_Population_2014.pdf

21 European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014).

Vegetable Oil, Edible Oil and Fats

LoW Code and Description

20 01 25 edible oil and fat



Description

Vegetable oil, edible oil and fats are non-hazardous; however, they are included here as they are difficult for householders to dispose of and are accepted at many CA sites. Waste cooking oils can be cleaned and used in animal feeds, as fuels or manufactured into biofuels.

Associated Hazards

Waste vegetable oils are combustible and may pose a fire risk. However, the most common types of accident caused by oils at CA sites are slips and falls from spills and leaks.

Control Measures Required

Record Keeping

CA site staff must maintain the following records for cooking oil:

- results of daily inspections for spills and leaks
- a current inventory that should be used to limit quantities on site.

Storage Requirements

- A strong and bunded tank, with a replaceable plastic cover to protect user's clothes should be used to store waste oils, as in the photograph above.
- Containers should be labelled to reflect the contents and the hazard, and to advise of the risk of slips.
- Any lids should be kept closed out of hours and there should be a mesh across the access hatches.
- Signage is to be erected warning of dangers, flammability of products, slips, no smoking, no mobile phone use, and of designated containment units.
- Signage asking the public to report any spills.

Separation Distance

- Cooking oil should never be mixed with mineral oil and should not be within 6 metres of any gas cage or battery container. See Table 3 for further separation distances.

Handling

- A regular cleaning regime should be in place to prevent slips due to spills.
- Any spills should be cleaned up immediately
- Spill kits and grit should be stockpiled and used when necessary.

Personal Protective Equipment

PPE such as high-visibility clothing, gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites. When dealing with waste oils employees should wear appropriate eye protection and gloves when there is the potential for skin contact.

CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk (see 3.1.2 Fire Safety).

Fire is the main hazard at a hazardous waste CA site because of the potential for staff and visiting members of the public to be exposed to radiated heat, smoke, toxic fumes and missiles when sealed containers such as aerosols heat up. Once started, a fire may then spread to hazardous waste, which can create additional hazards. Every effort must be made to prevent fire through adherence to separation distances, good housekeeping and regular inspections for spills, waste quantities and container integrity.

Guidance on the preparation of a site-specific emergency response procedure is detailed in Attachment 2 to this guidance. CA site managers should meet with the fire service at the CA site so that the firefighters can:

- become familiar with the site layout and storage plan (copies of these should be provided to the fire service)
- become familiar with the location of hydrants or water storage tanks to supply water to fight fires
- review the fire response plan (see EPA guidance)
- review fire-fighting extinguishers for each waste type
- review the firewater retention capacity.

Fire water may be toxic and corrosive and may cause adverse environmental impacts. The EPA's Draft Guidance Note *Requirements for Fire-Water Retention Facilities* gives guidance to operators of industrial activities on the requirements for fire water retention; this guidance will be updated in 2017. The need for fire-water retention at a hazardous waste CA site will depend on the results of an assessment of the risk of environmental pollution associated with contaminated fire water. This assessment may take place during the licensing stage or may be a requirement of the licence itself.

Contaminated fire water collected on site must be characterised to determine the options for proper disposal. The waste operator at EPA-licensed facilities must agree the outlet for disposal with the EPA. The operator should have preliminary agreements in place with final disposal facilities prior to approval of the risk management programme.

Emergency Procedures

- Contain spills promptly using spill kit, sand, straw, sawdust, wood chips, peat, and synthetic absorbent pads, or pillows depending on the size of the spill.
- If a larger spill occurs, prevent run-off to sewers, i.e. by using drain covers.
- Collect any contaminated sorbent and treat as hazardous waste.
- Cleaning regimes can be used to reduce the risk of slips.

In the event of fire:

- Records are to be made available to the emergency services in the event of a fire.
- The selection, number and locations of fire extinguishers should be informed by a risk assessment carried out by site management.

Dangerous Good: No

ADR Hazard Class: Not subject to ADR

Waste Electrical and Electronic Equipment (WEEE)

End-of-life electrical and electronic equipment is included in the scope of the European Union (WEEE) Regulations (S.I. No. 149 of 2014). Under these regulations, free take-back must be made available by retailers to householders when returning WEEE at the end of its useful life. Householders can bring WEEE, free of charge, back to the retailer when they are purchasing a new item of electronic equipment, on a one-for-one, like-for-like basis, or alternatively it can be brought to the local CA site. A wide range of waste equipment is covered by the WEEE Directive 2012/19/EU and for reporting purposes is segregated into 10 categories and this will be reduced to six in 2018.²²

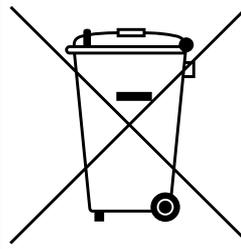


Figure 5. The WEEE symbol.

For the purposes of handling and storage at CA sites, WEEE should be segregated into the following five categories. The storage requirements of each are discussed separately below.

1. WEEE Fluorescent Tubes and CFLs
2. WEEE Fridges and Freezers
3. WEEE Large Household Appliances
4. WEEE Mixed (Small) Household Appliances
5. WEEE Televisions and Monitors.

It should be noted that not all WEEE is hazardous; e.g. cookers and washing machines are non-hazardous, while fridges and freezers are hazardous because of the refrigerant gases contained in them. Other examples of non-hazardous WEEE are household appliances such as kettles, toasters, etc., and these are catered for by LoW Code 20 01 36 discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35. However, WEEE must never be disposed of in general refuse or mixed waste streams, and this is indicated by the crossed-out wheeled bin symbol shown above. The WEEE Directive is designed to encourage and regulate the collection, reuse, recycling and recovery of waste electrical and electronic equipment.

²² As per Article 2(1)(b) of the WEEE Directive, the number of categories of EEE will be reduced to six from 15 August 2018. The six categories are listed in Annex III to the WEEE Directive.

WEEE Fluorescent Tubes and Compact Fluorescent Lamps

LOW Code and Description

20 01 21* fluorescent tubes and other mercury-containing waste



Description

Fluorescent tubes and energy-saving CFLs contain sodium and mercury and may also contain lead, cadmium and other heavy metals. Fluorescent tubes occur as strip lighting, and CFLs exist in many shapes and sizes appropriate to a range of household uses. CFLs can help reduce carbon dioxide emissions because they use only one-fifth to one-quarter of the electricity of ordinary bulbs to generate the same amount of light. As incandescent light bulbs are being phased out, householders and businesses have been switching to fluorescent tubes and CFL bulbs.

Associated Hazards

Fluorescent tubes and CFLs (energy-efficient light bulbs) contain mercury, which, if the bulbs are broken, can be released as a vapour. CFLs, like all fluorescent lamps, contain small amounts of mercury as vapour inside the glass tubing. Mercury is toxic, and short-term exposure to high concentrations of mercury vapour can cause harmful effects on the nervous, digestive and respiratory systems, and on the kidneys. If released to the environment, mercury can change into methyl mercury and accumulate in the aquatic food chain.

Control Measures Required

Record Keeping

CA site staff must maintain the following records for fluorescent tubes and CFLs on site:

- results of daily inspections for container integrity and breakages
- a current inventory that should be used to manage the quantities on site; remove bins when almost full and do not allow bins to overflow.

Storage Requirements

- Tubes and CFLs should be handled carefully and placed in secure, robust containers with a closing lid or door.
- Containers should be labelled to reflect the contents and the hazard.
- Tubes and CFLs should be kept undamaged in suitable storage containers prior to specialist disposal/treatment.
- Do not store fluorescent tubes and/or CFLs outside of containers.
- Do not mix with incandescent light bulbs.
- Leave in packaging if delivered in same.

Separation Distance

Waste fluorescent tubes and CFLs should not be kept within 3 metres of fire extinguishers or household and garden chemicals. See Table 3 for further separation distances.

Handling

- Fluorescent tubes and CFLs should be handled carefully to avoid breakages.
- Erect signage informing users to place lights into containers rather than throwing them.
- Erect signage asking the public to inform CA operatives of breakages/poor housekeeping.

Personal Protective Equipment

CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

- PPE such as high-visibility clothing, gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.
- Appropriate eye protection, gloves and suitable clothing (strong overalls with long sleeves) should be worn when handling fluorescent tubes and CFLs.
- Respiratory protection may be required during major clean-up operations involving broken tubes of CFLs to prevent inhalation of mercury vapour.

Emergency Procedures

- The selection, number and location of fire extinguishers should be informed by the results of a risk assessment of fluorescent tubes, CFLs and the site, and by the safety data sheets.
- Any breakages must be cleared up immediately, using a spill kit to avoid the mercury finding its way into the adjacent ecosystems. Clean-up materials and breakages must be placed in a suitable, sealed container.
- Mercury is non-flammable. Use a fire extinguisher most appropriate to extinguish surrounding fire involving fluorescent tubes and CFLs.

Dangerous Good: Yes (Fluorescent tubes)

ADR Hazard Class: Not subject to ADR

WEEE Fridges and Freezers

LOW Code and Description

20 01 23* discarded equipment containing CFCs

16 02 13* discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12



Description

The majority of fridges and freezers and plug-in air conditioners that reach the waste stream are likely to contain hydrofluorocarbon (HFC) gases (F-gases) as refrigerants or as part of the insulating foam. HFCs are greenhouse gases and are controlled by the EU F-gas Regulation (No. 517 of 2014). Older fridges and freezers may contain ODSs such as CFCs or HCFCs. These are controlled under the EU ODS Regulation (No. 1005 of 2009).

Although the type of gas contained in a unit will be indicated by a plate on the back, it may not always be visible and therefore it is prudent to manage all units as hazardous waste. All waste refrigeration appliances containing ODS or F-gases must be sent to specialist reprocessors.

Associated Hazards

ODSs and F-gases are hazardous to the environment and therefore equipment containing these gases must be treated in an authorised process to ensure safe removal and containment of these gases. Polystyrene can be found in fridges and freezers as an insulator (and is commonly used in packaging material). The pentane within the polystyrene is flammable. Some modern fridges and freezers may use hydrocarbon refrigerants such as isobutene, which is flammable.

Control Measures Required

Record Keeping

CA site management can determine the frequency of inspections and collection required by monitoring the number of fridges and freezers on site. However, a current inventory should be maintained and used to manage quantities on site. Any accidents or near misses, no matter how minor, should be reported to the CA manager immediately.

Storage Requirements

- Units must be free of any contamination, e.g. foodstuff and packaging, when delivered on site.
- Fridges and freezers should be stored on impermeable surfaces.
- Ensure storage area is weather-proofed. Fridge foam that is exposed to sunlight could result in emissions of ODSs or F-gases.
- Erect suitable signage to guide users to storage area.
- A safe system of storage should allow adequate ventilation and have proper access for collection vehicles.

Separation Distance

Fridges and freezers should be stored separately from large household appliances and should not be exposed to ignition sources or direct sunlight. See Table 3 for further separation distances.

Handling

- Ensure degassing of fridges by a qualified contractor.²³
- Use mechanical aids for lifting where possible.
- Ensure appropriate manual handling techniques and safe use of lifting equipment.
- Use barriers (cones, tape, etc.) to create an exclusion zone that restricts public access during loading and unloading.
- Use a spotter to guide loading operations.

Personal Protective Equipment

CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

PPE such as high-visibility clothing, appropriate gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.

Emergency Procedures

The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment of fridges and freezers on the site and by safety data sheets.

Neither ODSs nor F-gases are flammable at ambient temperatures and atmospheric pressure. Newer fridges may contain flammable gases such as isobutene. In the event of fire, dry powder and carbon dioxide fire extinguishers should be used on fires involving WEEE (see Table 3).

Dangerous Good: No

ADR Hazard Class: Not subject to ADR

²³ Training & Qualifications – Certification of Personnel Handling Ozone Depleting Substances (ODS) Fluorinated Greenhouse Gases (F-gases) and Companies Employing Such Persons. EPA. <http://www.epa.ie/air/airenforcement/ozoneltraining/#.Vtb6x01i-70>

WEEE Large Household Appliances

LoW Code and Description

16 02 13* discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12

16 02 14 discarded equipment other than those mentioned in 16 02 09 to 16 02 13

20 01 35* discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components

20 01 36 discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35



Description

Large household appliances include washing machines, dishwashers, dryers, ovens, electric cookers and stoves.

Associated Hazards

WEEE may contain hazardous substances that are harmful to the environment and human health. These include heavy metals (e.g. lead cadmium, mercury), halogenated organic compounds and asbestos. Large household appliances may cause injury during lifting and moving.

Control Measures Required

Record Keeping

CA site staff must maintain a current inventory and use this to manage quantities on site.

Storage Requirements

- WEEE should be stored on an impermeable surface under weatherproof covering to assist in the containment of hazardous materials and fluids.
- WEEE storage containers must be kept closed and locked out of hours.
- Any accidents or near misses, no matter how minor, should be reported to the CA manager immediately.

Separation Distance

Large household appliances must be kept separate from fridges and freezers.

Handling

CA site staff must:

- ensure safe use of lifting equipment when stacking and storing
- ensure appropriate manual handling techniques
- use barriers (cones, tape, etc.) to create an exclusion zone that restricts public access during loading/unloading
- use a spotter to guide loading operations.

Personal Protective Equipment

- CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.
- PPE such as high-visibility clothing, appropriate gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.

Emergency Procedures

The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment of the site and by reference to safety data sheets. Dry powders and carbon dioxide fire extinguishers are the appropriate extinguishers to be used on fires involving WEEE.

Dangerous Good: No

ADR Hazard Class: Not subject to ADR

WEEE Mixed (Small) Household Appliances

LOW Code and Description

16 02 13* discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12

16 02 14 discarded equipment other than those mentioned in 16 02 09 to 16 02 13

20 01 35* discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components

20 01 36 discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35



Description

This category includes microwaves, stereo and audio equipment, kitchen appliances, home entertainment, tools, gardening equipment, IT and computers, desktop printers, telephones, hair care items, toys, heaters, vacuum cleaners, toasters, irons and deep fat fryers.

Associated Hazards

Waste electrical and electronic equipment (WEEE) may contain hazardous substances that are harmful to the environment and human health. These include heavy metals (e.g. lead cadmium, mercury), halogenated organic compounds and asbestos. There is a danger of crush injuries and back strain when lifting and storing WEEE.

Control Measures Required

Record Keeping

- CA site staff must maintain inventory of all WEEE on site and use this to manage quantities on site.
- Any accidents or near misses, no matter how minor, should be reported to the CA manager immediately.

Storage Requirements

WEEE should be stored on an impermeable surface under weatherproof covering to assist in the containment of hazardous materials and fluids. WEEE storage containers must be kept closed and locked during out of hours.

Separation Distance

See Table 3 for separation distances.

Handling

- Ensure safe use of lifting equipment when appropriate.
- Ensure appropriate manual handling techniques.
- Use barriers (cones, tape, etc.) to create an exclusion zone that restricts public access during loading/unloading.
- Use a spotter to check for pedestrians and obstructions and to guide when loading is taking place.
- Ensure that the oil is removed from deep fat fryers prior to acceptance.

Personal Protective Equipment

- CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.
- PPE such as high-visibility clothing, appropriate gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.

Emergency Procedures

The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment of the site and by reference to safety data sheets. Dry powders and carbon dioxide fire extinguishers are the appropriate extinguishers to be used on fires involving WEEE.

Dangerous Good: No*

ADR Hazard Class: Not subject to ADR

*Transport regulations may apply to certain substances such as lithium batteries. Seek advice from a specialist contractor. ADR consignor and other participant duties may apply.

WEEE Televisions and Monitors

LOW Code and Description

16 02 13* discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12

16 02 14 discarded equipment other than those mentioned in 16 02 09 to 16 02 13

20 01 35* discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components

20 01 36 discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35



Description

Cathode ray tubes (CRTs) are included in a range of equipment such as televisions, computer monitors, security monitors and portable televisions. Cathode ray tubes contain leaded glass, heavy metals and phosphorus, which is applied to the inner surface of the tube's screen. The recent trend for larger and wide-screen televisions and monitors has resulted in larger cathode ray tubes and liquid crystal display (LCD) and plasma screen televisions. The popularity of flat-screen televisions that use LCD or plasma screens have resulted in the replacement of CRT televisions and monitors.

