Swansea University
Prifysgol Abertawe

Swansea University

Waste Management Guidance Note WMGN20

- Chemical Waste Classification Guidance

Author:	Ben Harris (Environment Officer)
Approved by:	Teifion Maddocks (Sustainability Lead)
Creation date:	09/11/2018
Version date:	29/06/2026

Waste Management Guidance Note WMGN20 Chemical Waste Classification and Storage Guidance	
Location Generated	University-wide
EWC	Various * Hazardous and non-Hazardous
Type	Chemical and Hazardous Wastes
Disposal Method	Specialist licensed contractors
Receptacle type	Various

Duty Of Care

To ensure that the University complies with its Duty of Care, as set out in section 34 of the Environment Protection Act 1990, the University must ensure all waste is stored in such a way as to prevent escape or leakage whilst on site or in storage.

- Waste is only kept, treated, deposited or disposed of in accordance with a waste management licence or other authorisation
- Waste does not escape from the control of the holder
- Waste is only transferred to authorised persons such as registered waste carriers or licensed disposal operations permitted to accept that type of waste
- All transfers / movements of the waste are accompanied by an adequate written description of the waste which will allow waste to be identified and subsequently handled correctly

The University must act to keep stored waste safe against:

- corrosion or wear of waste containers;
- fire, accidental spilling or leaking or inadvertent leaching from waste unprotected from rainfall;
- accident or weather degrading or breaking contained waste open and allowing it to escape;
- waste blowing away or falling while stored or transported; and
- arson, fly tipping and scavenging of waste by vandals, thieves, children, trespassers or animals

This Duty of Care begins with the person(s) who produced the waste and it cannot be delegated to others. This duty is legally enforceable, and breaches can lead to criminal prosecution of individuals and the University. As a result, the University (its staff and students) must make every effort to categorise, segregate and contain waste according to standards imposed by current legislation.

Responsibilities

PS/Faculties:

- Must ensure they have a system in place for **Chemical Risk Assessment** of hazardous substances and that assessments identify the correct means of disposal.
- Must ensure chemicals are stored in suitable containers and are correctly and fully labelled for collection.
- Chemical waste is stored correctly based on hazards and for no longer than is necessary.
- Take chemical waste to the appropriate chemical waste store for disposal.
- Must send fully completed chemical waste disposal request forms to estates-waste@swansea.ac.uk prior to taking chemical waste to the storage area. A paper copy of the form should be provided when taking the chemical waste to the store.

University Staff and Students are responsible for:

- Minimising raw material consumption and waste production when working, through careful work planning
- Reusing and recycling materials wherever practicable
- Identifying the intrinsic hazards of the waste produced, identifying the appropriate waste disposal route and disposing of waste accordingly
- Segregating, containing and appropriately labelling waste in order to avoid problems of mixing incompatible wastes and to avoid spreading hazards in the work area
- Bringing to the attention of the Faculty/PS Health & Safety Lead and/or Environmental Officer or other nominated person(s) any non-conformance in relation to this policy / departmental waste management procedures
- Ensuring that ALL unwanted chemicals, samples, accumulations of materials etc, including those in cupboards, fridges and freezers, are disposed of correctly at the end of their studies, project(s) or employment with the University. Further guidance can be found: **8.1.14 Departure and Decontamination of Laboratory and Workshop Space and Equipment**

Sustainability team:

- Providing guidance on waste classification
- Management of chemical waste disposal on behalf of the University via an authorised contractor(s)
- Maintain central copies of Waste Transfer Notes (WTN) and Hazardous Waste Consignment Notes (HWCN)
- Keeping abreast of developments in Welsh, UK and wider waste and environmental management legislation and standards
- Timely and appropriate communication of classification and storage advice and requirements

Waste Classification for Disposal

To dispose of chemical waste via the University Chemical Waste Store, the wastes' primary Hazardous Property (HP) must be identified on the University's Chemical Waste Disposal Form which can be found: Chemical Waste Disposal Form or via the 'Waste Management Guidance Note' section. HP codes determine if waste must be treated as hazardous waste for disposal.

