This Information Sheet provides guidance on general considerations to make sure hazardous chemicals are disposed of safely in order to protect both people and the environment. Further chemical safety guidance can be found in other supporting Information Sheets.

General Information

Unless stored and disposed of properly, hazardous chemical waste poses risk to both humans and the environment. Bangor University is committed to taking all necessary steps to prevent pollution of the environment, to comply with all relevant legislation and minimise its environmental impacts.

Never assume you can just throw chemical waste in the general waste bin or down the sink with lots of water to dilute it.

Many chemicals require specialist disposal. Although Health and Safety arranges formal chemical waste collections with specialist Chemical Waste Contractors, **on a day to day basis, you, as a chemical user are responsible** for the arrangements to make sure all hazardous chemical waste associated with your experiment/activity is dealt with safely and correctly. This includes ensuring:

1. Disposal is considered as part of the COSHH Assessment.
2. Understanding local arrangements ie waste bin colour coding, labelling, waste storage facilities.
3. Complying with all relevant legislative requirements. If unsure ask.
4. Storing chemical waste safely and correctly until such time it is removed from site via the formal specialist Chemical Waste Collections.

Identifying Special Waste

The Hazardous Waste Regulations 2005 outline strict requirements with regards to the disposal of certain hazardous wastes.

To decide if chemical wastes produced during experiments require specialist disposal you should refer to the European Waste Catalogue. This Catalogue contains '***absolute entries***' which define wastes that are always considered to be special waste and *'mirror entries',* wastes that are only classed as special if the concentration of the dangerous substance is above a specific concentration. **HOWEVER**, this Catalogue is an extremely complex document. The following summarises the general 'do's and don'ts':

Do's and Don'ts

- Always try to segregate organic and inorganic chemicals.
- Keep chlorinated organic liquids and non-chlorinated organic chemicals separate.
- Keep strong acids and strong alkalis separate.
- Keep flammable and oxidising chemicals separate.
- Before re-using a container check what it originally held. Even if washed out, it may contain residues that are incompatible with the new chemical leading to fire, explosion or toxic gas.
- **NEVER** use Winchesters that held concentrated or fuming sulphuric acid for any other chemical.
- Do use vented containers if you think there could be a risk of a build-up of pressure. Many Schools use colour coded lids to help you work out which are vented.

If the information provided with a chemical eg Material Safety Data Sheet, container label includes any of the following symbols it should be dealt with as hazardous chemical waste.

The 'New CLP' columns relate to the *Classification, Labelling and Packing Regulations (CLP) which come into full effect on 1st June 2015. Hazard Symbols changed and Safety (S) and Risk (R) Phrases were replaced with Hazard (H) and Precautionary (P) Statements*. **Please be aware you could sometimes see a mixture of both if historical chemicals remain.**

Old Hazard Symbol & Risk Phrase		CLP Symbol & Hazard Statement		Consign as HAZARDOUS WASTE if:	Comments
	**EXPLOSIVE** **R1 – R6**		**EUH001, EUH006**	Always consign as hazardous waste	
	**OXIDISING** **R7**		**H242**	Solids – always consign as hazardous waste Liquids – see Comments	If oxidising properties of solids have been neutralised by dissolving in water as part of the experimental process the waste will not be classified as hazardous providing it doesn't contain any other hazardous substances above the respective threshold limits
	**OXIDISING** **R8 – R9**		**H270 – H271**	Solids – always consign as hazardous waste Liquids – see Comments	If oxidising properties of solids have been neutralised by dissolving in water as part of the experimental process the waste will not be classified as hazardous providing it doesn't contain any other hazardous substances above the respective threshold limits

Old Hazard Symbol & Risk Phrase		CLP Symbol & Hazard Statement		Consign as <u>HAZARDOUS WASTE</u> if:	Comments
	**HIGHLY FLAMMABLE / FLAMMABLE** **R10 – R19**		**H224 – H226** **H220 – H221** **H250** **EUH014, EUH018, EUH019**	Always consign as hazardous waste unless you are sure that processes during the experiment have rendered the material non-flammable	Tests for flammability are given in Appendix C of the Hazardous Waste Technical Guidance WM2. **YOU MUST** seek guidance from your Departmental / College Safety Co-ordinator before attempting such tests
	**VERY TOXIC / MUTAGENIC (Class 1/2) / CARINOGENIC (Class 1/2)** **R26 – R28** **R45 – R46** **R49**	 	**H330, H310, H300** **H350, H340** **H350i**	Consign as hazardous waste if the concentration of the substance is: **Greater than 0.1%**	The concentrations of these substances are 'Additive' eg *if there two of these substances in the hazardous waste each at a concentration of 0.1% the overall concentration is 0.2% and therefore the waste is treated as hazardous*
	**TOXIC** **R23** **R24** **R25**		**H330, H331** **H311** **H301**	Consign as hazardous waste if the concentration of the substance is: **Greater than 3%**	The concentrations of these substances are 'Additive' eg *if there two of these substances in the hazardous waste each at a concentration of 3% the overall concentration is 6% and therefore the waste is treated as hazardous*
	**REPRODUCTIVE TOXIN** **R60 - may impair fertility** **R61 - may harm unborn child**		**360F** **360FD**	Consign as hazardous waste if the concentration of the substance is: **Greater than 0.5%**	

