

# What is a Hazardous Waste?

## A guide to the Hazardous Waste Regulations

### Aims

You will need to read this document if you think you may be producing hazardous waste, or you either carry or collect waste. It uses a “desk-based” flowchart, with questions and answers, to help people work out if their waste is hazardous or non-hazardous. This document applies to England and Wales only.

Detailed technical guidance on assessing and classifying hazardous waste can be found in a document called [WM2](#) [1], “*Hazardous waste: Interpretation of the definition and classification of hazardous waste*”. WM2 gives comprehensive information to decide if a waste is hazardous. If you are dealing with complex hazardous waste you will find WM2 useful. This guide is not intended as a replacement for WM2 but aims to provide some simple principles behind hazardous waste assessment.

### What has changed in this version of the guide?

We have made changes to HWR01 because:

- in April 2011, the Hazardous Waste Regulations were amended to implement the revised Waste Framework Directive;
- chemicals legislation has changed how we assess waste as hazardous.

The changes include:

- the introduction of a new hazardous property H13 sensitizing;
- moving what was H13 to H15;
- the replacement of the Approved Supply List with Annex VI Table 3.2 to the Classification, Labelling and Packaging of Substances Regulation. Table 3.2 is the new place to get risk phrases for common chemicals.

We have therefore changed Figure 1 Step 5, the text to Steps 4a and 5, and Appendix A

We have made a few other changes to the guide to make it simpler to follow, such as:

- removing Steps 2 and 3 from the old Figure 1 and the old text and moving it into Appendix B. Appendix B refers to changing the “absolute” status of a hazardous waste to non-hazardous and vice versa;
- changing what was Step 4, but is now Step 2, so that it is clear what that “mirror” entry means can be hazardous or non-hazardous;
- amending Step 4b (previously Step 6b) so that a waste is considered hazardous unless it proved non-hazardous, if the producer does not know what is in the waste.

Subsequent to publication (August 2011) an error in Figure 1 was corrected, and a hyperlink for radioactive waste added

### What regulations make a waste hazardous?

The regulations relevant to assessing hazardous waste are:

- The Hazardous Waste (England and Wales) Regulations 2005 ([HWR](#)) as amended; and
- The List of Wastes Regulations (England) 2005 ([LoWR](#)) as amended, if you are in England; or
- The Hazardous Waste (Wales) Regulations 2005 ([HWR](#)) as amended; and
- The List of Wastes (Wales) Regulations 2005 ([LoWR](#)) as amended, if you are in Wales.

As part of the assessment of waste, the HWR refer you to the “List of Wastes” given in the LoWR. This list is also known as the European Waste Catalogue. It will be called the EWC in this document.

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[1] WM2 can be found at [www.environment-agency.gov.uk/hazwaste](http://www.environment-agency.gov.uk/hazwaste)

**Is my waste hazardous?**

The flowchart in Figure 1 below shows the steps involved in finding out if waste is hazardous or non-hazardous.