LCD televisions contain hazardous materials including antimony, beryllium and chromium; a mercury lamp; plastic shells; and brominated flame retardants. Plasma screens are also made from hazardous materials such as heavy metals and brominated flame retardants. These screens do not pose a risk to the users of equipment if they are not broken, but they do pose an environmental risk when disposed of and must be managed appropriately.

Associated Hazards

CRTs, LCD and plasma screens only present a risk if they are broken. CRTs contain phosphorus and LCDs contain mercury, which is hazardous to humans and the environment. As with fluorescent tubes, this is only a risk if the tube is broken. Lifting and moving these items presents a risk of back strain.

Control Measures Required

Record Keeping

CA site staff must maintain the following records for televisions and monitors on site:

- An inventory should be maintained and used to manage quantities on site.
- Any accidents or near misses, no matter how minor, should be reported to the CA manager immediately.

Storage Requirements

- All screens should be securely shrink wrapped and placed on pallets or alternatively stored in cages to prevent breakages.
- The pallet loads should be stacked in a sensible manner to minimise the risk of breakages.
- Consideration should be given to lowering the height of WEEE containers for items such as televisions, computers, monitors, etc., so that users do not have to lift item over their heads to place in the cage.
- Gates on cages should be latched closed and chained to prevent the gate from swinging open when a large item is placed in the cage.

Separation Distance

Store items with cathode ray tubes away from other wastes.

Handling

- Use mechanical aids for lifting where possible. Ensure safe use of lifting equipment when stacking and storing.
- Use barriers (cones, tape, etc.) to create an exclusion zone that restricts public access during loading/unloading.
- Do not “stack” televisions outside the cages as unstable piles may result in breakage.
- Do not break cathode ray tubes. Take care not to drop televisions and monitors that contain tubes.
- Consider wearing a face mask when loading WEEE on account of potential breakages and disturbance of dusts etc., which may contain hazardous materials and asbestos.
- Use a spotter to check for pedestrians/obstructions and to guide loading operations.
- Full PPE, including cut-resistant gloves, should be worn when handling WEEE.
- Personal Protective Equipment
- PPE such as high-visibility clothing, appropriate gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites. Cut-resistant gloves should worn when handling WEEE.
- CA site management must make an assessment of the hazards at the CA site in order to identify the correct type of PPE to be provided and to ensure that the PPE is appropriate to the risk.

Emergency Procedures

- Do not break LCDs or cathode ray tubes. Take all care not to drop televisions and monitors that contain tubes. Any breakages must be cleared up immediately and all debris should be removed.
- The selection, number and locations of fire extinguishers should be informed by the results of a risk assessment and by safety data sheets. In the event of fire, dry powder or carbon dioxide fire extinguishers should be used on fires involving WEEE.

Dangerous Good: No

ADR Hazard Class: Not subject to ADR

Transport regulations may apply to certain substances such as lithium batteries. Seek advice from a specialist contractor. ADR consignor and other participant duties may apply.

Planning for Household Hazardous Waste

at Civic Amenity Sites



Section 2: Planning for Household Hazardous Waste at Civic Amenity Sites

Introducing household hazardous waste to or extending the range of hazardous wastes types accepted at a civic amenity (CA) site requires careful planning to protect the environment and the health and safety of the site's staff and users. Although the quantities of household hazardous wastes that may be brought to a CA site are small, the accumulation on site presents a set of hazards different from those at a site accepting non-hazardous waste, and these must be considered and managed.

Planning should include a waste acceptance policy, a site layout plan, a communication plan, a staff training plan, a revision of the site's safety statement, and risk assessments for the full range of hazardous wastes accepted on site (see Section 3: Managing Safety at Hazardous Waste Civic Amenity Sites).

The limits of the site's authorisation must also be considered. It should be noted that national regulations allow household hazardous waste to be accepted under a certificate of registration for storage at a CA facility, recycling centre or central collection point pending onward transport and submission to recovery at an authorised facility.²⁴

In order to accept household hazardous waste, site management should detail:

- a waste acceptance policy and charging scheme
- a site layout plan that addresses the separation distances and storage requirements to safely segregate hazardous waste types
- a communication plan for the site's staff and customers
- a staff training plan
- risk assessments, site safety statement, emergency response procedure and reporting procedures for accidents and incidents (see Section 3: Managing Safety at Hazardous Waste Civic Amenity Sites)
- procedures for accepting and processing waste through the site (see Section 4: Processing Household Hazardous Waste at a Civic Amenity Site).

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2.1 Waste Acceptance Policy

The CA site management should assess the information in this guidance in combination with the specific requirements mentioned in the CA site's licence,²⁵ facility permit or certificate of registration²⁶ and any other relevant conditions particular to the CA site, in order to develop a waste acceptance policy. The conditions laid out in these authorisations will detail, among other things, the quantities and types of waste that may be accepted, and storage and other requirements that are necessary to prevent environmental pollution.

The waste acceptance policy should detail:

- the types of household hazardous waste that are accepted and not accepted
- specific arrangements for the acceptance of hazardous wastes

²⁴ Class No. 1 of Third Schedule: Part II of Waste Management (Facility Permit And Registration) (Amendment) Regulations 2008.

²⁵ Issued by the EPA under the Waste Management (Licensing) Regulations 2004 to 2011.

²⁶ Issued under the Waste Management Facility Permit (Facility Permit & Registration) Regulations 2007 to 2013.

- limits on the quantity of waste that can be accepted, which will help to control trade abuse of a CA site's hazardous waste service by specifying household hazardous waste only or by setting entry costs that encourage traders to use a commercial service
- the members of the public that may use the site, e.g. CA sites may accept household hazardous waste from householders, small business owners and small farmers but not from larger commercial organisations.

2.1.1 Charges for Hazardous Waste

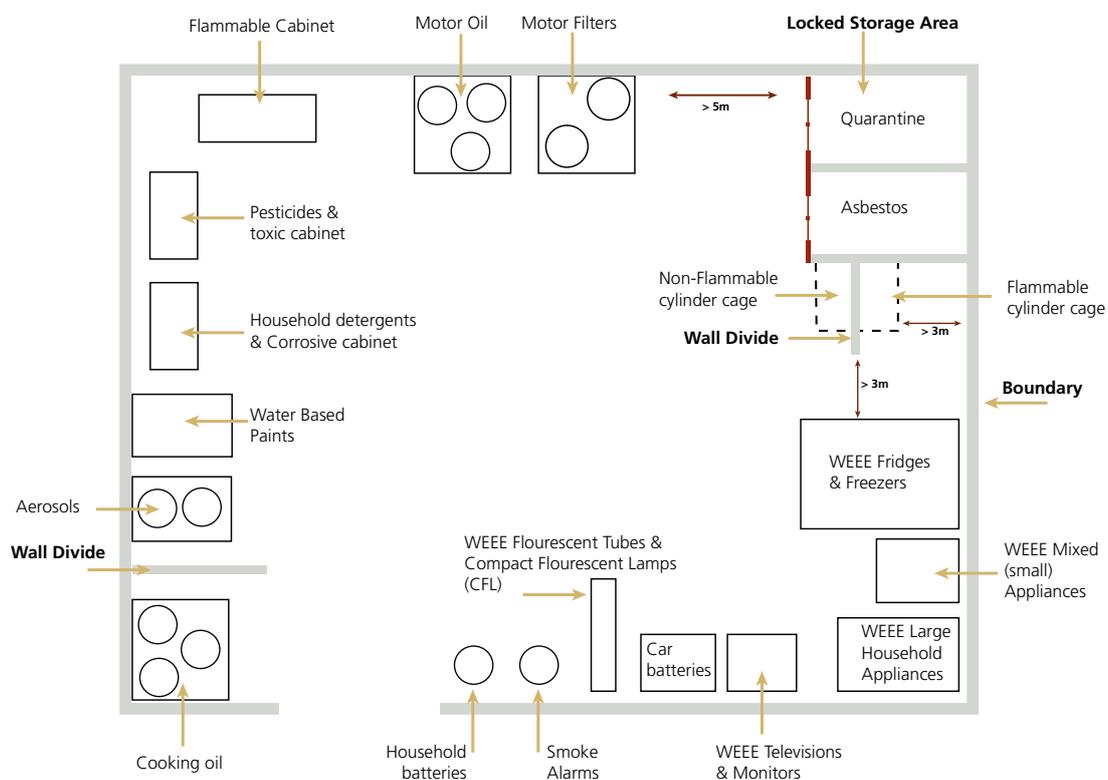
Guidance on charging schemes is provided by the various charging schemes applied by local authority CA sites currently operating. A survey of such sites reveals that the public is charged between €4 and €15 per car load of waste. An increasing scale often applies for larger vehicles. Household hazardous waste is sometimes charged separately. Waste electrical and electronic equipment (WEEE) and batteries must always be accepted free of charge.

The Farm Hazardous Waste Collection Scheme operated by the EPA, Teagasc, the Department of Agriculture, Food and the Marine, the Department of Communications, Climate Action and Environment, the WEEE compliance schemes and a number of local authorities offers further guidance on charges. A charge of €2 per kilo was applied to the range of other hazardous waste types. These included waste brake fluids, coolants, antifreeze, oily containers, oily filters, rags and cloths, empty grease guns, paints (including solvent- and chromate-based paints), unused, deregulated pesticides and biocides (including herbicides, fungicides and insecticides), veterinary products (including tubes, syringes, empty dose packs, empty sheep dip packs and used needles), aerosol cans and empty silicone guns. Again, there was no charge for engine oil, hydraulic oil, WEEE or batteries.

2.2 Site Layout Plan

The site's layout plan should:

- include the location of the hazardous waste storage area within the CA site; this should be as remote as possible from other waste storage areas and be of a suitable size that meets the requirements for appropriate containers and safe movement of traffic
- include the location of the hazardous waste inspection/quarantine area and procedures for dealing with unacceptable wastes (see section 4.4 Procedure for Unacceptable Wastes)
- ensure that the hazardous waste storage area has impermeable paving and a sealed drainage system to protect the environment from spills; hardstand should be checked and repaired when necessary consider the separation distances required to safely store the various hazardous waste types likely to arise on site. A sample layout plan for a hazardous waste storage area is included in Figure 6. This takes into account the separation distances necessary to safely segregate the types of hazardous waste likely to arise on a CA site and the separation distances detailed in Tables 3 and 4.



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Figure 6. Sample layout plan for hazardous waste storage area at a CA site.

2.2.1 Separation Distance

Incompatible wastes must be segregated according to hazard classes. Wastes of similar hazard groups should be stored together and separated from wastes of other hazard groups.²⁷

This will prevent adverse reactions if containers break and contents mix in the storage areas. Adequate separation distances and good housekeeping will reduce adverse reactions such as fire and prevent an escalation in the seriousness of any fires.

²⁷ Storage of Hazardous Chemicals in Laboratories. HSE, 2012. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/Storage%20of%20Hazardous%20Chemicals%20Information%20Sheet.pdf

Low-risk wastes such as detergents and washing powders can be stored together. Hazardous wastes including garden products and household products, paints, adhesives and motoring products may require further segregation.

High-risk chemicals such as those that are corrosive, toxic, flammable or oxidising must be segregated according to the hazard classes in Table 4. For example, flammable liquids such as solvent-based paints must be separated from pesticides that are toxic. The hazards of the wastes can be identified on the labels of the waste containers or in section 2 and section 14 of the waste's safety data sheet (see section 4.2).

Some chemical wastes will have more than one hazard class. For example, if a waste is both flammable and corrosive, it would be most appropriate for it to be stored with other flammables. However, if a waste is both flammable and very toxic then other factors need to be considered before selecting the appropriate storage area, such as the physical properties of the waste and the quantity being stored. Further advice should be sought from the CA site's Dangerous Goods Safety Advisor (DGSA) for the segregation of such chemicals.

There will always be some wastes that will not fit neatly in one category or another, but with a proper identification of the hazard class and assessment of consequences of an accident, most wastes can be assigned to the appropriate storage areas. In general, the separation of corrosive wastes from other substances, waste pesticides from flammable liquids and all flammables from buildings and combustible materials will go some way to ensuring that incompatible substances are not stored together.²⁸

A guide to adequate separation distances is included in Table 3. This table takes into account the requirements for separation distances in the hazard class according to the Classification, Labelling and Packaging (CLP) Regulation, UK Guidance HSG71-Chemical Warehousing: The Storage of Packaged Dangerous Goods, the ADR hazard class, information on safety data sheets and the risks presented by small quantities of packaged hazardous wastes likely to arise at CA sites.

Further segregation requirements for higher risk household and garden chemicals that may be flammable, oxidising, toxic or corrosive are included in Table 4. This table considers the hazard class according to the CLP Regulation, UK Guidance HSG71-Chemical Warehousing: The Storage of Packaged Dangerous Goods, the ADR hazard class and the risks presented by the quantities of packaged hazardous waste that arise at CA sites.

These tables, however, do not take into account the incompatibilities of all waste types in each category. The CA site's DGSA will be able to provide further advice.

Separation distance requirements also apply to internal bunding within storage containers and to drip and spill trays in storage containers. Separate bunds and drip and spill trays should be used for different types of waste so that spills do not mix.

28 Chemical Warehousing – The Storage of Packaged Dangerous Substances. HSE, 2009a. <http://www.hse.gov.uk/pubns/books/hsg71.htm>

Table 3. Separation distances by waste type

Hazardous Waste	Aerosols	Asbestos Containing Material	Automotive batteries	Portable/ household batteries	Gas cylinders - flammable gas	Non-Flammable Gas cylinders Fire Extinguishers	Garden chemicals i.e. pesticides	Household chemicals	Motoring products Waste Oils Waste oil Filters	Paints and related DIY products	Cooking Oil Vegetable Oil	WEEE Fluorescent Tubes & CFLs Fridge and Freezers Household Appliances Smoke alarms	Combustible. Non-hazardous waste eg. Paper /textiles.
Aerosols	Teal	Teal	Red	Teal	Red	Yellow	Red	Red	Red	Red	Red	Teal	Yellow
Asbestos Containing Material	Teal	Teal	Teal	Teal	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Teal	Teal	Teal
Automotive batteries	Red	Teal	Teal	Yellow	Red	Red	Red	Red	Red	Red	Red	Teal	Teal
Portable/ household batteries	Teal	Teal	Yellow	Teal	Red	Red	Red	Red	Red	Red	Red	Teal	Teal
Gas cylinders - Flammable gas	Red	Yellow	Red	Red	Teal	Yellow	Red	Red	Red	Red	Red	Yellow	Yellow
Non Flammable Gas cylinders Fire Extinguishers	Yellow	Yellow	Red	Red	Yellow	Blue	Red	Red	Red	Red	Red	Yellow	Yellow
Garden chemicals i.e. Pesticides	Red	Yellow	Red	Red	Red	Red	Blue	Blue	Blue	Blue	Yellow	Yellow	Yellow
Household chemicals	Red	Yellow	Red	Red	Red	Red	Blue	Blue	Blue	Blue	Yellow	Yellow	Yellow
Motoring products Waste oils Waste oil filters	Red	Yellow	Red	Red	Red	Red	Blue	Blue	Blue	Blue	Yellow	Yellow	Yellow
Paints and related DIY products	Red	Yellow	Red	Red	Red	Red	Blue	Blue	Blue	Blue	Yellow	Yellow	Yellow
Cooking oil Vegetable oil	Red	Teal	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Teal	Teal	Teal
WEEE Fluorescent Tubes & CFLs Fridge and Freezers Household Appliances Smoke alarms	Teal	Teal	Teal	Teal	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Teal	Teal	Teal
Combustible. Non-hazardous waste eg. Paper /textiles.	Yellow	Teal	Teal	Teal	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Teal	Teal	Teal

-  Separation may not be necessary. Note that some types of waste in the same group may not be compatible.
-  3 metre separation / brick wall / separate cabinet.
-  6 metre separation / brick wall / separate cabinet.
-  Refer to Table 4 for chemical segregation.