To aid with the assessment and classification of waste to determine its Hazardous Property (HP) the following steps should be taken;

1. **Determine the chemical composition of the waste**
   Information on the composition of waste can be found on the manufacturers Safety Data Sheet (SDS) or held on the appropriate Chemical Risk Assessment / COSHH Assessments

   A record **must** be kept of the content of all experiment chemical solutions as unknown chemicals may pose a risk and are costly to dispose of as they must be tested to determine composition to enable classification, safe management and compliant treatment.

2. **Assess the Hazardous Properties (HP) of the waste:**

Hazard Properties (HP1 – HP15)	
HP1 – Explosive	HP9 – Infectious
HP2 – Oxidising	HP10 – Toxic (Reproduction)
HP3 – Flammable	HP11 – Mutagenic
HP4 – Irritant	HP12 – Release of acute toxic gas
HP5 – Specific Target Organ Toxicity (STOT)	HP13 – Sensitising
HP6 – Acute Toxicity	HP14 – Ecotoxic
HP7 – Carcinogenic	HP15 - Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste
HP8 – Corrosive	

Numbered HP1 to HP15 there are 3 methods in which to calculate if a waste displays a hazardous property;

a. **Calculation:** Referring to a concentration limit for a **hazard statement code(s)**,
b. **Testing:** To prove whether a particular hazardous property is present or not (typically used for the physical properties – explosive, oxidising, and flammable), or
c. The safety data sheet: If the waste is a manufactured product whose composition **has not changed**, the SDS for that specific product can be used

If the composition has not changed and a SDS can be used, the following steps can be taken to complete the Chemical Waste Disposal Form.

3. Identify the Hazardous Statement on the SDS

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006, as amended

ROUNDUP FLEX
Version 3 / GB
102000040169

2/13
Revision Date: 12.12.2024
Print Date: 15.09.2025

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Long-term (chronic) aquatic hazard: Category 2
H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- Potassium salt of glyphosate

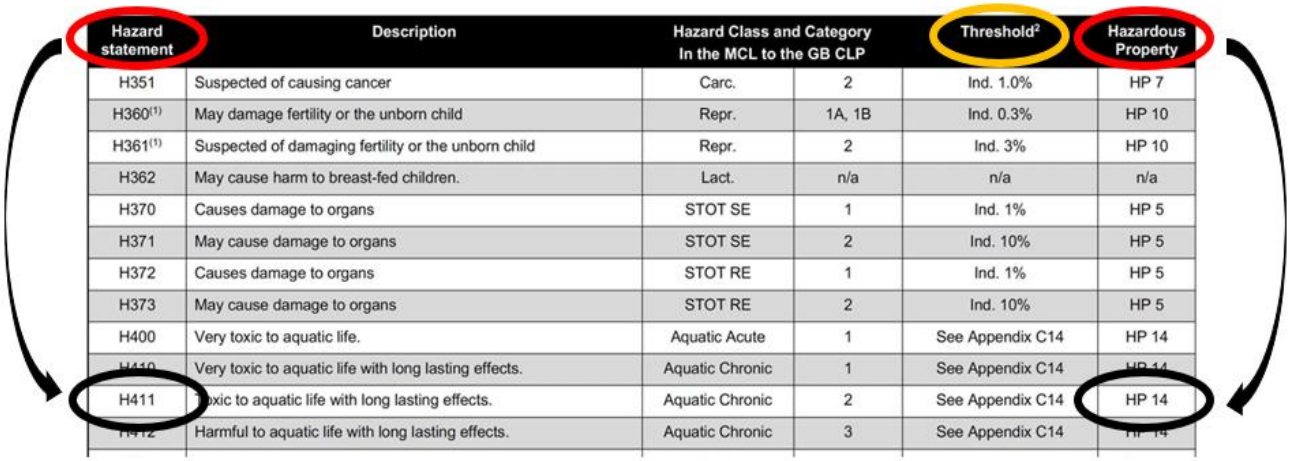
Hazard statements

H411	Toxic to aquatic life with long lasting effects.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P391	Collect spillage.
P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