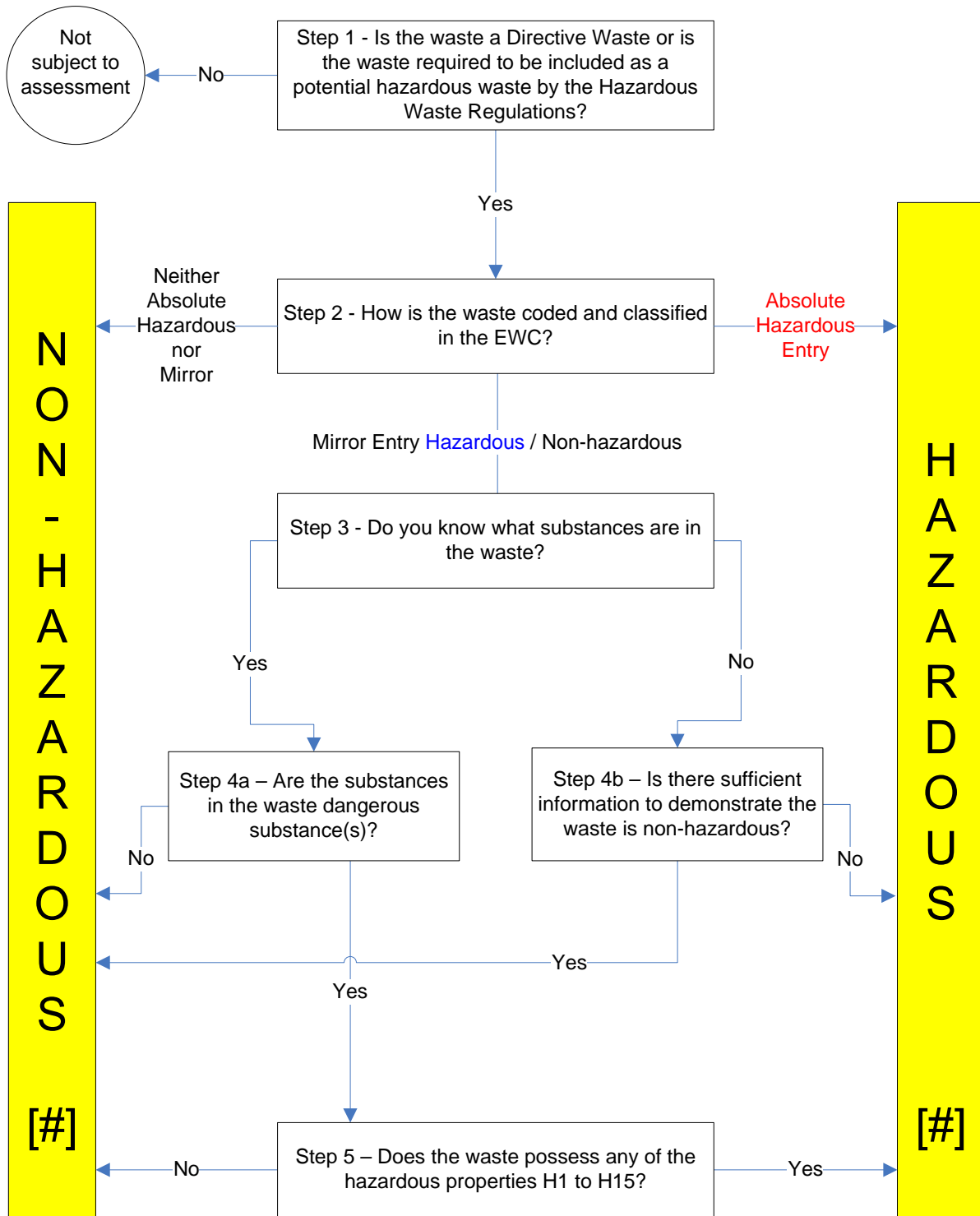


Figure 1: Hazardous Waste Assessment Methodology

**[#]** If you think that a hazardous waste has no hazardous properties or that a non-hazardous waste does have hazardous properties see Appendix B.

You should use Figure 1 by following the text below.

### Step 1 - Is the waste a Directive Waste or is the waste required to be included as a potential hazardous waste by the Hazardous Waste Regulations?

Nearly all household, commercial and industrial wastes are Directive Wastes and require assessment to determine if they are hazardous waste.

The phrase “Directive Waste” refers to European legislation called the [revised Waste Framework Directive](#) [2]. This identifies the environmental protection principles behind waste management. It also identifies which wastes are covered by these principles and those which are not.

Some wastes are completely excluded from being Directive Wastes and all waste controls; some are excluded if covered by other European legislation. Examples of exclusions include decommissioned explosives, waste waters and animal by-products. Further information on exclusions can be found in Defra’s guidance ‘Definition of Waste’ [3] and on our website: <http://www.environment-agency.gov.uk/business/regulation/128153.aspx>.

Most radioactive waste is not Directive Waste. However some radioactive waste may be subject to hazardous waste controls in certain circumstances. Further information on which radioactive wastes are subject to these controls is available on our website: <http://www.environment-agency.gov.uk/business/topics/waste/34874.aspx>

### Step 2: How is the waste coded and classified in the EWC?

#### Coding

In the EWC, individual wastes are given a six-digit code and a waste description.

The EWC contains 20 chapters that refer either to a process that produced the waste or specific waste types. The chapters are given a two-digit number, for example:

*03 Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard*

Each of these chapters has sub-chapters shown by four digits. The sub-chapters contain the unique six-digit code for each waste.

#### Applying a six-digit code

The following steps must be used to identify the correct six-digit code for a waste:

1. Find out whether the waste was produced from a source described in chapters 01 to 12 or 17 to 20. If so, work out the appropriate six-digit code of the waste, if it is listed. At this point, codes ending with ‘99’ cannot be chosen.
2. If there is no appropriate waste code in chapters 01 to 12 or 17 to 20, you must look at chapters 13, 14 and 15 to identify the waste, if it is listed.
3. If none of these waste codes apply, use chapter 16 to identify the waste, if it is listed.
4. If the waste is not in chapter 16 either, the 99 code (wastes not otherwise specified) must be used from the section of the list that matches the activity identified above in 1.