Table 4. Segregation of Hazardous Chemical Waste

Hazard Pictogram
(see Section 4.2)

ADR Hazard Class
(see Section 4.5)

														
														
		Flammable Gases	Non Toxic, Non Flammable Gases	Toxic Gases	Flammable liquids	Flammable solids	Spontaneously combustible	Dangerous when wet	Oxidizing liquids	Organic peroxides	Toxic substances	Corrosive (acids)	Corrosive (alkalis)	Miscellaneous
		Flammable Gases	X											X
		Non Toxic, Non Flammable Gases		X		X		X	X		X			X
		Toxic Gases			X				X		X			X
		Flammable liquids			X									X
		Flammable solids		X		X						X	X	X
		Spontaneously combustible					X							X
		Dangerous when wet		X					X		X	X	X	X
		Oxidizing liquids		X	X				X					X
		Organic peroxides								X				X
		Toxic substances		X	X			X			X	X	X	X
		Corrosive (acids)				X		X			X	X		X
		Corrosive (alkalis)				X		X			X		X	X
		Miscellaneous	X	X	X	X	X	X	X	X	X	X	X	X

X Separation may not be necessary. Note some types of chemicals in the same class may react violently.

 3 metre separation / brick wall / separate cabinet.

 6 metre separation / brick wall / separate cabinet.

 Separate building or outdoor cabinet

2.3 Communication and Awareness

The first step to increasing the quality and capture of hazardous waste at CA sites is to educate householders and small businesses to identify hazardous waste and to segregate it from general waste and to bring it to a CA site.

Websites, leaflets and other media should be used to promote the following list of dos and don'ts to the public:

- Check the list of hazardous wastes that are accepted and not accepted at your CA site.
- Always leave hazardous materials in their original containers.
- Ensure that hazardous waste is stored separately from general waste in a cool, dry place, out of reach of children or pets.
- Never pour hazardous liquids down the sink or drain.
- Never mix waste types; wastes with different characteristics such as oxidising, flammable, corrosive and toxic should be stored separately prior to bringing them to the CA site.
- Phone ahead when bringing difficult wastes (asbestos or pesticides).

Sites that become authorised to accept asbestos-containing materials must ensure that the public phones in advance of bringing asbestos to the site to confirm that sufficient storage is available and to receive instructions on how it should be presented and transported to the site.

CA sites should also provide information on the reprocessing, treatment and disposal of hazardous materials brought to the site. This encourages members of the public to see the benefit of disposing of these materials in an appropriate manner.



2.3.1 Preventing Hazardous Waste

According to the waste hierarchy, the most environmentally sustainable way to manage waste is to prevent it from arising in the first place. National Hazardous Waste Management Plan 2014–2020 promotes the reduction in the generation of hazardous waste in targeted sectors of industry and society.

WEEE is one of the fastest growing waste streams in the EU. An estimated 12 million tonnes of WEEE will arise per annum by 2029.²⁹ The EU Target for the collection of WEEE is 4 kg per person per year. Between 2008 and 2013 Ireland exceeded this target, which means that pollution from hazardous components is avoided, valuable components can be used again in new products, and there will be less mining of raw materials. However, achieving the target twice and more may also be an indicator of unsustainable consumption of electrical equipment. Currently, there is no treatment for pesticides in the public water system in Ireland. Therefore, pesticides that make their way into the water system can arrive at the tap. Therefore, it is important to prevent



Figure 7. Guide to chemical-free gardening

²⁹ WEEE Statistics for Ireland. EPA, 2016. <http://www.wastereport.ie>

chemicals from entering water sources, or better still to use non-chemical control methods, e.g. cutting, drainage and sward improvement to manage weeds.³⁰ Information leaflets and guidance on the safe use of pesticides is available on the EPA website.³¹

Preventing hazardous waste requires society to look for ways to avoid excessive consumption, for example through buying only what is needed, by substituting a hazardous product for a less toxic alternative and by engaging in sharing of goods, trade-ins, exchange or reuse activities.

A useful resource to assist in communicating this message is *A Householders Guide to Hazardous Waste Prevention*.³² This booklet, published in 2010, contains tips and advice for householders on the correct use and disposal of everyday hazardous products. The information in this guide was prepared by the Regional Waste Management Office (RWMO) for Limerick, Clare and Kerry, working on waste prevention by participating in the Local Authority Prevention Network (LAPN) and working in partnership with the region’s local authorities. A recent guidance for householders on paint is also available. The guide aims to assist householders to avoid buying too much paint and ensuring the proper management of any waste paint arising.³³

2.4 Staff Training

CA site staff members are the first point of contact with the public, and are therefore well placed to inform and educate visitors to the site. For this reason, the staff should be trained in the local authority’s waste prevention objectives as well as in the handling and storage of hazardous waste so that they can pass this information on to the visiting public.

Staff efficiency helps with the site’s performance, in generating a safe and efficient atmosphere and in improving the capture of household hazardous waste.³⁴ The site’s efficiency is affected by staff motivation and staff understanding of recycling and relevant issues. Training is vital to improve these issues. Training will also ensure improved environmental protection and the health and safety of staff and visitors.

There should be a regular review of training requirements and repeat training should be carried out as required and when new staff members begin working at the site. All training and training exercises should be logged and attendance records should be held on site.

At a minimum, training should cover the following topics:

- local authority’s waste prevention objectives
- the CA site’s waste acceptance policy
- load inspections and recognition of hazardous waste
- waste identification, i.e. hazardous material symbols, packaging and labelling
- classes of hazardous substances, their hazards and compatibilities
- rules for the safe handling of all hazardous waste types
- asbestos awareness training

30 Greener Gardening – Your Guide To Chemical-free Affordable Gardening. EPA. [http://www.epa.ie/pubs/reports/waste/wpp/Greener_Gardening_\(web\).pdf](http://www.epa.ie/pubs/reports/waste/wpp/Greener_Gardening_(web).pdf)

31 Protecting Drinking Water from Pesticides – Leaflet Series. EPA. <http://www.epa.ie/water/dwl/protectingdrinkingwatersupplies/>

32 Regional Waste Management Office, 2010. *A Householders Guide to Hazardous Waste Prevention*. EPA, 2010. Available online: <https://www.epa.ie/pubs/reports/waste/wpp/ahouseholdersguidetohazardouswasteprevention.html>

33 Are you a Paint Squirrel? Southern Waste Region. <http://southernwasteregion.ie/content/are-you-paint-squirrel/>

34 Household Waste Recycling Centre Guide. WRAP, 2012. http://www.wrap.org.uk/sites/files/wrap/INH0449_HWRC_Guide_%20final.pdf

- handling of clinical wastes in emergency situations when it arises on site
- safe storage
- dangerous goods transport regulations
- operating the store and dealing with customer queries
- site safety procedures, safe systems of work
- proper use of PPE
- hand hygiene
- housekeeping
- spills response training
- emergency procedures
- fire safety staff awareness and training
- recognition and avoidance of violent situations
- certified first aid course.

Further external or internal training is also required in

- manual handling
- safe loading and securing for road transport³⁵
- Construction Skills Certification Scheme for staff using mobile elevated work platforms such as a scissors lift or boom lift
- harness training
- working at height
- control of vehicles entering and exiting, parking and manoeuvring at the site
- operation of site vehicles, machinery, tools and communication equipment.

Information on waste identification, such as on colour marking of gas cylinders, labelling of containers and packaging, must be kept on site and be readily available to employees for reference. Displaying such identification on notice boards is good practice.

35 European Best Practice Guidelines on Cargo Securing for Road Transport. https://ec.europa.eu/transport/road_safety/topics/vehicles/cargo_securing_loads_en

Managing Safety at Hazardous Waste

Civic Amenity Sites



Section 3: Managing Safety at Hazardous Waste Civic Amenity Sites

Managing safety at a hazardous waste civic amenity (CA) site is achieved by looking at the tasks carried out on site and recognising the risks involved in these tasks; this process is known as risk assessment.

A CA site accepting hazardous waste must have:

- risk assessments for all hazards on site
- emergency response procedures (ERPs) for any foreseeable accidents and emergencies
- a safety statement, which is a written document that specifies how health and safety is going to be managed at the site
- procedures for the reporting of accidents and incidents on site

3.1 Risk Assessment

In accordance with Section 19 of the Safety, Health and Welfare at Work Act, 2005, a risk assessment must be carried out for each CA site on an annual basis and/or:

- when circumstances at the facility change the risk sufficiently to affect employee health and safety
- whenever existing storage or collection arrangements for hazardous waste material are modified
- following any incidents or near misses.

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Individual risk assessments should be conducted by a competent person (as defined in the 2005 Act) for all waste types and activities likely to arise on site. Assistance can be found on www.BeSmart.ie,³⁶ a tool developed by the Health and Safety Authority (HSA) to help organisations prepare risk assessments and a safety statement.

3.1.1 Risk Assessment Exemplars

Each CA site will have conditions and characteristics that make it unique. For this reason, site-specific risk assessments must be carried out to identify the risks and hazards at each site, and the methods of reducing those risks.

Attachment 1 describes the process of risk assessment and provides a risk assessment exemplar. A complete set of risk assessment exemplars for all of the hazardous waste types listed in Section 1 and for some of the known hazards of operations at a CA site is available at www.hazardouswaste.ie:

- fire at a CA site
- manual handling
- slips, trips and falls
- vehicle movements
- loading and unloading of goods and materials
- workplace vehicle safety
- work at height

³⁶ BeSMART.ie – Business electronic Safety Management And Risk Assessment Tool. HSA, 2011. <http://www.besmart.ie/>

- machinery safety
- lone working
- violent/aggressive behaviour

These are not examples to be used as risk assessments in their own right; they are to be used to assist with the development site-specific risk assessments.

3.1.2 Fire Safety

Fire is the main hazard at a hazardous waste CA site because of the potential for staff and visiting members of the public to be exposed to radiated heat, smoke, toxic fumes and missiles when sealed containers such as aerosols heat up. Once started, a fire may then spread to hazardous waste, which can create additional hazards. Every effort must be made to prevent fire through adherence to separation distances, good housekeeping and regular inspections for spills, waste quantities and container integrity.

Guidance on the preparation of a site-specific ERP is detailed in Attachment 2 to this guidance. CA site managers should meet with the fire service at the CA site so that the firefighters can:

- become familiar with the site layout and storage plan (copies of these should be provided to the fire service)
- become familiar with the location of hydrants or water storage tanks to supply water to fight fires
- review the fire response plan, see EPA guidance³⁷
- review fire-fighting extinguishers for each waste type
- review the fire-water retention capacity

Fire water may be toxic and corrosive and may cause adverse environmental impacts. The EPA's Draft Guidance Note *Requirements for Fire-water Retention Facilities* gives guidance to operators of industrial activities on the requirements for fire-water retention,³⁸ and this guidance will be updated in 2017. The need for fire-water retention at a hazardous waste CA site will depend on the results of an assessment of the risk of environmental pollution associated with contaminated fire water. This assessment may take place during the licensing stage or may be a requirement of the licence itself.

Contaminated fire water collected on site must be characterised to determine the options for proper disposal. The waste operator at EPA-licensed facilities must agree the outlet for disposal with the EPA. The operator should have preliminary agreements in place with final disposal facilities prior to approval of the risk management programme.

37 Guidance Note: Fire Safety At Non-hazardous Waste Transfer Stations. EPA, 2013. <https://www.epa.ie/pubs/reports/waste/guidanceonfiresafetyatnonhazardouswastetransferstations/Fire%20Safety%20at%20Non%20Hazardous%20Waste%20Transfer%20Stations.pdf>

38 Fire-Water Retention Facilities. EPA, 1995. <https://www.epa.ie/pubs/advice/licensee/Draft%20firewater%20retention.pdf>

3.1.3 Personal Protective Equipment

Personal protective equipment (PPE) is only ever a backup to all other control measures identified in the risk assessment process detailed in Section 3: Managing Safety at Hazardous Waste Civic Amenity Sites. PPE is a last resort or a support to other control measures (see Figure 9). The HSA has produced a comprehensive guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007, and Chapter 3 of Part 2 of this deals with PPE.³⁹

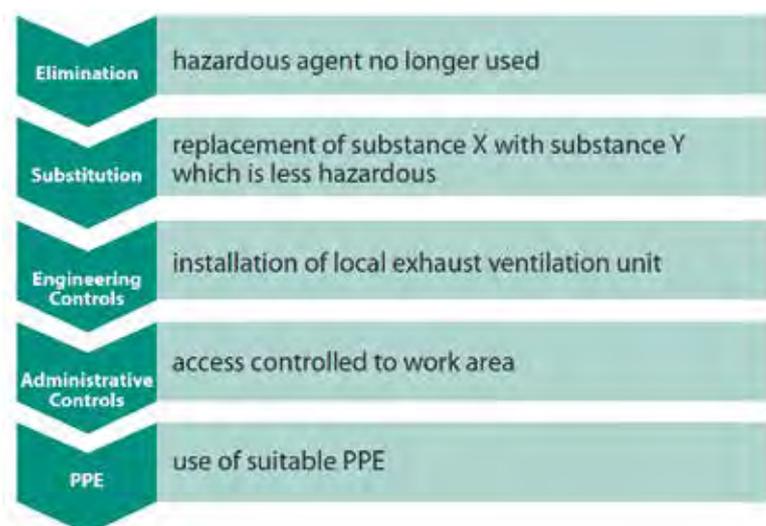


Figure 8. The hierarchy of controls (reproduced from *A Guide to Non-respiratory PPE for use with Chemical Agents in the Workplace*⁴⁰).

Care must be exercised in selecting PPE, as certain types give reasonably high levels of protection, while others, which may appear almost the same, give relatively low levels of protection. The level of risk must be assessed so that the performance required of the PPE can be determined. Once the correct PPE has been identified, CA site staff should be supplied with appropriate and correctly fitting PPE that is adequately maintained and staff should be trained in its use.

Equipment manufacturers and suppliers can often advise on the different types of PPE available and how suitable they are for different tasks. Safety data sheets for the various hazardous waste types or manufacturers' catalogues may contain useful information to assist in identifying the most suitable type of PPE. It may be necessary in difficult cases to obtain advice from specialist sources.



Figure 9. CE Mark

³⁹ Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007. Chapter 3 of Part 2: Personal Protective Equipment. HSA, 2007. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Retail/Gen_Apps_PPE.pdf

⁴⁰ A Guide to Non-Respiratory Personal Protective Equipment (PPE) for use with Chemical Agents in the Workplace. HSA, 2015. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/A_Guide_to_Non-Respiratory_Personal_Protective_Equipment_PPE_for_use_with_Chemical_Agents_in_the_Workplace.pdf

CA site managers should ensure that any PPE bought for staff is “CE” marked and complies with the requirements of the European Communities (PPE) Regulations 1993, which require PPE to have the appropriate CE mark. The CE marking signifies that the PPE satisfies certain basic health and safety requirements. It is recommended that a site-specific PPE selection chart is developed for each CA site.

Protective footwear should be worn at all times on site: boots are preferred to shoes, especially on uneven ground, in order to support and protect the ankles and to reduce the risk of twisted ankles, e.g. when accidentally walking on spills. Footwear should comply with BS EN 345. Footwear appropriate to the hazard presented and with appropriate physical protection and slip-resistant properties should be worn, to prevent injuries.

Protective gloves should be worn at all times because staff members are involved in lifting and storing a range of objects and hazardous materials during the course of their work. CA site management must assess the risk of all hazards and involve staff in the selection of appropriate protective gloves. It is important to involve staff, because if the material of their gloves is too thick or stiff, they may decide not to wear them. Protective gloves are available in a wide range of natural and synthetic materials; however, there is no single glove material that is able to provide unlimited resistance to any individual or combination of chemical agents, hence the need for risk assessments of each hazardous waste type on site.

Chemical Group	Glove Material					
	Natural Rubber	Nitrile Rubber	Neoprene TM	PVC	Butyl	Vitron TM
Water miscible substances Weak acids/alkalis	✓	✓	✓	✓	—	—
Oils	—	✓	—	—	—	—
Chlorinated hydrocarbons	—	—	—	—	—	✓
Aromatic solvents	—	—	—	—	—	✓
Aliphatic solvents	—	✓	—	—	—	✓
Strong acids	—	—	—	—	✓	—
Strong alkalis	—	—	✓	—	—	—
PCBs	—	—	—	—	—	✓

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Figure 11. The most suitable glove materials to protect wearers from exposure to a range of chemical groups (www.hse.gov.uk).