4. Use Waste Technical Guidance WM3 (pages 13-17) to Convert the Hazardous Statement into the Hazardous Property HP [1]



Hazard statement	Description	Hazard Class and Category In the MCL to the GB CLP		Threshold[2]	Hazardous Property
H351	Suspected of causing cancer	Carc.	2	Ind. 1.0%	HP 7
H360[(1)]	May damage fertility or the unborn child	Repr.	1A, 1B	Ind. 0.3%	HP 10
H361[(1)]	Suspected of damaging fertility or the unborn child	Repr.	2	Ind. 3%	HP 10
H362	May cause harm to breast-fed children.	Lact.	n/a	n/a	n/a
H370	Causes damage to organs	STOT SE	1	Ind. 1%	HP 5
H371	May cause damage to organs	STOT SE	2	Ind. 10%	HP 5
H372	Causes damage to organs	STOT RE	1	Ind. 1%	HP 5
H373	May cause damage to organs	STOT RE	2	Ind. 10%	HP 5
H400	Very toxic to aquatic life.	Aquatic Acute	1	See Appendix C14	HP 14
H410	Very toxic to aquatic life with long lasting effects.	Aquatic Chronic	1	See Appendix C14	HP 14
H411	Toxic to aquatic life with long lasting effects.	Aquatic Chronic	2	See Appendix C14	HP 14
H412	Harmful to aquatic life with long lasting effects.	Aquatic Chronic	3	See Appendix C14	HP 14

H411 → Hazardous property HP14: Ecotoxic

Thresholds:
A hazardous property threshold is the specific concentration, quantity, or physical limit at which a substance or waste mixture legally transitions from being 'non-hazardous' to 'hazardous'

For example:
H351: Suspected of causing cancer (CAT2 Carc.) has a threshold concentration of 1%, so any concentration above this would be classed as hazardous by HP7 Carcinogenic.

Hazard Statement

Hazard Statements (H-codes) are standardised phrases used under CLP/GHS to describe the nature of chemical hazards and communicate the risk associated.

Each code begins with a 'H' followed by three digits; the first digit identifies the hazard type (physical, health, or environmental), and the remaining digits are sequential. e.g:

H2xx → Physical hazards → HP1 - HP3
- H221 Flammable gas (HP3 flammable)

H3xx → Health hazards → HP4 - HP13
- H312 Harmful in contact with skin (HP6 Acute toxicity)

H4xx → Environmental hazards → HP14
- H401 Toxic to aquatic life (HP14 Ecotoxic)