Different wastes produced by one organisation may be described in several of the chapters.

#### Classification

Some of the six-digit codes in the EWC have an asterisk next to them. These are hazardous wastes. Wastes without an asterisk are not hazardous waste. We have reproduced the EWC in Appendix A of our technical guide WM2.

Hazardous entries are known as:

- “Absolute” hazardous wastes; and
- “Mirror” hazardous wastes.

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[2] Directive 2008/98/EC

[3] [www.defra.gov.uk](http://www.defra.gov.uk)

### **“Absolute” hazardous**

These wastes are marked in the EWC with an asterisk (\*), but the waste description next to the six-digit code does not have a specific or general reference to “*dangerous substances*” in the waste description. They are automatically considered hazardous. You do not need to work out what chemicals are in the waste to find out if it is hazardous or not. However, you must identify what hazardous properties the waste has for moving and handling the waste.

We call these “*absolute entries*”, they are colour-coded red and marked with an “A” in WM2 Appendix A. For example:

13 07 01\* fuel oil and diesel A

### **“Mirror” hazardous and non-hazardous**

Some waste can be either hazardous or not, depending on whether it contains “*dangerous substances*” at or above certain levels. This waste is covered by linked (usually, but not always, two paired) six-digit entries in the EWC, called “*mirror*” entries.

These wastes have:

- a hazardous waste entry (or entries) marked with an asterisk (\*), and
- an alternative paired non-hazardous waste entry (or entries) not marked with an asterisk.

“*Mirror*” entry hazardous wastes, colour-coded blue and marked with an “M” in WM2 Appendix A, are identified because they refer to dangerous substances. They can do this in one of two ways:

1. a “*general*” reference to a dangerous substance(s), for example:

07 01 11\* sludges from on-site effluent treatment containing dangerous substances M

This entry is chosen if this waste contains any dangerous substance(s) at the required levels.

2. a “*specific*” reference to a dangerous substance(s), for example:

17 03 01\* bituminous mixtures containing coal tar M

These wastes are classified as hazardous by looking for a specific dangerous substance in the waste. In the example above that substance is coal tar. This entry is chosen only if this waste contains coal tar above specified threshold levels.

In the two examples above, if the “*mirror*” entry waste doesn’t contain general or specific dangerous substance(s) at the specified threshold levels, it is not hazardous and the appropriate non-hazardous six-digit mirror code should be chosen.

The non-hazardous mirrors for our examples above are:

07 01 12 sludges from on-site effluent treatment other than those mentioned in 07 01 11; and

17 03 02 bituminous mixtures other than those mentioned in 17 03 01

### **Non-hazardous (neither Absolute Hazardous nor Mirror Hazardous)**

This is an entry in the EWC without an asterisk. This entry is not hazardous. For example:

03 01 01 waste bark and cork

Steps 3 to 5 below only apply to finding out if waste, listed with “*mirror*” entries, is hazardous or not.

#### Step 3: Do you know what substances are in the waste?

Most producers of a “*mirror*” entry waste should have enough information about the chemical substances in their waste to know if it is hazardous, for example from safety data sheets and knowing how the waste was produced..

If they do not know what substances are in their waste, they will need to test the waste for hazardous properties (see Step 4b).

Step 4a: Are the substances in the waste “dangerous substances”?

A “substance” is “dangerous” if it is given a “risk phrase”. There are three ways to find out the “risk phrase” for a substance.

1. Use Annex VI, Table 3.2 to the Classification, Labelling and Packaging of Substances Regulation ([CLP](#)) [4]. This shows risk phrases for many common chemicals [5]. Annex VI is the most important source for risk phrases.
2. Obtain or derive risk phrases from reliable data sources such as reference books or the internet. These sources must be ‘peer reviewed’, which means that other professionals have looked at and approved the data.
3. Use risk phrases from Safety Data Sheets or other similar sources.

If none of the substances in your waste have “risk phrases” the waste is not hazardous [6] and the non-hazardous “*mirror*” EWC code can be used. If any of the substances have risk phrases, you will need to go to Step 5.

Step 4b: Is there sufficient information to demonstrate that the waste is non-hazardous?

If you do not know what is in the waste you will need to prove that it is non-hazardous. Otherwise it should be considered hazardous.

Step 5: Does the waste possess any of the Hazardous Properties H1 to H15?