Protective clothing must be worn by all staff. Trousers offer better protection than shorts, which are inappropriate for working with waste. Cut-resistant trousers may be needed wherever there is a risk of cuts to the legs. High-visibility clothing should be worn at all times and gloves giving adequate protection should be worn. The CA site’s dress code should state that necklaces, ties and scarves should not be worn because of the risk of entanglement.

Other PPE such as helmets, eye protection, ear defenders and respiratory protection may be needed depending on the tasks being carried out, and these are specified in Section 1, which lists the hazards and control measures for each hazardous waste type. The site-specific risk assessment will inform the selection of appropriate PPE for the various tasks at CA sites.

3.2 Emergency Response Procedures

Operators of CA sites are required to protect employees and the visiting public from risks to their safety from fires, explosions and similar events. ERPs must be drawn up for any foreseeable accidents and emergencies at the CA site and employees should be competent in operating and following these plans.

The purpose of the ERP is to present appropriate actions to ensure the health and safety of employees and visitors, and that damage to property and the environment is minimised. The ERP should describe the actions to be taken in the event of a site emergency and should be practised, i.e. an ERP drill carried out, regularly.



It is important that the emergency services are familiar with the site prior to any emergency. The CA site manager should proactively contact the emergency services and invite them to the site for familiarisation tours and to discuss the site's storage plan and emergency plans and procedures. It is recommended that contact is maintained with the local emergency services to apprise them of the ERP in place on the site.

A copy of the site storage plan, ERPs and an up-to-date inventory of all hazardous waste should be kept in the site office. If the site office is not close to the gate, a copy of the site storage plan should be kept in a box at the gate that is available to the emergency services to assist them in dealing with emergencies at the site.

Although there are similarities in all CA sites, no two are exactly the same; therefore all ERPs must be site specific. Attachment 2 to this guidance, Emergency Response Procedure Exemplar, which is available at www.hazardouswaste.ie, provides a sample ERP that will assist CA site managers in the preparation of a site-specific ERP.

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3.3 Site Safety Statement

A safety statement is a written document that specifies how health and safety is to be managed at the site. The HSA website⁴¹ provides further guidance on the preparation of a site safety statement, which is mandatory under the Safety, Health and Welfare at Work Act 2005. The statement should be based on the identification of the hazards and the risk assessments carried out under Section 19. It must:

- specify how the health and safety of all employees will be secured and managed
- specify the hazards identified and risks assessed
- give details of how the employer is going to manage his or her safety and health responsibilities, including a commitment to comply with legal obligations, the protective and preventive measures taken, the resources provided for health and safety at the workplace and the arrangements used to fulfil these responsibilities
- include the plans and procedures to be used in the event of an emergency or serious danger
- specify the duties of employees, including the cooperation required from them on health and safety matters

- include the names and job titles of people appointed to be responsible for health and safety or for performing the tasks set out in the statement
- contain the arrangements made for appointing safety representatives, and for consulting with and the participation by employees on safety and health matters, including the names of the safety representatives and the members of the safety committee, if appointed
- be written in a form, manner and language that will be understood by all
- include a review mechanism
- have regard to the relevant safety and health legislation.

It is of particular relevance to CA sites to

- identify which dangerous substances are likely to be handled and the fire and explosion risks
- put control measures in place to either remove those risks or, where this is not possible, control them
- put controls in place to reduce the effects of any incidents involving dangerous substances
- prepare plans and procedures to deal with accidents, incidents and emergencies involving dangerous substances
- make sure employees are properly informed about and trained to control or deal with the risks from dangerous substances
- identify and classify areas of the workplace where explosive atmospheres may occur and avoid ignition sources (from unprotected equipment, for example) in those areas.

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3.4 Reporting Procedures for Accidents and Incidents

All incidents must be reported on the site's incident log and emergency report form. These reports should be circulated to the appropriate departments of the local authority responsible for the CA site. The EPA should be notified in line with the conditions of the site's authorisation.

General injuries involving CA site employees must be notified to the HSA. Accidents where a person is injured at a place of work and cannot perform their normal work for more than 3 consecutive days, not including the day of the accident, are reportable. If a member of the public is injured and requires medical treatment, the incident must be reported to the HSA. For further detail, see the accident reporting section of the HSA website.⁴²

Attachment 3 provides an exemplar procedure for the reporting of accidents and incidents that can be used to inform the development of a site-specific procedure for the reporting of accidents and incidents.

42 Accident Reporting. HSA Website. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Safety_and_Health_Management/Guidance_on_the_Safety_Health_and_Welfare_at_Work/Reporting_of_Accidents_and_Dangerous_Occurrences_Regulations_2016.html

Processing Household Hazardous Waste

at a Civic Amenity Site



Section 4: Processing Household Hazardous Waste at a Civic Amenity Site

Detailed procedures for the flow of hazardous waste through the site from reception, identification, handling and storage to shipment off site must be developed for the site. This process is illustrated in Figure 13.

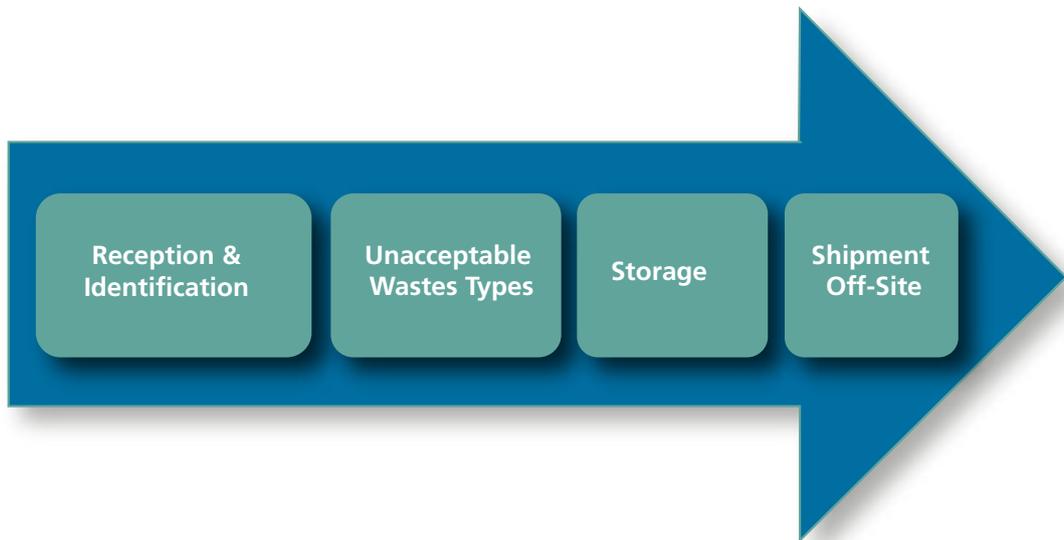


Figure 13. Processing household hazardous waste through a civic amenity site.

4.1 Reception

It is the role of the site manager and site staff to ensure that hazardous waste is accepted and stored in a manner that does not pose a risk to human health and the environment.

Ideally, site staff should meet and greet the public bringing hazardous waste to the site. This will ensure that hazardous waste is not allowed into the hazardous waste storage before meeting site staff. On account of the nature of household hazardous waste, identification of the waste will be obvious in most cases, through questioning the holder of the waste and physically inspecting the waste and any product labels.

If waste is presented in containers that are fragile or leaking, the container and the contents should be placed in a suitable United Nations (UN) type-approved sealed screw-top plastic container (suitable containers should be available on site). Only one hazardous waste item should be placed in each of these containers to avoid mixing of chemicals.

If anything unusual requiring further inspection is noted, it should be directed to the site's waste inspection/quarantine area for further inspection. Site staff can then contact the site manager and the site's dangerous goods safety advisor (DGSA) if necessary. If at this stage the civic amenity (CA) site manager decides that further testing or inspection is needed, the waste can be rejected. If it is rejected, the holder must be directed to ensure that it is disposed of appropriately, see section 4.4 Procedure for Unacceptable Wastes.

If it is not possible to meet and greet each person arriving at the site, clear signage should provide directions to the correct storage container and also encourage the public to ask for staff assistance. CA staff should be ready to approach members of the public who appear to be preparing to deposit hazardous waste items in incorrect storage areas. Guidance should be offered

on appropriate disposal on site, or site staff may accept the material (e.g. lead–acid batteries, flammable chemicals) where it would not be appropriate for the public to access storage safes or facilities.

4.2 Identification

It is important to identify the hazard class of a waste brought to the site promptly because incompatible wastes should be stored separately to reduce the risk of adverse interactions. Although identification and designation of a hazard class should be obvious for most types of household hazardous waste, assistance may be sought from the waste holder, the product label and the safety data sheet. It is unlikely that a hazardous waste will be presented with a safety data sheet; however, this can be obtained from the websites of manufacturers.

Correct identification and prompt storage of waste will be assisted if staff members are familiar with:

- the site’s waste acceptance policy
- hazardous product labels
- safety data sheets
- the hazardous waste types likely to arise (see Section 1: Guidelines for Specific Hazardous Wastes)
- the site storage plan.

A decision must then be made as to which container is most appropriate for each individual waste.

66 | 4.2.1 Hazardous Product Labels

Labels on hazardous products provide information about the hazardous characteristics of a product, and will be useful to site staff in identifying the type of waste and the hazards that it may present (see Figure 14). According to the Classification, Labelling and Packaging (CLP) Regulation (EC) No. 1272/2008,⁴³ all hazardous chemicals (substances and mixtures) placed on the market must now be classified, labelled and packaged according to CLP requirements.⁴⁴ Information about the hazards of a substance must be provided via the label on the packaging, which must include a pictogram signal word, hazard and precautionary statements, and the provision of safety data sheets. See Figure 14. Example of a hazard label (HSA, 2014).

43 Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:353:0001:1355:en:PDF>

44 Hazard Labelling & Packaging According to the CLP Regulation. HSA, 2014. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/CLP_info_sheet.pdf

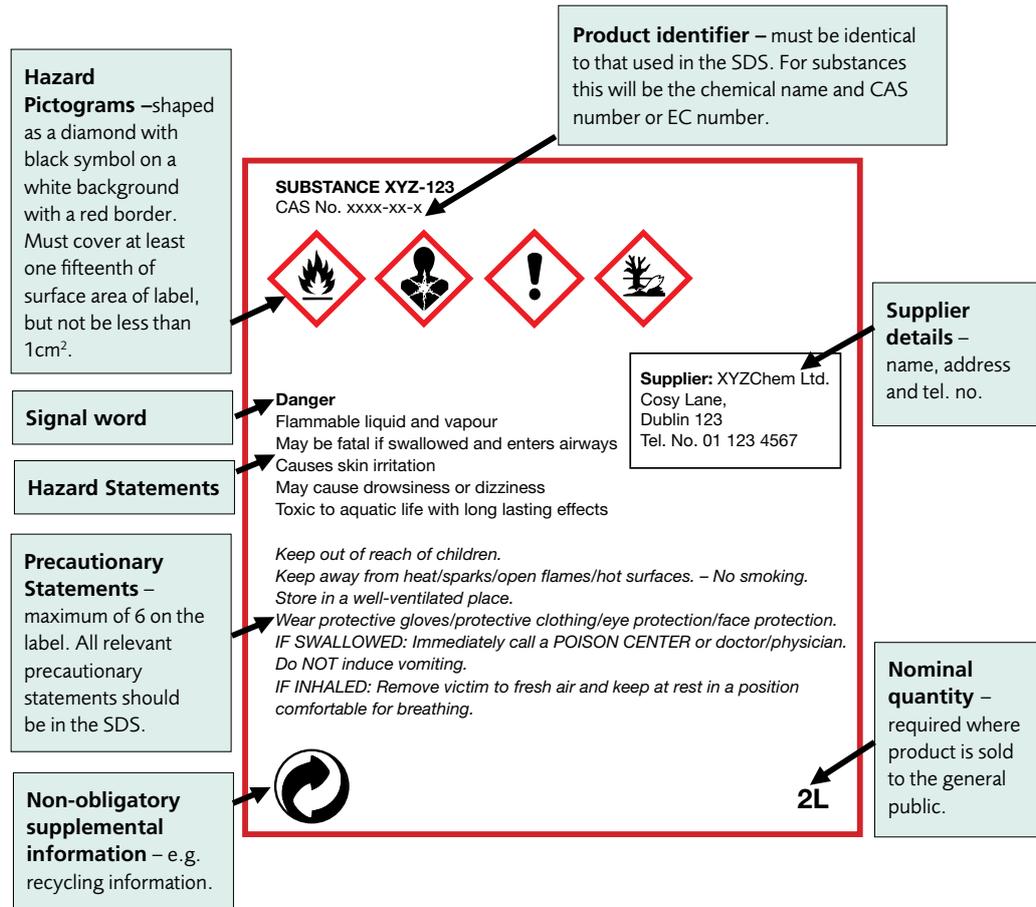


Figure 14. Example of a hazard label (HSA, 2014).

The CLP Regulation introduced the United Nations Globally Harmonised System (UN GHS) for CLP of chemicals in Europe. The EU CLP Regulations have been fully operational since 1 June 2015. The requirements of previous packaging and labelling regulations⁴⁵ will remain in use until 2017 in some limited cases. Therefore, both new CLP and old types of labels will remain relevant at CA sites for the foreseeable future. This is because hazardous wastes can sometimes be stored for many years before they are presented at a CA site. For this reason, both types of label are presented in table 5 below.

The CLP Regulation introduced the following changes to the label:

a) Hazard (H) statements

Hazard (H) statements replace Risk (R) phrases; for example “H317 May cause an allergic skin reaction” replaces “R43 May cause sensitisation by skin contact”.

The CLP codes are grouped depending on the hazards as follows:

H200 series – Physical hazards

H300 series – Health hazards

H400 series – Environmental hazards

⁴⁵ CPL Regulations transposed Directives 67/548/EEC and 1999/45/EC for preparations.

b) Precautionary (P) statements

Precautionary (P) statements will replace Safety (S) phrases; for example “P102 Keep out of reach of children” replaces “S2 Keep out of reach of children”.

Precautionary statements are grouped depending on their purpose as follows:

- P100 series – General
- P200 series – Prevention
- P300 series – Response
- P400 series – Storage
- P500 series – Disposal

c) Hazard Pictograms

Hazard pictograms replace danger symbols; both are presented in table 5. This means that the square orange hazard symbol is replaced by hazard pictograms in the shape of a square set at a point, with a white background and red border as shown in the table 5 below. CA site staff should be aware of both, as it is likely that older productions will arise at CA sites for some time to come. There will no longer be an “indication of danger” such as “Toxic” or “Dangerous to the Environment”; instead, CLP introduces two signal words “Warning” or “Danger” depending on the category of the hazard class.

Reading the pictogram, the H statement and the P statement will help users understand the hazards that are present and take appropriate action to protect themselves and others. Further advice can be sought from the product manufacturer using the contact details that are given on the label. The complete list of H statements, P statements and pictograms are available in the annexes to the CLP regulation.

Table 5. Labelling changes under EU CLP Regulation (EC) No 1272/2008 on the Classification Labelling and Packaging of substances and mixtures

Indication of Danger and Corresponding Symbols (Irish CPL Regulations transpose Directives 67/548/EEC and 1999/45/EC for preparations)		Signal Word and Corresponding Pictogram (EU CLP Regulation (EC) No 1272/2008 on the CLP of substances and mixtures)		
Indication of Danger	Symbol	Class / Category	Pictogram	Signal Word
Explosive – explodes under the effect of flame		Explosive		Danger Warning
Oxidising – exhibits highly exothermic reactions when in contact with other substances		Oxidising		Danger Warning
Extremely/Highly Flammable – readily catches fire		Flammable		Danger Warning
Very toxic / Toxic – involves serious health risks and/or death if inhaled or ingested or if it penetrates skin		Acute toxicity		Danger
Harmful	 or 	Serious health hazard		Warning or Danger

Indication of Danger and Corresponding Symbols (Irish CPL Regulations transpose Directives 67/548/EEC and 1999/45/EC for preparations)		Signal Word and Corresponding Pictogram (EU CLP Regulation (EC) No 1272/2008 on the CLP of substances and mixtures)		
Indication of Danger	Symbol	Class / Category	Pictogram	Signal Word
Corrosive – may destroy living tissue on contact		Corrosive		Danger Warning
Dangerous for the Environment – present or may present immediate or delayed risks for the environment		Hazardous to the environment		Warning
Harmful / Irritant		Health hazard/ Hazardous to the ozone layer		Warning
No Match	No Match	Gas under pressure		Warning

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4.2.2 Safety Data Sheets

All chemical substances are required by the REACH Regulation⁴⁶ to have an associated safety data sheet (SDS). This contains detailed information on the particular hazardous substances with regard to the protection of human health and the environment. Section 2 of the safety data sheet entitled “Hazard Identification”, must list the relevant hazard class(es). Many wastes may have multiple hazards and a decision must be made as to which is the most important.