[1] WM3 Waste Technical Guidance P13

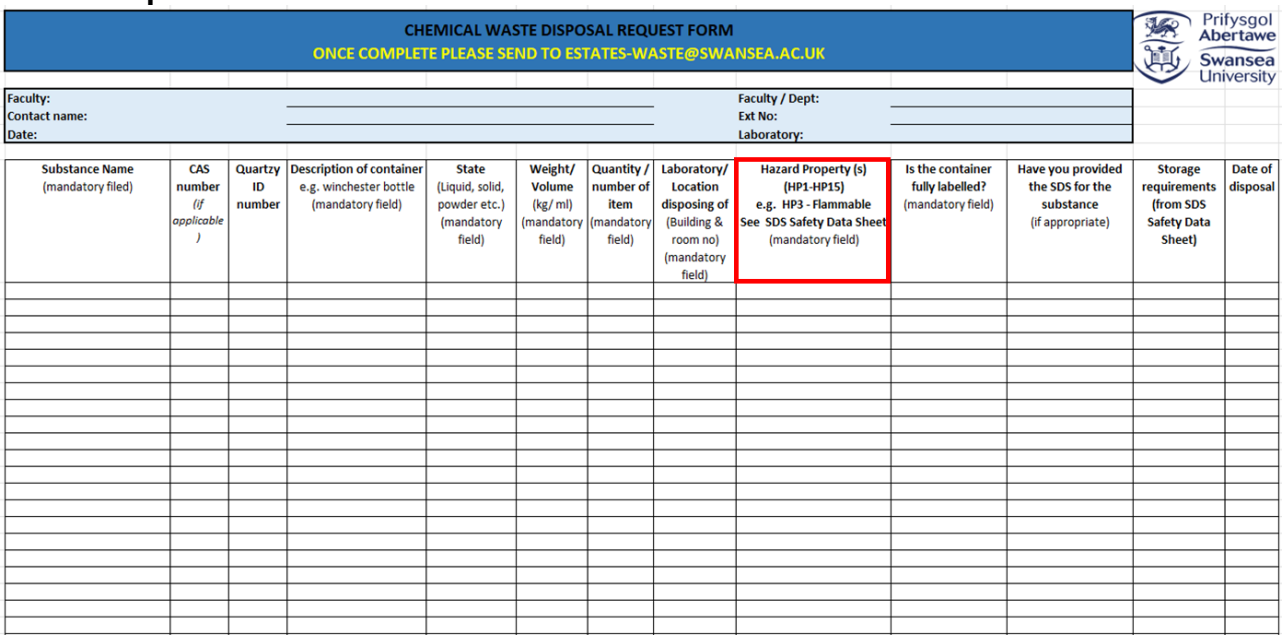
Hazard Statement	Hazardous Property	WM3 Appendix C - HP Assessment
Physical Hazards: **H2**xx e.g. H221 Flammable gas.	HP1 Explosive HP2 Oxidiser HP3 Flammable	Page C3 Page C7 Page C9
Health Hazards: **H3**xx e.g. H312 Harmful in contact with skin	HP4 Irritant HP5 Specific Target Organ/ Aspiration Toxicity HP6 Acute Toxicity HP7 Carcinogenic HP8 Corrosive HP9 Infectious (Clinical Waste) HP10 Toxic for reproduction HP11 Mutagenic HP12 Acute Toxic Gas HP13 Sensitising	Page C15 Page C19 Page C23 Page C27 Page C29 Page C33 (Not accepted in Chemical waste store) Page C37 Page C39 Page 41 (Not accepted in Chemical waste store) Page C45
Environmental: **H4**xx e.g. H401 Toxic to aquatic life	HP14 Ecotoxic	Page C47
EUH001 Explosive when dry EUH019 May form explosive peroxides EUH044 Risk of explosion if heated under confinement	HP15 Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste	C52

The system also includes two signal words, which appear on chemical labels to relate the severity of the hazards to the user, as follows:

- **Warning**: indicates a less severe hazard
- **Danger**: indicates a more severe hazard

These are used to instantly communicate the severity of a chemicals hazard to the user/consumer. You will only ever see one of the above on a label. Very low hazard classifications do not require a signal word.

5. Record the Hazardous Property (HP) of the Waste on the Chemical Waste Disposal Form



CHEMICAL WASTE DISPOSAL REQUEST FORM
ONCE COMPLETE PLEASE SEND TO ESTATES-WASTE@SWANSEA.AC.UK

Prifysgol Abertawe
Swansea University

Faculty: Faculty / Dept:
Contact name: Ext No:
Date: Laboratory:

Substance Name (mandatory filed)	CAS number (if applicable)	Quartzy ID number	Description of container e.g. winchester bottle (mandatory field)	State (Liquid, solid, powder etc.) (mandatory field)	Weight/ Volume (kg/ ml) (mandatory field)	Quantity / number of item (mandatory field)	Laboratory/ Location disposing of (Building & room no) (mandatory field)	Hazard Property (s) (HP1-HP15) e.g. HP3 - Flammable See SDS Safety Data Sheet (mandatory field)	Is the container fully labelled? (mandatory field)	Have you provided the SDS for the substance (if appropriate)	Storage requirements (from SDS Safety Data Sheet)	Date of disposal