Waste containing dangerous substances (those with risk phrases) may be hazardous if the concentrations of those substances are above specified thresholds. You can check this by:

Testing, for example, checking the flashpoint of a liquid waste.

Comparing the concentration of the substances in your waste with the threshold values for their “risk phrases”.

Sometimes a combination of both of the above is needed. The test methods and threshold values are referenced in WM2.

The waste will be hazardous if:

- it contains a dangerous substance(s) with a concentration at or above the appropriate threshold; and/or
- a test or calculation shows a hazardous property.

If it is hazardous, then the hazardous “*mirror*” EWC code entry must be used.

Waste will not be hazardous if

- it contains dangerous substances but they are below the threshold limits; and/or
- tests do not show a hazardous property.

If either of the above apply, the non-hazardous “*mirror*” EWC entry should be used.

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[4] Regulation (EC) No 1272/2008

[5] Chemical is the common term for substances (a chemical element or one of its compounds, including any impurities) and preparations (a mixture of substances).

[6] The exception to this is clinical waste which could be H9 infectious as there are no risk phrases for infectious agents – see WM2 for further details.

## Appendix A Hazardous Properties

Wastes on the EWC are hazardous if they have one or more of the following hazardous properties:

H1	“Explosive”: substances and preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.
H2	“Oxidizing”: substances and preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.
H3A	<p>“Highly flammable”</p> <ul style="list-style-type: none"> <li>- liquid substances and preparations having a flash point below 21°C (including extremely flammable liquids), or</li> <li>- substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or</li> <li>- solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or be consumed after removal of the source of ignition, or</li> <li>- gaseous substances and preparations which are flammable in air at normal pressure, or</li> <li>- substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.</li> </ul>
H3B	“Flammable”: liquid substances and preparations having a flash point equal to or greater than 21°C and less than or equal to 55°C.
H4	“Irritant”: non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.
H5	“Harmful”: substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.
H6	“Toxic”: substances and preparations (including very toxic substances and preparations) which, if they are inhaled or ingested or if they penetrate the skin, may involve serious, acute or chronic health risks and even death.
H7	“Carcinogenic”: substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.
H8	“Corrosive”: substances and preparations which may destroy living tissue on contact.
H9	“Infectious”: substances and preparations containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms.
H10	“Toxic for reproduction”: substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.
H11	“Mutagenic”: substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.
H12	Waste which releases toxic or very toxic gases in contact with water, air or an acid.
H13	“Sensitizing”: substances and preparations which, if they are inhaled or if they penetrate the skin, are capable of eliciting a reaction of hypersensitization such that on further exposure to the substance or preparation, characteristic adverse effects are produced. [As far as testing methods are available].
H14	“Ecotoxic”: waste which presents or may present immediate or delayed risks for one or more sectors of the environment.
H15	Waste capable by any means, after disposal, of yielding another substance, e.g. a leachate, which possesses any of the characteristics above.

## Appendix B Deciding that a waste listed as hazardous is non-hazardous and vice versa

The Secretary of State, the Welsh Assembly, Scottish Executive or Northern Ireland Department of the Environment can, in exception cases, decide:

- that a waste identified as non-hazardous on the List of Wastes should be hazardous waste, because it possesses hazardous properties;
- that a waste identified as hazardous on the List of Wastes should be non-hazardous waste, because it does not possess hazardous properties.

If you are in England and know about such waste, then you can contact the Hazardous Waste team in Defra and provide detailed evidence to support this. Defra can be contacted via the Defra Helpline by telephone on 08459 33 55 77 or by email at [helpline@defra.gsi.gov.uk](mailto:helpline@defra.gsi.gov.uk).

If you are in Wales contact the Welsh Assembly by telephone on:

English speakers: 0300 0603300 or 0845 010 3300.

Welsh speakers: 0300 0604400 or 0845 010 4400.

or by e-mail at: [DeshWebCorrespondence@Wales.GSI.Gov.UK](mailto:DeshWebCorrespondence@Wales.GSI.Gov.UK)

Waste will only be classified after the appropriate organisations have been consulted. We will publish any decisions made by the Secretary of State or Welsh Assembly Minister.

Note that the Secretary of State or Welsh Assembly Minister must not decide to treat waste as non-hazardous if it has been diluted or mixed with the aim of lowering the initial concentrations of hazardous substances to a level below the thresholds for defining waste as hazardous.

At the time of publication of this guidance, no wastes have been given a classification by the Secretary of State or the Welsh Assembly Minister.