A safety data sheet contains 16 obligatory headings as specified in the REACH Regulation. The information included under these headings will help ensure that the product is used safely and will assist employers to do a risk assessment. For example, the safety data sheet should identify the hazards the chemical may present, provide information on how it should be handled, stored and disposed of, and explain what should be done in the event of an accident, i.e. first aid, fire-fighting measures, etc. The information to be provided in the safety data sheet must be set out under the following 16 obligatory headings:⁴⁷

46 REACH is a European regulation designed to manage and control the potential risks to human health and the environment posed by the use of chemicals within the EU. REACH is an acronym for the Registration, Evaluation and Authorisation and Restriction of Chemicals.

47 *What is a Safety Data Sheet*. HSA, 2015. www.hsa.ie/eng/Archived_Material/FAQs/Safety_Data_Sheet/

1. identification of the substance/preparation and of the company/undertaking
2. hazards identification
3. composition/information on ingredients
4. first-aid measures
5. fire-fighting measures
6. accidental release measures
7. handling and storage
8. exposure controls/personal protection
9. physical and chemical properties
10. stability and reactivity
11. toxicological information
12. ecological information
13. disposal considerations
14. transport information
15. regulatory information
16. other information.

In addition to the safety data sheets, there are many industry documents and guidance documents available on chemical hazard classes, reaction hazards and segregation policies; see the Health and Safety Authority (HSA) document *Storage of Hazardous Chemicals in Laboratories*.⁴⁸

⁴⁸ *Storage of Hazardous Chemicals in Laboratories*. HSA, 2012. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/Storage%20of%20Hazardous%20Chemicals%20Information%20Sheet.pdf

4.3 Storage of Acceptable Hazardous Wastes

Adequate site storage that considers container type, weatherproofing, separation distance, signage, handling, housekeeping, inspection, record keeping and inventory control will assist in avoiding the major hazards and the potentially dangerous consequences of fire, which is the main hazard at a hazardous waste CA site.

4.3.1 Container Type

The integrity of containers used to store household hazardous waste is the main protection against environmental, health and safety risks. Containers should be UN approved for the class and physical state of the waste they contain. They must have well-fitting lids and resist spillage if toppled over. Containers and bunds must be tested regularly to ensure integrity. These containers are usually provided by collection contractors and would ensure that there are no leaks from the hazardous materials they are used to contain. The appropriate containers recommended for each waste type are listed in Section 1.



Figure 15. UN type-approved symbol for containers.

The CA site should maintain a supply of appropriate UN standard containers for storage of materials that are deposited at the site in fragile or leaky containers.

UN standards for containers require packaging to be of a design certified by a national competent authority. This involves testing the packaging to ensure its suitability for the carriage of certain dangerous goods. Such packaging is often referred to as “type approved” or “UN certified” and is marked in particular ways, prefixed by the UN logo.

Flame- and Explosion-proof Cabinets

Explosive, flammable and unstable wastes should be stored in separate locked fire safety storage cabinets kept at the appropriate distance from each other. These cabinets must satisfy the requirements of EN 14470-1 and quantities of flammable wastes should be kept to a minimum. The following good practice guidance should be followed in providing flame- and explosion-proof cabinets/containers in which flammable materials are stored. The containers should be:

- shelved, in order to provide adequate space for upright storage of containers, with ventilated shelves to allow spills to fall through and not sit on the shelf
- kept locked at all times
- constructed to provide internal isolation, bunding and ventilation
- placed in an area well away from vehicle movements
- marked with appropriate hazard symbol(s), e.g. “flammable liquid” and “no smoking and naked flames”
- provided with absorbent materials in case of spills.

Specific Requirements for Flammable Substances (ATEX)

In accordance with the Safety, Health and Welfare at Work (General Application) Regulations 2007 Part 8, Explosive Atmospheres at Places of Work, a specific risk assessment is required for any work activities involving flammable substances. The findings of the risk assessment must be recorded in a site-specific explosion protection document, which outlines the technical and organisational measures required to reduce the risk of explosions.

It is necessary to classify areas of the CA site (according to Schedule 1 of the Regulations) where explosive atmosphere may occur in zones and to mark the zones where necessary.

Hazardous Area Classification in accordance with Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. 299 of 2007), Part 8, Explosive Atmospheres at Places of Work, defines these zones as follows:

Zone 0/20: “A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist or a cloud of combustible dust is present continuously or for long periods or frequently.”

Zone 1/21: “A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist or a cloud of combustible dust is likely to occur in normal operation occasionally.”

Zone 2/22: “A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist or a cloud of combustible dust is not likely to occur in a normal operation but, if it does occur, will persist for a short period only.”

Suitable equipment must be selected and provided for use in the zones. This equipment must be CE marked and in compliance with S.I. No. 83/1999 – European Communities (Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres) Regulations, 1999 (the ATEX PRODUCT Regulations).

4.3.2 Weatherproofing

Weatherproofing to prevent rain ingress is recommended for the storage of all household hazardous waste, as it will minimise the generation of large quantities of contaminated drainage water. Adequate weatherproofing will also maximise the potential reuse of items such as waste electrical and electronic equipment (WEEE).

4.3.3 Signage

Apart from traffic signage, there are two types of signage to be considered at CA sites. These are container signs to indicate the types of waste accepted in each storage container and safety signs.

Good container signs that direct the public to the appropriate container and describe the wastes that can, and cannot, be disposed of in short clear messages can add nine percentage points to a CA site’s recycling rate⁴⁹. Good signage also frees up staff time because staff members spend less time directing the public. Signage also offers an opportunity to educate the public about how waste is treated and how to prevent waste, e.g. “Rechargeable batteries save money and resources”.

⁴⁹ Household Waste Recycling Centre Guide. WRAP, 2012. http://www.wrap.org.uk/sites/files/wrap/INH0449_HWRC_Guide_%20final.pdf



Figure 16. Prohibition, warning, positive action and mandatory signage.

Good safety signs can be a signboard, colour, acoustic signal, verbal communication or hand signal and these should be used to convey information about safety or health wherever a hazard or danger cannot be avoided or reduced. Safety signboards should not contain text. This is because the symbols or pictograms on a signboard are intended to be understood, independently of the language ability of the person viewing it (see Figure 16 Prohibition, warning, positive action and mandatory signage). The following convention should be used for colours and shapes on safety signboards:

- red for prohibition
- yellow for caution/warning
- green for positive action
- blue for mandatory actions
- discs for prohibitions and instructions
- triangles for warnings
- squares and rectangles for emergency and information signs.

The HSA document *Safety Toolkit and Short Guide to General Application Regulations 2007*⁵⁰ provides guidance on safety signs at places of work. Safety signs should:

- be legible, i.e. use big lettering and big signs so they can be seen by people with varying eyesight and literacy levels
- be elevated above vehicle height so that they can be seen at all times and in all weather conditions
- include instructions on correct disposal, e.g. “Please do not put plastic sacks in this container”
- encourage the public to seek assistance from staff
- use different colours and numbers to differentiate between container types
- be multilingual.

4.3.4 Handling

Much of the work carried out by CA site staff in accepting and correctly storing waste is manual handling. In many cases, the activity may not cause a problem; however, when a CA site extends its waste acceptance policy to include hazardous waste or it extends the type of hazardous wastes that are acceptable, this could introduce new workplace hazards that must be risk assessed.

Specific hazards and guidelines related to each hazardous waste type are mentioned in section 1, and the risk assessment exemplars in Attachment 1 to this guidance will assist in the process of risk assessment, as will the range of manual handling guidance documents⁵¹ produced by the HSA. The HSA has also developed guidance for the management of manual handling in transport and storage.⁵²

Site operators should carry out a risk assessment of manual handling tasks before making a decision on which manual handling tasks need to be avoided or reduced.

4.3.5 Good Housekeeping

CA site staff should observe a “clean as you go” policy, i.e. they must remove any cardboard or packaging used by site users to bring waste to the site. Flammable or combustible rubbish should not be stored, even as a temporary measure, around hazardous waste storage containers, near escape routes or where it may come into contact with potential sources of heat. The site should have a “no smoking” policy. Any electrical equipment used on site should be serviced regularly by a competent person to prevent sparks and fires.

Site users should be encouraged to report all spills, and staff must ensure that spillages are cleaned up promptly. Absorbent materials such as spill kits, granules and sand should be available close by to deal with spills. Salt should be used during icy weather to prevent slips and falls. The quantities of hazardous waste should be kept to a minimum; see record keeping and inventory control below.

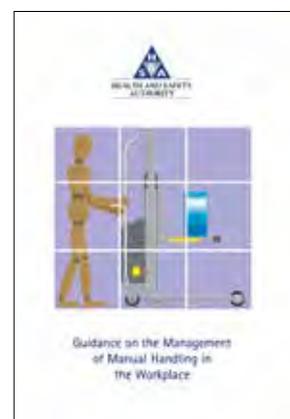


Figure 17. Guidance on the Management of Manual Handling in the Workplace.

50 *Safety Toolkit and Short Guide to General Application Regulations 2007*. HSA, 2007. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Retail/Gen_Apps_Toolkit_Safety_Signs.pdf

51 Manual Handling Guidance Documents. HSA.

52 *Guide on Manual Handling Risk Management in Transport and Storage*. HSA. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Manual_Handling_and_Musculoskeletal_Disorders/Guide_on_Manual_Handling_Risk_Management_in_Transport_and_Storage.pdf

4.3.6 Inspection, Record Keeping and Inventory Control

Daily inspection of containers and waste materials is required for unstable wastes such as automotive batteries, gas cylinders, household and garden chemicals, waste oil and oil filters, paints and related do-it-yourself (DIY) products, smoke alarms and vegetable oil. CA site management can determine the frequency of inspections for all other waste types by monitoring the level of activity in each area and the quantities of waste being accepted. All of these inspections should be documented and records should be used to assist the CA site to manage the inventory of hazardous waste and to ensure adequate storage and regular collection of specific waste streams.



Figure 18. Inadequate storage of materials can lead to accidental spills.

Failing to manage the inventory of waste can lead to overcrowding of storage areas, wastes stacked too high, wastes temporarily stored in unapproved areas, accidental spills, slips, releases to surface water and cross contamination of materials, etc. The site's conditions of authorisation will set limits on the amount of waste to be managed at the facility and the time that the waste may remain on site.

Arrangements should be made with hazardous waste contractors to ensure that there is always adequate storage space. These arrangements may be on demand or at regular intervals. It is recommended that collections are made on a monthly basis as a minimum.

Emergency equipment such as fire extinguishers, first-aid boxes, emergency showers/eye washes and personal protective equipment (PPE) should be included in an inspection programme, tested at suitable intervals and records of the same should be maintained.

In addition to the reporting requirements stipulated in the CA sites authorisation, CA sites should retain information on the types and quantities of hazardous waste stored on site and removed from site for further recovery or disposal. All CA sites in a local authority area should report this information to a designated central contact in the local authority.

This information will assist local authorities and regional waste management offices to collate information from all hazardous waste collection points in its functional area, to develop indicators for hazardous waste generation per sector and to plan and manage hazardous waste into the future.

National Waste Reporting

The EPA surveys CA site operators on an annual basis to gather information on hazardous waste generation and disposal. Data collected in these surveys are validated through desk-top studies and audits. The waste data collected for the National Waste Report and bulletins are also used for Ireland's legal reporting obligations under various EU directives and regulations and to publish data on waste generation and management; see *Hazardous Waste Data for Ireland*.⁵³

53 *Hazardous Waste Data for Ireland*. EPA, 2016. <http://www.epa.ie/waste/municipal/nwrl/>

4.3.7 Traffic Management

If CA sites broaden the range of hazardous wastes types accepted, as the National Hazardous Waste Management Plan (NHWMP) suggests, there will be a consequent increase in the number of visits to the site, the number of vehicles on the site and the amount of material stored on site.⁵⁴ This increase may result in an increased risk to the environment and to the health and safety of CA site staff and visitors.



As part of the risk assessment process, the CA site must be evaluated with respect to the movement of vehicles and pedestrians. All vehicles including those of site staff, members of the public and commercial vehicles servicing the site and moving skips/containers on site must be considered. The vehicular and pedestrian traffic should be marked on a traffic plan so that their points of interaction are clear. Control measures must then be identified and introduced to eliminate or reduce any risks found. Careful examination and planning of the workplace and traffic routes will result in a lower risk of such accidents.⁵⁵

Figure 19. How pedestrians are separated from traffic at the entrance to a CA site. Pedestrian assess/escape route clearly identified.

The CA site traffic plan should ensure that:

- Vehicles and pedestrians are kept safely apart.
- Vehicle and pedestrian access to the site is controlled by use of barriers or access gates. A member of CA site staff at the reception point could reduce congestion on the site by controlling access.
- There are suitable walkways for pedestrians.
- There is physical separation of large vehicles and pedestrians, by means of physical barriers, where possible.
- There are adequate warning signs in place at the interface of pedestrian and vehicle areas.
- Reversing is avoided and if it cannot be avoided because of site layout and size, then reversing must be kept to a minimum and only trained authorised persons are to supervise reversing manoeuvres.
- Pedestrians are directed by clear signage.
- Traffic routes are wide enough, well-constructed and maintained, and are free from obstructions and other hazards.
- A clear route through the CA site is marked and that roadways are marked where necessary, for example, to indicate the right of way at road junctions.
- Signs such as “Give Way” and “No Entry” are clear.
- Vehicle speed is controlled by:

54 *Household Waste Recycling Centre Guide*. WRAP, 2012. http://www.wrap.org.uk/sites/files/wrap/INH0449_HWRC_Guide_%20final.pdf

55 *Workplace Transport Safety – Safe Workplace*. HSA, 2016. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Work_Related_Vehicles/WTS_Safe_Workplace.pdf

- speed limit signs
- high-visibility road humps.
- There are suitable parking areas for all parking needs. Keep customer car and small vehicle parking separate from large truck and vehicle parking.
- There are clear lines of sight, and that vision is maintained by ensuring that the roadways avoid sharp or blind bends. Where vision is compromised, features such as fixed mirrors should be installed to provide greater vision.
- There is a one-way system for vehicle routes within the site, to reduce the risk of collisions.
- The lighting arrangements are adequate both inside and outside the site.
- People can be protected from vehicle risks in the workplace by ensuring that safe vehicles are operated by safe drivers in a safe workplace, the HSA has developed online training courses to assist with this, see the HSA's online learning portal.⁵⁶

Work-related Vehicle Safety

The operation of a CA site requires the use of mechanical handling aids, fork lifts, trollies and skips as well as trucks that collect and deliver skips at the site. These present significant hazards to the site users and to staff. Significant numbers of people have been killed or seriously injured as a result of vehicles being used for work; e.g. by being struck or crushed by or falling from vehicles. Hook loader skip lorries are frequently used in the waste disposal/recycling sectors and the HSA has issued a specific safety alert to owners and operators.⁵⁷ The HSA has produced two factsheets dealing with transport-related manual handling⁵⁸ and preventing injuries resulting from slips trips and falls while accessing work vehicles.⁵⁹

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The HSA publication *Work Related Vehicle Safety*⁶⁰ states that a major cause of transport accidents is poor workplace design and layout. Careful examination and planning of the workplace and traffic routes will result in a lower risk. It recommends that as part of the risk assessment, the following transport-related issues must be considered:

1. vehicular traffic routes
2. pedestrian movements
3. signage and road markings
4. lighting
5. traffic control/speed
6. parking
7. housekeeping and maintenance.