Old Hazard Symbol & Risk Phrase		CLP Symbol & Hazard Statement		Consign as <u>HAZARDOUS WASTE</u> if:	Comments
	**REPRODUCTIVE TOXIN** **R62 – R63** **possible risk of impaired fertility and damage to the unborn child**		**H631fd**	Consign as hazardous waste if the concentration of the substance is: **Greater than 5%**	
	**CORROSIVE** **R34** **causes burns**		**H314**	Consign as hazardous waste if the concentration of the substance is: **Greater than 5%**	The concentrations of these substances are 'Additive' eg *if there two of these substances in the hazardous waste each at a concentration of 5% the overall concentration is 10% and therefore the waste is treated as hazardous.* **See example** on hydrochloric acid and sodium hydroxide below
	**CORROSIVE** **R35** **causes severe burns**		**H314**	Consign as hazardous waste if the concentration of the substance is: **Greater than 1%**	The concentrations of these substances are 'Additive' eg *if there two of these substances in the hazardous waste each at a concentration of 1% the overall concentration is 2% and therefore the waste is treated as hazardous*
	**IRRITANT** **R41** **risk of serious damage to the eyes**		**H318**	Consign as hazardous waste if the concentration of the substance is: **Greater than 10%**	The concentrations of these substances are 'Additive' eg *if there two of these substances in the hazardous waste each at a concentration of 10% the overall concentration is 20% and therefore the waste is treated as hazardous*

Old Hazard Symbol & Risk Phrase		CLP Symbol & Hazard Statement		Consign as <u>HAZARDOUS WASTE</u> if:	Comments
	**CARCINOGEN CAT 3 / MUTAGEN CAT 3** **R40** **R68**		**H351** **H371, H341**	Consign as hazardous waste if the concentration of the substance is: **Greater than 1%**	
	**IRRITANT (Xi)** **R36 – R38** **irritating to eyes, skin and respiratory system**		**H319, H335, H315**	Consign as hazardous waste if the concentration of the substance is: **Greater than 20%**	The concentrations of these substances are 'Additive' eg *if there two of these substances in the hazardous waste each at a concentration of 20% the overall concentration is 40% and therefore the waste is treated as hazardous*
	**HARMFUL (Xn)** **R20 – R22** **harmful by inhalation, swallowing or skin contact** **R65 – may cause lung damage if swallowed** **R68 – possible risk of irreversible effects**	 	**H322, H312, H302** **H304** **H371, H341**	Consign as hazardous waste if the concentration of the substance is: **Greater than 25%**	The concentrations of these substances are 'Additive' eg *if there two of these substances in the hazardous waste each at a concentration of 25% the overall concentration is 50% and therefore the waste is treated as hazardous*
	**DANGER TO THE ENVIRONMENT (toxic or very toxic to aquatic organisms)** **R50 – R53**		**H400, H410, H411, H412, H413**	Consign as hazardous waste if the concentration of the substance is: **Greater than 25%**	The 'Additive' effect of compounds with different risk phrases R50 – R53 is complex and you should consult the European Waste Catalogue Appendix C14 for guidance

Old Hazard Symbol & Risk Phrase		CLP Symbol & Hazard Statement		Consign as <u>HAZARDOUS WASTE</u> if:	Comments
	**DANGER TO THE ENVIRONMENT (very toxic to aquatic organisms may cause long term effects)** **R50 – R53 may cause long term environmental effect**		**H400, H410, H411, H412, H413**	Consign as hazardous waste if the concentration of the substance is: **Greater than 0.25%**	Risk Phrases R50 – R53 overlap, when deciding the hazardous waste threshold for such substances it is important to consider cumulative and long term effects. Substances with such effects have lower waste threshold values than those without
	**DANGER TO THE ENVIRONMENT (dangerous to the ozone layer)** **R59**		**H420**	Consign as hazardous waste if the concentration of the substance is: **Greater than 0.1%**	