To ensure safe storage, if the waste's Hazardous Property is HP4 or HP8 (Category 1A 1B 1C) it must be identified on the Chemical Waste Disposal form in the 'Substance Name' section if the waste is;

- Corrosive; Acid – Mineral Inorganic
- Corrosive; Base – Mineral Inorganic
- Corrosive; Acid – Organic
- Corrosive; Base – Organic

Once the Chemical Waste Disposal Form has been completed, with all mandatory fields complete, it must be emailed to estates-waste@swansea.ac.uk along with a link to or copy of all the listed wastes' SDS for assessment. An example of a correctly completed form is in Appendix A.

If the composition of the waste is unknown then use WM3 Waste Classification Technical Guidance, and seek guidance, consulting the Sustainability team via: estates-waste@swansea.ac.uk. If the HP cannot be identified wastes must be tested at cost to the Faculty/PS. Chemical Waste Store User Procedure provides more information on quantifying unknown solutions.

It is the producer's responsibility to classify their chemical waste; however, guidance will be provided by contacting estates-waste@swansea.ac.uk

If a European Waste Code (EWC) for waste disposal is required by any Faculties or PS, please consult estates-waste@swansea.ac.uk.

Waste Segregation and Safe Storage According to Hazard Classification

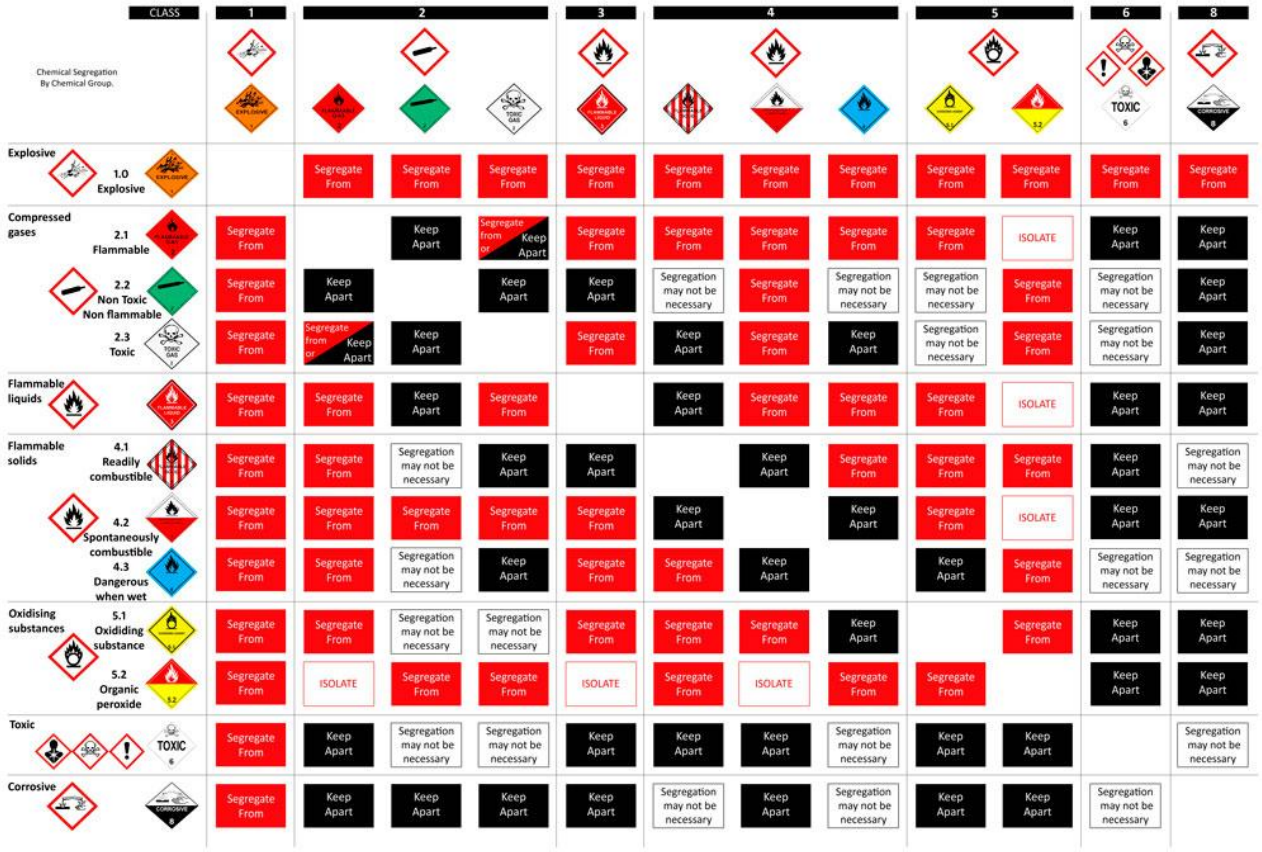
Poor or incorrect chemical storage practices can lead to inadvertent reactions between incompatible materials with the potential to cause harm, fire or even explosions. All chemicals should be stored in such a manner as to prevent incompatible materials from being accidentally mixed in the event of the breakage of one or more containers in the storage area, or to prevent the formation and build-up of reactive vapours.