56 Workplace Transport Learning Portal. <https://hsalearning.ie/mod/page/view.php?id=28>

57 *Safety Alert Hook Loader Skip Lorries*. HSA, 2015. http://www.hsa.ie/eng/Safety_Alerts/2015/Hook_Loader/

58 *Manual Handling Risk Reduction for the Transport and Logistics Sector*. HSA, 2016. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Information_Sheets/Transport_and_Logistics_Infosheet.pdf

59 *Watch Your Step. Preventing Vehicle Related Slips, Trips and Falls*. HSA, 2016. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Information_Sheets/Watch_Your_Step_Infosheet.pdf

60 *Work Related Vehicle Safety*. HSA. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Work_Related_Vehicles/Work%20Related%20Vehicle%20Safety%20Five%20Year%20Plan.pdf

4.3.8 Site Security

CA sites are often open to trespassing and theft. CA site managers should engage with An Garda Síochána to review security levels and the approach to site security on site. There are specialist crime prevention officers within each Garda Division and they are trained to encourage, promote and advise on crime prevention.

In addition, containers and compounds for hazardous wastes such as car batteries, flammable materials, gas bottles, household and garden chemicals, WEEE and asbestos (if accepted) should be:

- clearly signed as to their contents and the hazard posed
- kept secure and locked when not in use
- constructed to resist attempts to break into them.

Many CA sites suffer from vandalism and thieves seeking to remove items of value. Targets for theft include the following materials: gas cylinders, WEEE and batteries. Typical incidences of vandalism include the burning of flammable materials and residual waste skips, and damage to site equipment. Incidents of this type could be extremely serious in proximity to unstable, flammable or explosive types of household hazardous waste.

The appropriate measures for deterring vandalism and theft will depend on the severity of the problem and the determination of the offenders. The erection of simple palisade fencing or installation of a fairly basic CCTV system may be sufficient to repel “casual” vandalism and break-ins. In many cases, however, vandals and thieves demonstrate surprising resourcefulness in circumventing security measures, and greater deterrents are necessary. The following security measures may be suitable.

Perimeter fencing

An obvious method of preventing break-ins is to erect fencing that is suitably secure to deter vandals and pickers. Palisade fencing of 1.8 to 2.4 metres in height is recommended. However, persistent offenders may attempt to bend the vertical palisades aside to allow access to the site. Palisade fencing fitted with horizontal bars should prevent the bending of vertical palisades in this way.

CCTV monitoring

Simple CCTV systems may deter “casual” offenders. More determined offenders may take measures to disable CCTV cameras. In these cases the option of installing cameras that are suitably protected can be explored. For sites with serious abuse problems, it is advisable for the cameras to be monitored in real time so that break-ins can be responded to, either by the police or a security firm.

Floodlighting

Automatic floodlighting may deter “casual” offenders, although determined offenders may sometimes find that the extra illumination assists them in carrying out illicit activities. Floodlighting may be useful in conjunction with CCTV monitoring if it helps to identify offenders or their vehicles.

Automatic sensors

Automatic sensors at site perimeters can be used to alert the police or a security firm.

Security personnel

The stationing of security personnel on site can be a powerful deterrent against break-ins. However, the safety of these personnel should be carefully considered. A reliable and quick response from the Gardaí or other security personnel should be available when back-up is necessary.

Lockable containers

Lockable containers could be introduced for all items that are likely to be targeted during break-ins. Vandals are more likely to target flammable materials (i.e. cardboard, wood and general waste), while thieves will seek materials that are valuable (i.e. scrap metal, general waste, clothes and textiles, and reusable items).

4.4 Procedure for Unacceptable Wastes

If neither staff members nor the holder of the waste can identify a waste correctly, or if it can be identified as unsuitable, then it should not be accepted at the site. Staff should ask the holder of the waste to take the waste to a commercial hazardous waste contractor who can identify and dispose of the material.

If a site manager judges that it is unsafe for a member of the public to take hazardous waste away (e.g. in the case of a large, leaking container) or if unidentified hazardous wastes are discovered on site in unmarked containers, then the material concerned can be placed in a sealed screw-top container or other UN-approved container and temporarily stored in a locked chemicals or flammable safe that is inaccessible to the public. Any available details about the waste should be recorded and provided to the site's DGSA or hazardous waste collection contractor. Senior managerial staff and collection contractors should be immediately notified and the material should be collected for appropriate disposal as soon as possible.

If an unsuitable load on site poses imminent danger to site staff or users, the site should be evacuated according to the site's documented emergency response procedure, which must include notification to the emergency services.

Further specific details on dealing with inappropriately presented asbestos, healthcare risk waste, explosives or pyrotechnics is given below.

4.4.1 Unacceptable Hazardous Wastes – Unwrapped/Fibrous Asbestos

Inappropriately wrapped or fibrous asbestos must not be accepted at CA sites. The following procedures will assist CA site staff to deal with situations where members of the public have not complied with correct procedures for the presentation of asbestos on site. The site's emergency response procedures should contain a standard operating procedure for the handling of the following emergency situations.



Emergency Procedure

1. If inappropriately wrapped, unwrapped asbestos or **if any of the following are discovered on site, site staff should take the measures below:**
 - waste that is suspected of containing asbestos
 - inappropriately wrapped asbestos-containing material
 - a load where the containment packaging of asbestos-containing material has split
 - a load of unwrapped fibrous asbestos (such as lagging)
 - asbestos-containing material that looks damaged or friable.
 - a. Use appropriate PPE as listed in Section 10 of the HSA's publication.⁶²
 - b. Dampen down the load with atomised polyvinyl acetate (PVA) and water solution to prevent particles becoming airborne, including the trailer or vehicle it arrived on. Dampen any suspect material with atomised PVA and water solution. Section 12 of the HSA's publication provides detail on how this should be done.
 - c. Securely cover the load with 1000 gauge polyethylene and label it as suspected asbestos waste.
 - d. Move the load to the dedicated asbestos waste quarantine area.
 - e. Where possible, site staff should obtain details of the carrier of the waste (name, address, phone number and vehicle registration) and details of the source of the asbestos waste.
 - f. Instruct the carrier of the waste that the waste will be quarantined, pending confirmation that the waste contains asbestos and will subsequently be wrapped/bagged by a specialist asbestos contractor.
 - g. Contact a specialist asbestos contractor who should be notified of the requirement to wrap the asbestos due to a load being incorrectly presented. Such works may be notifiable to the HSA. The responsible contractor must determine this requirement in accordance with S.I. No. 386/2006 – Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 and S.I. No. 589/2010 – Safety, Health and Welfare at Work (Exposure to Asbestos) (Amendment) Regulations 2010, and must comply with the relevant provisions.

61 *Asbestos-containing Materials (ACMs) in Workplaces. Practical Guidelines on ACM Management and Abatement.* HSE, 2013a. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/Asbestos_Guidelines.pdf

2. If gross contamination is discovered on site, site staff should take the measures below

If an emergency situation arises beyond the training and expertise of CA site staff, e.g. where there is gross contamination with loose asbestos cement, insulation board or lagging that was dumped in general waste skips or discarded elsewhere on site, site staff should take the following measures:

- a. The site should be evacuated and closed according to a documented emergency procedure.
- b. Use appropriate PPE.
- c. Cordon off the area using cones, bunting and asbestos warning signs.
- d. Dampen down the area to prevent particles becoming airborne.
- e. Where possible, site staff should obtain details of the carrier of the waste (name, address, phone number and vehicle registration) and details of the source of the asbestos waste.
- f. Contact a specialist asbestos contractor to come to the site to evaluate the risk and to decontaminate the area if necessary. Such works may be notifiable to the HSA. The responsible contractor must determine this requirement in accordance with the 2006 and 2010 Asbestos Regulations and comply with the relevant provisions of those regulations.

Personal Protective Equipment (PPE)

Section 10 of the HSA's publication *Practical Guidelines on Asbestos-containing Material Management and Abatement* should be used by CA site managers to designate the PPE required. However, appropriate PPE should include the following as a minimum:

1. respiratory protective equipment (RPE)
2. disposable filtering face piece respirator (FFP3)
3. disposable coveralls with hoods (Type 5)
4. wellington boots/disposable gloves

When removing PPE, care should be taken to avoid disturbing any fibres.

4.4.2 Unacceptable Hazardous Wastes – Healthcare Risk Waste

Healthcare risk waste arises particularly from members of the public that self-administer medicines and healthcare procedures at home.

It may be infectious or contaminated with tissues, blood, body fluids, excretions, drugs, other pharmaceutical products, swabs or dressings, syringes, needles or other sharp instruments.

If members of the public contact local authorities with requests as to how to dispose of healthcare risk waste, they should be advised to contact their local doctor’s surgery or the local Health Service Executive (HSE) clinic.



Emergency Procedure

Ideally healthcare risk waste should be identified and turned away at the gate. However, if healthcare risk waste is found on site:

- The area should be cordoned off and a waste contractor with the appropriate permits and competency should be called to dispose of the waste.
- Manual handling of waste bags and containers should be minimised.⁶³
- If handling is deemed essential, it should be done in such a way that avoids direct contact, i.e. waste bags should be picked up by the neck only and should not be thrown or dropped. Waste containers should be carried by the handle only.
- Mechanical aides or tools will reduce the risk of injury and contact with potentially harmful material.
- Wash hands thoroughly with soap and hot water after handling waste.

In the event of a spill:

- Do not leave spillages unattended. A member of staff should remain in the area while another gets assistance and informs the CA manager.
- Cordon off the area and contact a specialist company with the appropriate permits and competency to dispose of the waste and disinfect the area.
- CA site staff should not attempt to deal with spills from healthcare waste unless they have received standard precaution training as appropriate to their task, which should include:
 - hand hygiene
 - proper use of PPE
 - management of blood and body fluid spillage.

62 Waste Management Awareness Handbook 2011. Health Service Executive, 2011. http://pnd.hseland.ie/download/pdf/waste_management_handbook.pdf

In the event of an injury from sharp healthcare waste:

- Clean the wound.
- Encourage bleeding immediately by squeezing the site of the injury and wash with warm water and soap.
- Do not suck the wound.
- If there is a protruding foreign body or object, do not press on the object. Apply firm pressure on either side of the wound and build up padding on either side of the object and seek medical attention.
- Secure with a bandage and seek medical advice immediately.

Report incidents to the HSA; see incident report procedure.

Personal Protective Equipment

- PPE such as high-visibility clothing, appropriate gloves, trousers and footwear with appropriate physical protection and slip-resistant properties must always be worn by staff on CA sites.
- In the event that CA site staff are required to handle healthcare risk waste, ensure that open wounds or cuts are covered and that appropriate eye protection, protective clothing and puncture-resistant gloves are worn. Arrangements should be in place (at a local level) to ensure that the injured party has access to medical advice.
- Consideration should be given to the need for vaccination⁶⁴ (against hepatitis B or other harmful biological agents) of staff if they are likely to come into contact with healthcare risk waste.
- The site's health/medical advisor must review procedures to ensure that guidance is in keeping with best practice. The HSA has produced a guide to provide practical information on the implementation of the Sharps Regulations 2014.⁶⁵

63 *Immunisation Guidelines for Ireland*. National Immunisation Advisory Committee of Royal College of Physicians of Ireland, 2002. <http://www.immunisation.ie>

64 *Prevention of Sharps Injuries in the Healthcare Sector Guide to the European Union Regulations 2014*. HSA, 2014. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Healthcare_Sector/Sharps_Regulations_Guidelines_2014.pdf

4.4.3 Unacceptable Hazardous Wastes – Explosives and Pyrotechnics

Explosives and pyrotechnics include waste ammunition, firework wastes, marine flares and other explosive wastes.

If members of the public contact local authorities with requests as to how to dispose of explosive materials they should be advised to contact their local Garda station.



Emergency Procedures

The public should not be permitted to bring explosive materials to CA sites, as these are not suitable for the collection of such waste. However, if discarded explosive materials are discovered on site. One of two procedures should apply, depending on the nature of the material:

1. If the explosive materials consist of ordinance (e.g. hand grenades or similar devices) they present immediate and serious danger to site staff and members of the public. In this case, sites should be evacuated and closed according to a documented emergency procedure. The Gardaí should be contacted as soon as the material arrives at the site.
2. Other explosive materials (such as marine flares or fireworks) may present a less immediate injury risk. In these cases, they should be temporarily stored in the waste quarantine area to await collection by members of An Garda Síochána.

The waste quarantine area should be located in an area of the site not accessible to the public, and well away from flammable materials containers (at least 5 metres) and kept locked at all times.

4.5 Shipment Off Site

Hazardous waste must be removed from the CA site by an appropriately authorised hazardous waste contractor and it must be tracked through to its final disposal, destruction or reuse. All records relating to this should be maintained.

The consignment of most wastes listed in this document come under the remit of ADR (international agreement concerning the carriage of dangerous goods by road) because they are designated dangerous goods that have been identified as hazardous for transport and present a risk to people, property and the environment. ADR and related national regulations set out complex classification, packaging and labelling requirements necessary to consign dangerous goods off site. The ADR hazard class diamond labels relevant to household hazardous waste are shown in Table 4: Segregation of hazardous waste by hazard class to assist CA site operators in understanding the requirements for segregation.

A full explanation of ADR requirements is beyond the scope of this guidance; however, CA site operators and managers should be aware that, as undertakings that consign dangerous goods by road, CA sites are required to formally appoint a qualified DGSA.⁶⁵ A DGSA may be an employee or an external consultant and should have access to all relevant aspects of the CA site to carry out this function.⁶⁶

National DGSA legislation places a legal burden on both the DGSA and the undertaking (i.e. the CA site) involved in the consignment of dangerous goods. These legal duties include, but are not limited to, the following:

- classification of dangerous goods
- preparation of transport documentation
- appropriate selection and use of packaging
- marking and labelling packaging
- monitoring compliance with the requirements governing the carriage of dangerous goods
- compliance with load securing protocols for ADR loads, which are laid down in European Best Practice Guideline for Safe Load Securing in Road Transport⁶⁷
- preparation of an annual report for management or a local public authority, as appropriate, on the undertaking's activities in the carriage of dangerous goods, which must be preserved for 5 years and made available to the national authorities at their request.

Further information and guidance may be obtained from a DGSA appointed by the CA site and from specialist waste contractors.

For items in this document that are not designated as dangerous goods, please see http://www.hsa.ie/eng/Vehicles_at_Work/Load_Securing for specific guidance on loading, securing of loads and unloading of vehicles.⁶⁸

65 *Carriage of Dangerous Goods by Road Regulations/ADR Guidance on the appointment of a Dangerous Goods Safety Adviser*. HSA. [http://www.hsa.ie/eng/Your_Industry/ADR - Carriage of Dangerous Goods by Road/Guidance on the appointment of a dangerous goods safety adviser.pdf](http://www.hsa.ie/eng/Your_Industry/ADR_-_Carriage_of_Dangerous_Goods_by_Road/Guidance_on_the_appointment_of_a_dangerous_goods_safety_adviser.pdf)

66 *ADR Carriage of Dangerous Goods by Road – A Guide For Business*. HSA, 2012. http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/ADR_Carriage_of_Dangerous_Goods_by_Road_A_Guide_for_Business.pdf

67 *Cargo securing for road transport 2014 European best practices guidelines*. http://ec.europa.eu/transport/road_safety/vehicles/doc/cargo_securing_guidelines_2014.pdf

68 *Load Securing*. HSA. http://www.hsa.ie/eng/Vehicles_at_Work/Load_Securing

Additional Information Sources, Glossary, Abbreviations



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Glossary

Accident	An unplanned and undesired event. This event may cause bodily injuries or illnesses (i.e. disease or wounds); property damage or damage to equipment, stock or products; and downtime (i.e. closure of the CA site); or have an unwanted impact on the environment such as spill or release
Assessment	Survey of a real or potential accident or incident to estimate the actual or expected damages or statutory or regulatory impact and to make recommendations for prevention, preparedness and response
Civic amenity site	A facility where the public can dispose of household waste
Disaster	An event that requires resources beyond the capability of a community and which requires a multiple agency response
Emergency	Any event requiring increased co-ordination or response beyond the routine in order to save lives, protect property, protect the public health and safety, or to lessen or avert the threat of a disaster
Emergency response leader	The person responsible for the co-ordination, operation, training, rostering and maintenance of the emergency response teams, main control teams and first-aiders on site
Environmental accident/incident	Any of the following that is of sufficient magnitude that it is necessary to declare the incident to the regulatory authorities: breach of licensing conditions for discharge; oil, petrol or diesel spillage or leakage; any leakage or spillage of hazardous substances; the release of halons, chlorfluorocarbons (CFCs) and other refrigerants to atmosphere, either accidental or controlled; uncontrolled disposal or spillage of waste material; and damage to protected species (both flora and fauna), preserved trees, historic buildings, ancient monuments or archaeological sites
Environmental damage	Has the meaning given in Environmental Liability Directive 2004/35/EC
Exposure	Describes the number of people, and the value of structures and activities, that will experience hazards and may be adversely impacted by them
First aid injury	An accident such as a cut or graze etc. where first aid was administered on site but no further action was necessary and the injured person resumed work on usual duties. Such accidents must be recorded in the site accident and incident report log, a copy of which must be sent to the safety department
Hazard	A natural, technological or social phenomenon that poses a threat to people and their surroundings (in terms of both the natural and the built environment)
Incident	(i) an emergency; (ii) any emission that does not comply with the requirements of the waste licence; (iii) any trigger level specified in the waste licence that is attained or exceeded; (iv) any indication that environmental pollution has, or may have, taken place; (v) any occurrence that breaches health and safety and environmental statutory or regulatory instruments; (vi) an undesired event that, under slightly different conditions, could have caused an accident

Incident (near miss)	An unplanned, uncontrolled event that has caused, or has the potential to cause, injury to personnel or damage to equipment
Lost time injury	An injury or illness resulting from work activities, which has prevented a person from carrying out work for a period of at least 1 full day, excluding the day of the injury. Such accidents must be reported in the site accident and incident report log, a copy of which must be sent to the safety department
Medical treatment injuries	Injuries involving medical treatment other than those stated above (e.g. a person cuts his hand and goes to hospital, receives treatment and returns to work the same day or the following day). Such incidents must be recorded in the site accident and incident report log, a copy of which must be sent to the safety department
Minor environmental accidents	Accidents not reported to the regulatory authorities, but which should be reported and recorded on site using the site accident and incident report log (these will not be reported to anyone else unless specifically requested).
Minor first aid injury	An accident that results in an injury for which no medical care beyond first aid is required
Occupational disease	Diseases caused by work exposure to chemicals, plants or other substances. Local regulations must be referred to for the listing of concerned diseases. Such accidents must be recorded on site using the site accident and incident report log, a copy of which must be sent to the safety department
Preparedness	Establishing and delineating authorities and responsibilities for emergency actions and making provisions for having the people, equipment and facilities in place to respond when the need arises. Preparedness involves planning, training, exercising, procuring and maintaining equipment, and designating facilities for shelters and other emergency purposes
Prevention	Encompasses activities designed to provide permanent protection from disasters. It includes engineering and other physical protective measures, organisational management and also legislative measures controlling land use and urban planning. See also “preparedness”
Property or material damage	Any incident that has resulted in the loss or damage to property or material. Such incidents must be recorded in the site accident and incident report log, a copy of which must be sent to the safety department
Response	Carrying out time-sensitive actions to save lives and protect property during an incident, emergency or disaster. In addition to managing the response, actions can include firefighting, protective actions by law enforcement, warning, evacuation, mass care, emergency public information, search and rescue, health and medical care, resource management, and other activities
Restricted work activity injury	An injury where the injured person is prevented from doing the routine functions of their normal job for a period of at least 1 full day, excluding the day of the injury. Such incidents must be recorded in the site accident and incident report log, a copy of which must be sent to the safety department

Risk assessment	Risk assessment is a systematic characterisation of the probability of an adverse event and the nature and severity of that event. Risk assessments are most often used to determine the human health or ecological impacts of specific chemical substances, microorganisms, radiation or natural events
Risk	A measure of the probability of damage to life, property, and/or the environment, which could occur if a hazard manifests itself, including the anticipated severity of consequences to people
Safety	Safety, in the traditional sense, refers to monitoring and reducing the risk of personnel casualties (injuries and deaths) to some acceptable level
Safety data sheet	A document that provides information on the properties of hazardous chemicals
Waste licence	A waste licence issued by the EPA for the operation of a civic amenity site in accordance with conditions set in the waste licence
Waste permit	A waste permit issued by the local authority for the operation of a waste transfer facility/civic amenity site

Abbreviations

ADR	International agreement concerning the carriage of dangerous goods by road
CA	Civic amenity
CFC	Chlorofluorocarbon
CFL	Compact fluorescent light
CLP	Classification, labelling and packaging
DGSA	Dangerous goods safety advisor
DIY	Do-it-yourself
EPA	Environmental Protection Agency
ERP	Emergency response procedure
EWC	European waste catalogue
F-gas	Fluorinated greenhouse gas
H	Hazard
HFC	Hydrofluorocarbon
HSA	Health and Safety Authority
ICSD	Ionisation chamber smoke detector
LCD	Liquid crystal display
LoW	List of Waste
LPG	Liquid petroleum gas
MSDS	Material safety data sheet
NHWMP	National Hazardous Waste Management Plan
ODS	Ozone-depleting substance
P	Precautionary
PPE	Personal protective equipment
PVA	Polyvinyl acetate
RPE	Respiratory protective equipment
RWI	Restricted work activity injury
SDS	Safety Data Sheet
UN	United Nations
WEEE	Waste electrical and electronic equipment

Use www.besmart.ie –
the HSA's free online risk assessment tool

Attachment 1

Risk Assessment Exemplars



Attachment 1 – Risk Assessment Exemplars

1 What is Risk Assessment?

A risk assessment is an organised look at site activities that identifies the hazards and the risks that these hazards present. The risk assessment for the acceptance and storage of hazardous waste must take the following issues into consideration:

- hazard presented by the waste itself
- hazards associated with packaging, e.g. acidic waste in metal containers, volatile waste in sealed containers
- storage conditions, i.e. temperature, ventilation, stored indoors or outside
- adjacent activities, e.g. vehicles, ignition sources
- adjacent storage of other hazardous waste, i.e. compatibility
- storing materials in sufficient inventories and with other materials that may interact with each other and cause a more serious risk
- compacting of waste by crushing, baling or melting and thereby creating exposure to dust and fumes (e.g. of heavy metals), which can be injurious to health
- what might go wrong and who would be harmed. All potential scenarios must be examined including but not limited to:
 - a. spills
 - b. fire
 - c. explosion
 - d. reactions between different wastes
- Personal protective equipment (PPE) must be considered a back-up control measure and should only be used as a last resort or as a support to other control measures, e.g. have a well-ventilated area first. However, when conducting a risk assessment, consideration should be given to the importance of suitable PPE and good welfare (washing) facilities to minimise the risks associated with skin contact/ingestion of biohazards and chemicals.

Risk assessment can be carried out according to the five steps (see Figure 1). These steps are:

1. Look for the hazards (anything with the potential to cause harm).
2. Decide who may be harmed and how.
3. Evaluate the risks arising from the hazards and decide whether existing precautions are adequate or if more should be done.
4. Record your significant findings.
5. Review your assessment from time to time and revise it if necessary.



Figure 1. The five steps involved in risk assessment.

2 Calculating Risk Level

Risk assessments are based on a ranking of the likelihood of an accident and the severity of any potential injuries. In order to calculate the risk level of a particular waste or activity, the likelihood and the severity of an accident are rated on a scale of 1 to 5.

The likelihood of an accident taking place can be estimated by civic amenity (CA) site staff based on the characteristics of the site in question.

The severity of injuries can be ranked using Table 1 below.

Table 1. Severity ranking for injuries

Slightly harmful	Harmful	Very harmful
i.e. Negligible/slight	i.e. Moderate	i.e. Severe/very severe
1–2	3–4	4–5
Superficial injuries Minor cuts and bruises Eye irritation from dust Nuisance and irritation Temporary discomfort	Lacerations Burns Concussion Serious sprains Minor fractures Deafness Dermatitis Asthma Minor Disability	Amputation Major fractures Poisoning Fatal injuries Occupational cancer Severely life shortening Disease Fatal disease Head injuries Eye injuries

This risk level, which will be between 1 and 25, corresponds to the risk levels prior to control measures being introduced. The risk level dictates the timetable required for management to eliminate or reduce the risk level (see Table 2 below).

Table 2. Timetable for action required for the range of risk levels (low to very high)

Likelihood of an accident		Severity of accident		Risk level calculation	Guideline action timetable
(L)		(S)		(L x S = R)	
Unlikely	1	Negligible	1	1–5 Low	No action
Possible	2	Slight	2		
Quite possible	3	Moderate	3	6–10 Medium	Prioritise after high-risk actions complete
Likely	4	Severe	4	11–15 High	Prioritise action as soon as Practical
Very likely	5	Very severe	5	16–25 Very High	Action urgent

Controls are then put in place to reduce the risk level and a subsequent risk calculation is made which includes the effectiveness of the controls in place (risk level with controls).

3 Civic Amenity Site Risk Assessment Exemplars

The risk assessment exemplar presented below demonstrates the risk assessment process for the risks associated with the acceptance of aerosol cans at a CA site. Each CA site must conduct site-specific risk assessments for all wastes and activities on site. This will ensure that the conditions and peculiarities of specific sites that may pose a threat to health, safety or the environment are taken into account.

Further exemplars are available on the hazardous waste section of the EPA website (www.epa.ie).

Aerosol cans			Assessment by:							
			Assessment date:				Latest review date:			
Hazard	Potential harm	Current controls	Risk rating ¹			Recommended controls	Person responsible	Revised risk		
			L	S	RR			L	S	RR
Handling and storage of aerosol cans	<p>Flammable aerosol. Contents under pressure. Possible chance of explosion. If aspirated overexposure may cause lung damage.</p> <p>Risk of fire as a result of fork-lift truck handling incidents.</p> <p>Eye contact: May cause eye irritation redness and tearing.</p> <p>Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.</p> <p>Skin contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.</p> <p>Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause chemical pneumonitis, severe lung damage and death.</p>	<p>Do not store at temperatures over 50°C on account of the possibility of explosion. Protect from direct sunlight. Store under protection from rain in dedicated cages or drums fixed with a metal clasp. Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.</p> <p>Engineering controls: Use adequate general and local exhaust ventilation to maintain exposure levels below occupational exposure limits.</p> <p>Personal protection: Safety goggles are recommended where eye contact is possible. Wear chemical-resistant gloves to avoid skin contact.</p> <p>Respiratory protection is not required if ventilation is adequate.</p> <p>Typical R phrases for aerosols R10 Flammable. R65 Harmful: may cause lung damage if swallowed. R66 Repeated exposure may cause skin dryness or cracking.</p> <p>Typical safety phrases for aerosols S2 Keep out of the reach of children. S16 Keep away from sources of ignition. No smoking. S23 Do not breathe in the vapour/spray. S37 Wear suitable gloves, i.e. chemical-resistant gloves. S51 Use only in well-ventilated areas. A1 Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. A2 Do not spray on a naked flame or any incandescent material.</p> <p>Typical hazard statements H220 Extremely flammable gas. H280 Contains gas under pressure; may explode if heated.</p> <p>Typical Precautionary statement prevention. P102 Keep out of reach of children. P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P243 Take precautionary measures against static discharges.</p> <p>Precautionary statement response P377 Leaking gas fire: Do not extinguish unless leak can be stopped safely. P381 Eliminate all ignition sources if safe to do so.</p> <p>Precautionary statement storage P410+P403 Protect from sunlight. Store in a well-ventilated place.</p>	2	3	6	<p>Appropriate training for the handling of waste aerosols, including training for transport drivers.</p> <p>Store in ventilated cages or drums to reduce the possible build-up of heat</p> <p>Aerosol storage area should be away from moving vehicles.</p> <p>Leaking canisters should be isolated in a ventilated area.</p> <p>Remove full cages, drums immediately from public areas and seal.</p> <p>Label drum in accordance with current legislation.</p> <p>Good standard of housekeeping should be adhered to at all times. Always refer to safety data sheet for guidance.</p>	CA site manager All staff	1	3	3
<p>Specific control legislation, standards, guidance, etc.</p> <ul style="list-style-type: none"> ➤ Safety, Health and Welfare at Work Act, 2005 ➤ Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007). <p>http://www.hsa.ie/eng/Publications_and_Forms/Publications/Chemical_and_Hazardous_Substances/ADR_Carriage_of_Dangerous_Goods_by_Road_A_Guide_for_Business.pdf</p>										

¹ L = Likelihood, S = Severity, RR = Risk Rating

Attachment 2

Emergency Response Procedure



Attachment 2 – Emergency Response Procedure – Guidance Template

1 Introduction and Scope

All civic amenity (CA) sites require a site-specific plan to deal with emergencies. The purpose behind an emergency response procedure (ERP) should be to:

- provide guidance in the event of an emergency
- identify potential risks and determine control measures to mitigate against such risks
- determine “gaps” in personnel training, equipment, personal protective equipment (PPE), etc.

2 Description of Plan

The emergency plan describes the procedures for handling emergencies at each facility.

Possible emergencies on site are divided into the following eight basic groups:

1. fire
2. dust explosion
3. spillage of hazardous material
4. rescue situations
5. transport incidents
6. medical emergency
7. external threat (bomb alert, suspect package, emergency at neighbouring plant, etc.)
8. any combination of the above.

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The approach to be adopted by each facility to manage and control any emergency on site is as follows:

- prevention of emergency situations
- detection of emergencies that do arise
- response to emergency situations that have arisen on site.

3 Potential Risks and Risk Areas

This section must detail the areas of risk in the CA site, i.e. the hazardous waste storage areas listed below (see Appendix 1 for sample risk assessments):

- the range of hazardous waste currently accepted at CA site
- hazardous wastes NOT accepted at CA site, these include,
 - healthcare risk waste
 - explosives
 - fibrous/inappropriately wrapped asbestos.

Although the waste types above are not to be accepted at CA sites, risk assessments are required in the event of discovery at the site

- site-specific risks; cognisance must also be taken of site specific risks, i.e. site located in an area of potential flooding

- administration and weighbridge areas
- kitchen and canteen areas.

4 Site Layout/Emergency Map

In the event of an incident or emergency at the CA site, the map should be readily available to the emergency services arriving on site. The map [or geographic information system (GIS)-based map] should show locations of emergency equipment and fire water hydrants and also areas of flammable materials, detailing the type of material stored. Other information that may be contained on the emergency map is: location of electrical isolation switches, key emergency contacts of personnel, neighbouring properties and sensitive environmental receptors.

5 Emergency Response Equipment

The type of equipment stored at a CA site can vary depending on the risk assessment conducted and proposed control measures, e.g. PPE, spill kits, fire-fighting equipment, traffic control equipment (e.g. red/white barrier tape, barriers, signs, lights, etc.).

6 Emergency Response Organisational Structure and Training

CA site managers should ensure that employees are assigned specific responsibilities in the event of an emergency. It is legislatively required that the assigned staff are trained and provided with emergency equipment in a state of continuous preparedness for an emergency. This equipment includes PPE, spill control equipment and communication equipment.

7 Adjacent Premises/Dwellings

A thorough list of neighbouring properties should be drawn up and posted at the reception or weighbridge area. In the event of an emergency, the neighbouring properties should be alerted and the details of the emergency relayed to them. Contact details for all neighbours adjacent to the facility should be contained in the ERP and posted with the emergency details held in the emergency information box at the entrance to the facility.

8 Interaction with Local Emergency Services

An initial review should be undertaken of what local emergency services are available in the immediate area. For example, a local part-time fire station may be located nearby to the facility, with backup from a full-time fire station located in a nearby city. A table should be contained within the ERP that lists the key personnel and emergency services responsible during an environmental emergency at the site.

9 Information for Employees

This section shall outline the basic information that an employee on the CA site needs to know in order to respond safely to any incident on site.