Chemicals should not be stored alphabetically unless they have first been separated into their hazard classes. There are no absolute rules on how many classes of chemicals should be segregated as the degree of segregation will depend upon the risk. However, isolation of chemicals into the basic hazard classes will eliminate most accidental adverse reactions that may occur due to breakages or leakages in storage areas.

HSG71 Chemical Warehousing: The Storage of Packaged Dangerous Substances[2] acts as a reference guide for chemical compatibility and provides general recommendations for the separation or segregation of different classes of dangerous substances. However always consult the SDS (with relevant storage information transposed onto the Chemical Waste Disposal Form) and chemical risk assessment as these will provide more specific segregation or storage requirements such as refrigeration.

[2] https://www.hse.gov.uk/pubns/books/hsg71.htm

Chemical Storage by Hazard Category – HSG71



Further guidance on chemical storage please consult the applicable H&S Lead/Environmental Officer.

Guidance on Mixed Waste Organic Solvent Classification

Organic solvents can be bulked up for waste disposal. However, some are incompatible and as a result unsafe to store with one another, so it is necessary to collect in two separate categories**:**

- **Halogenated (Organic chemicals containing a halogen):**
  - Fluorine (F_2) – e.g. trifluoroacetic acid
  - Chlorine (Cl_2) e.g. chloroform
  - Bromine (Br_2) e.g. bromobenzene
  - Iodine (I_2) e.g. triiodomethane
- **Non-halogenated.**

This segregation is also necessary because halogenated substances require more extensive treatment to minimise environmental pollution during waste disposal.

All efforts should be made to record the composition of Halogenated and Non-halogenated waste to aid disposal. Composition should be captured as best as possible on the chemical waste disposal label placed on the external surface of the Winchesters, and on the Chemicals Waste Disposal Form for disposal.

For example:

- Non-halogenated waste containing various amounts of Ethanol, Methanol, Ethyl Acetate, Acetone

- Halogenated waste containing varying amounts of DCM, Chloroform.

In waste terms, Halogenated waste only refers to organic chemicals/solvents. For example, a 50% sodium chloride solution would not be halogenated waste, but would be aqueous inorganic waste. If you are unsure, then further guidance can be provided by estates-waste@swansea.ac.uk

Guidance on Mixed Aqueous Waste Classification

All efforts should be made to record the composition of aqueous waste to aid disposal. Composition should be captured as best as possible on the chemical waste disposal label placed on the Winchester, and on the Chemical Waste Disposal Form for disposal.

For example:

- Inorganic acidic aqueous waste containing 0.1M HCl, 0.1M H_2SO_4 & 0.1M HNO_3 in varying proportions
- Inorganic basic aqueous waste of 0.1M NaOH in addition to other trace chemicals.

Chemical Waste Containers

Waste containers must be suitable for the type of waste being stored within; therefore, the following guidelines should be followed:

- **Glass Winchesters**: used for most chemicals, but not hydrofluoric acid (HF) waste.
- **Plastic Winchesters (HDPE / PP / PTFE)**: suitable for acids and alkalis. However, do not use for aggressive solvents, or mixtures containing aggressive solvents without first assessing suitability.
- **Containers/bottles designed for solids** must not be used for liquids wastes.
- To mitigate the risk of over pressurisation, vented caps must be utilised to allow safe pressure release.
- Bottle/container caps shall not be overtightened

Where a container (e.g. Winchester) is used for waste that previously held another chemical, the following must be adhered to:

- The container is vented and cleaned ensuring it does not contain any residue that could react with the waste.
- The previous contents label is either:
  - Fully removed, or
  - Fully redacted
- Checked that it is physically sound with no cracks, chips or punctures.
- The container is liquid tight with a suitable cap/lid

All waste containers must be clearly labelled as '**waste**' and shall detail the contents of the container (e.g. halogenated waste) and have the appropriate GHS hazard symbols attached.

It is the responsibility of the waste producer to check the condition of all Winchesters and containers prior to disposal. Colleges/PS/Research groups are required to source their own waste bottles or Winchesters for waste disposal. Email estates-waste@swansea.ac.uk for details.

Waste containers (glass or plastic) must not be overfilled. They should never be filled more than 3/4 full. Failure to adhere to these requirements will result in the Waste containers not being accepted at the store.

Guidance with respect to suitable containment and packaging is outlined within individual chemical SDS.

Figure 1 – Left to right: Maximum fill height of a waste container. Example consequence of overfilling &/or incorrect use of glass Winchesters

Disposal

Once the wastes primary hazardous property has been identified, please see **8.1.5 WMP** Chemical Waste Store User Procedure.

For further guidance please contact Estates-Waste@Swansea.ac.uk

Forms & Labelling: All relevant forms, labels & further waste guidance found here.

Swansea University
Prifysgol Abertawe

Appendix A
Example – Completed Chemical Waste Disposal Form

CHEMICAL WASTE DISPOSAL REQUEST FORM

ONCE COMPLETE PLEASE SEND TO ESTATES-WASTE@SWANSEA.AC.UK

Prifysgol Abertawe
Swansea University

Faculty:	FSE	**Faculty / Dept:**	Chemistry
Contact name:	Technicians	**Ext No:**	4444
Date:	21 May 2026	**Laboratory:**	G336

Substance Name (mandatory filed)	**CAS number** *(if applicable)*	**Quartzy ID number**	**Description of container** e.g. winchester bottle (mandatory field)	**State** (Liquid, solid, powder etc.) (mandatory field)	**Weight/ Volume** (kg/ ml) (mandatory field)	**Quantity / number of item** (mandatory field)	**Laboratory/ Location disposing of** (Building & room no) (mandatory field)	**Hazard Property (s) (HP1-HP15) e.g. HP3 - Flammable See SDS Safety Data Sheet** (mandatory field)	**Is the container fully labelled?** (mandatory field)	**Have you provided the SDS for the substance** (if appropriate)	**Storage requirements (from SDS Safety Data Sheet)**	**Date of disposal**
Non-halogenated waste containing: EtOH MeOH Acetone in varying proportions	N/A	N/A	5l HDPE Jerry Can with vented cap	Liquid	~4L	2	G336	HP3, HP4, HP5, HP6	Yes	Yes	Flammables	21/05/2026
37% Hydrochloric Acid	7647-01-0	SCA2222	2.5L plastic winchester	Liquid	~2L	1	G336	HP4, HP5, HP8	Yes	Yes	Corrosives	21/05/2026
Red Bag contaminated waste containing: Blue roll filter papers nitrile gloves contaminated with: HCl, MeOH	N/A	N/A	Red bag	Solid	~3kg	5	G336	HP3, HP4, HP5, HP6	Yes	Yes	N/A	21/05/2026