Employee responsibility – All new employees and contractors, when coming onto the CA site for the first time, should attend an induction training programme, which includes the procedures involved in cases of emergency, fire/spill alarm activation and evacuation. The risks associated with the site should also form part of the induction. It is the responsibility of the facility manager to ensure that all staff become familiar with the location of the emergency routes, emergency exits and assembly points.

Fire alarm and gas alarm systems – Each CA site should have some form of a fire alarm system. Management should ensure that there is a procedure for conducting regular checks and recording in the fire register log on site. Each employee should know how to activate the system in the event

of an emergency and how to re-set the fire alarm. Contact details should be located in the fire register for a suitably qualified service engineer in the event of an issue with the system. Regular drills should be conducted and logged.

10 Assembly and Headcount System

In the event of an emergency, the ERP must state how the site will be evacuated. Upon instruction to evacuate the site, a nominated member of staff must check the site, if it is safe to do so, to ensure that the site has been cleared. At the assembly point, all staff should be accounted for by conducting a roll call. Members of the public should be asked:

- Are all persons that travelled with you to the CA site accounted for?
- Are there any persons remaining in your vehicle?

11 Fire Extinguishers

The location and type of portable fire extinguishers at the CA site should be clearly identifiable and a map showing the locations should be erected at a prominent location with the site office. Individuals should familiarise themselves with the extinguisher locations and type in their area, giving consideration to the classes of fire and the extinguisher to use. All employees should be trained to use portable fire extinguishers. Records of such training should be maintained on site.

12 Communication

12.1 Communications On Site During an Emergency

The effectiveness of the emergency plan will partially depend on the ability of the personnel involved to communicate clearly with each other and the outside services.

12.2 External Communications

In the event of an emergency on site, the facility manager will be responsible for communications with the fire authorities, environmental authorities and emergency services. The nature of the emergency will dictate which other authorities require contacting. Table 1 may be used for guidance purposes.

Table 1. External agencies to be contacted in the event of an incident

Possible emergencies	Gardaí	Fire service	Local authority	HSA	Inland Fisheries Ireland
Fire	✓	✓	✓	✓	✓
Explosion	✓	✓	✓	✓	
Chemical spill	✓	✓	✓	✓	✓
Toxic gas release	✓	✓	✓	✓	
Bomb threat	✓	✓	✓		

The Environmental Protection Agency (EPA) must be contacted in the event of an emergency on an EPA-licensed facility. The local authority should be contacted in the event of an emergency at a permitted site.

12.3 Public Relations

For any emergency, it is essential that all dealings with the local community, media and external agencies are handled in an efficient manner.

13 Action and Action Plans

This section should outline the actions to be taken by individuals and groups in response to the various emergency situations that may occur on site. Each CA site must plan for the worst case scenario of the most unlikely and serious events occurring:

- control centre and area assembly
- action to be undertaken on activation of the fire alarm
- action to be undertaken in the event of an emergency situation
- action to be undertaken in the event of a power failure
- action to be undertaken in the event of an emergency at a neighbouring facility
- action to be undertaken in the event of a spillage of material
- emergencies outside normal working hours
- dealing with the evacuation of the CA site
- location of assembly points
- traffic control in the event of an emergency
- power isolation in the event of an emergency.

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14 Clean-up and Restoration

Depending on the scale of the emergency, an in-house clean-up may be sufficient to restore normal operations at the CA site. In some instances, e.g. where there is fire damage or unauthorised waste disposal/spillage (i.e. asbestos), assistance may be required from external emergency services and external experts in the clean-up and restoration process. Additional expertise may be required in areas such as:

- land remediation through specialist contractors, e.g. environmental spills
- demolition and repairing damaged properties, e.g. fire damage
- restocking of fish populations in rivers
- replanting of vegetation and fauna.

Attachment 3

Exemplar Procedure for the Reporting of Accidents and Incidents



Attachment 3 – Exemplar Procedure for the Reporting of Accidents and Incidents – Guidance

1 Introduction and Scope

This attachment provides an exemplar procedure for the reporting of accidents and incidents that can be used to inform the development of a site-specific procedure for the reporting of accidents and incidents.

2 Purpose

- a. To outline a procedure for dealing with the reporting of accidents and incidents at CA sites.
- b. To inform employees of their responsibilities in the event of an accident or incident.
- c. To ensure communication between visitors, contractors and staff at the CA site in the event of an accident or incident.

3 Policy

It is the policy of the civic amenity (CA) site management and staff to ensure, as far as is reasonably practicable, a safe and healthy place of work for all its employees, contractors and users of the CA site.

All staff, contractors and site users must adhere to the site environmental health and safety rules and instructions given to them by the CA site operatives.

4 Types of Accidents That Must Be Notified to the Health and Safety Authority

Accidents, where a person is injured at a place of work and cannot perform their normal work for more than 3 consecutive days, not including the day of the accident, must be reported using the accident reporting form online at www.hsa.ie.

- Road traffic/vehicle accidents involving employees and self-employed.
- Such accidents are reportable if the person was injured while driving in or riding on the vehicle in the course of work, and cannot perform their normal work for more than 3 consecutive days, not including the day of the accident.
- General injuries involving members of the public.
- Accidents related to a place of work or a work activity where a person requires treatment from a medical practitioner must be reported using the accident reporting form online at www.hsa.ie. Accidents related to medical treatment or a pre-existing medical condition are not reportable.
- Road traffic/vehicle accidents involving members of the public.
- Road traffic accidents are only notifiable if they relate to vehicle loads or to the construction or maintenance of roads or structures adjacent to roads.
- Accidents/incidents that meet the criteria under ADR 1.8.5 must be reported to the Health and Safety Authority (HSA), on the appropriate form found in ADR.

5 Roles and Responsibilities

A large proportion of CA sites are operated by local authorities and in some instances are operated by private companies on behalf of local authorities. As with all organisations, directors, line managers and employees have not only shared but also specific responsibilities to the management of incidents and accidents at CA sites.

The roles and responsibilities of directors of services, county engineers, town managers, line managers, senior and executive engineers and scientists, are detailed in parent safety statements and also in ancillary safety statements that are specific to CA sites. The roles and responsibilities outlined in these safety statements should be consulted and referred to as part of the procedure for the reporting of incidents and accidents.

6 Accident and Incident Investigation – Internal Reporting

The reporting of near misses and incidents is known to reduce the amount of first aid injuries, minor injuries, serious injuries, and ultimately fatalities (injury pyramid, Figure 1).

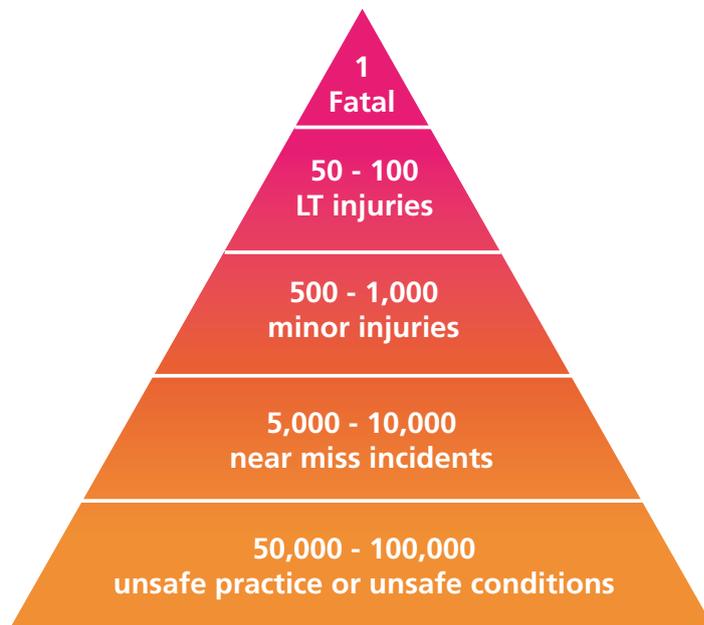


Figure 1. Injuries pyramid showing the relationship between the number of fatalities, lost time (LT) injuries and less serious injuries.

Therefore, each employee has a responsibility to report any actual or suspected dangerous incident that might have resulted in injury or damage. This subject should be discussed regularly at safety meetings and tool box talks, so that the near misses can be reduced and staff are encouraged to prevent similar occurrences.

The reporting to the CA site manager of near misses, incidents and accidents should be immediate. The CA site manager will complete an investigation and report on the accident or incident as appropriate. The report will be forwarded to the CA site manager's superiors/safety department for further action as required in accordance with their company or local authority safety policy and procedures.

See Error! Reference source not found..

7 Accident Investigation – External Reporting

Under the Safety, Health and Welfare at Work (General Applications) 1993, Part X, and the Twelfth Schedule relating to the notification of accidents and dangerous occurrences, which were not revoked by the Safety, Health and Welfare at Work (General Applications) 2007, all employers are obliged to notify the HSA of accidents or dangerous occurrences. Descriptions of reportable accidents and dangerous occurrences are summarised below.

The regulations require that special forms should be completed and returned to the HSA:

IR1 – Form of Accident, used for all accidents where an employee is out of work for more than 3 days, excluding the day of the accident. Accidents can be reported to the Health and Safety Authority in two ways, namely by hard copy, i.e. completing the Incident Report Form (IR1) available online http://www.hsa.ie/eng/Publications_and_Forms/Forms/ and posting it to the Workplace Contact Unit, Health and Safety Authority, The Metropolitan Building, James Joyce Street, Dublin 1, or reporting online via the Health and Safety Authority’s website. <https://webapps.hsa.ie/Account/Login?ReturnUrl=%2f>

IR3 – Form of Notice of Dangerous Occurrence, used for dangerous occurrences that are notifiable to the HSA, completed by the safety section of management. Dangerous occurrences should be reported using the Authority’s online reporting system <https://webapps.hsa.ie/Account/Login?ReturnUrl=%2f>

These forms are available from the HSA; alternatively, the HSA has a reporting function online – www.hsa.ie

8 Dangerous Occurrences

The following dangerous occurrences/incidents must be reported by the employer to the HSA using IR3 – Form of Notice of Dangerous Occurrence. See examples of external reporting forms:

1. The collapse, overturning, or failure of any load-bearing part of:
 - a. any lift, hoist, crane, derrick or mobile-powered access platform;
 - b. any excavator; or
 - c. any pile-driving frame or rig having an overall height, when operating, of more than 7 metres.
2. The explosion, collapse or bursting of any closed vessel, including a boiler or boiler tube, in which the internal pressure was above or below atmospheric pressure.
3. Electrical short circuit or overload attended by fire or explosion that resulted in the stoppage of the plant involved for more than 24 hours.
4. An explosion or fire occurring in any plant or place that resulted in the stoppage of that plant or suspension of normal work in that place for more than 24 hours, where such explosion or fire was due to the ignition of process materials, their by-products (including waste) or finished products.
5. The sudden uncontrolled release of 1 tonne or more of highly flammable liquid, liquefied flammable gas, flammable gas or flammable liquid above its boiling point from any system plant or pipeline.
6. The collapse or partial collapse of any scaffold more than 5 metres high that results in a substantial part of the scaffold falling or overturning, including, where the scaffold is slung or suspended, a collapse or part collapse of the suspension arrangements (including an outrigger) which causes a working platform or cradle to fall more than 5 metres.

7. Any unintended collapse or partial collapse of:
 - a. any building or structure under construction, reconstruction alteration or demolition, or of any false-work, involving a fall of more than 5 tonnes of material; or
 - b. any floor or wall of any building being used as a place of work, not being a building under construction, reconstruction, alteration or demolition.
8. The uncontrolled or accidental release or the escape of any substance or pathogen from any apparatus, equipment, pipework, pipeline, process plant, storage vessel, tank, in-works conveyance tanker, landfill site or exploratory land-drilling site, which, having regard to the nature of the substance or pathogen and the extent and location of the release or escape, might have been liable to cause serious injury to any person.
9. Any unintentional ignition or explosion of explosives.
10. The failure of any container or of any load-bearing part thereof while it is being raised, lowered or suspended.
11. Either of the following incidents in relation to a pipeline:
 - a. the bursting, explosion or collapse of a pipeline or any part thereof:
 - b. the unintentional ignition of anything in a pipeline, or of anything that immediately before it was ignited was in a pipeline.
12. (1) Any incident in which a container, tank, tank vehicle, tank semi-trailer, tank trailer or tank container being used for conveying a dangerous substance by road:
 - a. overturns or;
 - b. suffers damage to the package or tank in which the dangerous substance is being conveyed.
- (2) Any incident involving a vehicle carrying a dangerous substance by road, where there is:
 - a. an uncontrolled release or escape from any package or container of the dangerous substance or dangerous preparation being conveyed; or
 - b. a fire that involves the dangerous substance or dangerous preparation being conveyed.
13. Any incident where breathing apparatus while being used to enable the wearer to breathe independently of the surrounding environment malfunctions in such a way as to probably either deprive the wearer of oxygen or, in the case of use in a contaminated atmosphere, to expose the wearer to the contaminant to the extent in either case of posing a danger to his health, but excluding such apparatus while it is being used in a mine or is being maintained or tested.
14. Any incident in which plant or equipment either comes into contact with an overhead electric line in which the voltage exceeds 200 volts or causes an electrical discharge from such electric line by coming into close proximity to it, unless in either case the incident was intentional.
15. Any accidental collision between a locomotive or a train and any other vehicle at a factory or at dock premises.
16. The bursting of a revolving vessel, wheel, grindstone or grinding wheel moved by mechanical power.

9 Procedure for Reporting

The most effective way of preventing an accident or incident from occurring is to prevent a dangerous situation in the first place. An observation can be reported either verbally or on a report card system as shown here.

The system of reporting such accidents and occurrences can prevent a recurrence of a potentially dangerous situation and ensure a safer CA site for all.

Additional reporting will be required where there has been a first aid incident, loss of days or vehicular accidents on sites. For the most part, local authority or company-specific reporting forms can be used, examples of which are appended to this document Error! Reference source not found.¹.

For external reporting there are statutory forms available from the HSA website and as outlined previously in Section 7 above.

The key issues in relation to increases in incidents and accidents on site are the failures of staff and management not to report incidents/accidents in a timely manner, to undertake an investigation to determine the “root cause” and to implement preventative measures to prevent recurrence. Therefore, with this in mind, the following key steps in reporting should be considered and adjusted to fit into existing health and safety management systems.

9.1 Reporting

1. All incidents should be recorded on an appropriate form. The CA site manager or safety department will give advice and guidance as needed. The completed incident report should be forwarded to the safety department as soon as possible.
2. A fatal or serious injury requiring medical attention should be notified to the safety department and line manager immediately.
3. A breakdown of safety observations, near misses, incidents and accidents should be produced on a monthly basis, and on an annual basis a report should be compiled on overall safety findings.
4. Recommendations should be made based on these findings and procedure for checking that the recommendations are followed through.
5. All safety advisors and safety representatives should be given a copy of the report and presentation on the findings of the report.

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9.2 Accident Investigation

1. All accidents must be investigated by an appropriate person/line manager.
2. Statements should be gathered by witnesses, including CA site users.
3. The safety section will complete the investigation and prepare a report on its findings with recommendations to avoid a recurrence.
4. The site should be made safe, but the scene of the accident preserved if necessary pending possible investigation by the Gardaí and the HSA. The HSA will want to look at:
 - a. What occurred just prior to the accident?
 - b. Which series of events occurred before the accident?
 - c. What happened differently this time in respect to what always happens?
 - d. Why was it different this time?

¹ Forms are used with the kind permission of Cork County Council.

- e. Are regular risks being taken?
 - f. Is the system inherently flawed?
 - g. Are accidents and near misses happening as a result of an ineffective “system”?
5. The safety section will submit the appropriate form (IR1 or IR3) and co-ordinate contact with the HSA.
 6. In the case of such a serious accident requiring the intervention of the HSA, the person in charge at the scene should immediately contact their line manager who in turn will contact the safety department. The safety manager/advisor should attend at the scene immediately.
 7. The safety manager/advisor will immediately contact his line manager and seek advice from senior management thereafter.

Following a serious accident, members of the investigative team may require the additional expert advice from:

1. legal representation
2. advice from insurance company personnel
3. forensic engineer examination
4. public relations (PR) communication and press release
5. counselling.

These personnel will form the incident management team. Consideration should be given to incident investigation and procedural training for CA site managers.

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