



Guidelines for Classification of Waste

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Glossary

Waste code	Six digits code identifying the waste in List of Waste
List of Waste	Organised system of waste groups, sub-groups and individual waste entries used for classification of waste
Waste entry	One line in the List of Waste. Waste entry consists from waste code, waste name and indication if the waste is hazardous.
Hazardous entry	Waste entry which is marked with an asterisk
Non-hazardous entry	Waste entry which is not marked with an asterisk
Mirror entry	Two waste entries, describing the same waste, but one of them contains substances which make the waste hazardous.
99 code	A waste code which has "99" as the last two digits
Linked code	A waste entry which refers to another waste using wording "... other than those mentioned in XX XX XX" in the waste name or referring to another entry or entries in the waste name
Waste treatment code	Code identifying what is happening to produced or collected waste.
R code	This code is assigned to operations leading to recovery of material or energy from waste.
D codes	This code is assigned to disposal operations. These are aimed on reduction of negative impact of waste on human health or environment

1 Introduction

The purpose of this guidance is to lead inspectors and other interested persons step-by-step through the process of waste classification, resulting in full identification of waste for the purpose of waste inventory and reporting.

Classification of waste means assigning to waste the appropriate waste code and identify its hazardous properties. First of all, it is important to decide, if the substance or object is waste, which is controlled by the Waste Management Code.

The definition of waste and classification of waste is used by the EU Member States for more than 25 years. The knowledge and experience collected lead to continuous improvement in defining what is waste and what is not and to précising methods of identification of hazardous properties in waste.

In addition to waste classification, a waste stream is characterised by waste treatment codes (R and D codes). This guidance provides explanation of waste treatment codes.and advice on their use.

This Guidance should be understood as an introduction to waste classification, explaining the basic steps needed for classification of waste and allowing further improvement in classification to achieve full compliance with the EU approach.

The Guidance is divided in four parts. The first part provides information needed for deciding if the material in question is waste or not and if the waste is regulated by the Waste Management Code of Georgia. Second part introduces the List of Waste, its use and method for identification of a waste code best defining the waste in question. The third part discusses hazardous properties of waste and method of assigning hazardous properties to waste in question. The fourth part provides information of the waste treatment codes.

The “Study to develop a guidance document on the definition and classification of hazardous waste” prepared by BIPRO GmbH, Germany for the European Commission in 2015 and “Guidance on the legal definition of waste and its application” prepared by the Department for Environment, Food and Rural Affairs (Defra), UK were used as source of information for development of these guidelines and are recommended for further reading.

This Manual is supported by forms and tables, aimed to enable accurate and efficient process of waste characterisation.

2 What is waste?

2.1 Why regulate waste?

The primary objectives of waste management legislation are to protect the environment and human health, to reduce the overall impacts of resource use and to improve the efficiency of resource use. But these are not the only objectives. It may be worth setting out, therefore, the main reasons for regulating waste as these will be behind any decision as to whether something is, or is not, waste. The main reasons are:

- (a) the risk to the environment and human health;
- (b) waste as a resource; and
- (c) the economic dimension.

First and foremost, waste is regulated because it may present a risk to the environment and human health. This risk derives from waste's collective qualities – its nature and composition, the variety of sources from which it originates and its potential to cause harm to the environment and human health. Waste is by definition something that is not wanted by its producer and by its nature has the potential to pollute the environment and to harm human health. Waste can constitute a burden to its holder which may lead to its being dealt with in socially or environmentally unacceptable ways or in its being abandoned or dumped. The composition of waste is often uncertain and it is sometimes hazardous.

Waste also often attracts a stigma which is not traditionally associated with products which are manufactured, and can be sold only if there are consumers willing to pay for them. In other words, it is often the case that the producers and holders of waste do not have the same self-interest to ensure the provision of appropriate safeguards as those who extract raw materials or manufacture and place products on the market.

For these reasons, waste is the subject of legislation to protect the environment and human health from its potentially adverse impacts; and to ensure that it is safely recovered or disposed of.

The key environmental and human health objectives of the Waste Management Code itself are set out in Article 5 (1) and require:

“to ensure that waste management is carried out without endangering human health, without harming the environment and, in particular:

- (a) without risk to water, air, soil, plants or animals;
- (b) without causing a nuisance through noise or odours; and
- (c) without adversely affecting the countryside or places of special interest.”

However, waste is also a resource, albeit one which may present risks to the environment and human health. But the environment is to be protected not only through the application of waste management controls but also by promoting the efficient use of resources. The Article 5(2) of the Waste Management Code recognises that, in order to achieve a high level of environmental protection, action should not only be taken to ensure the safe recovery and disposal of waste but also to give priority to the prevention of waste – including the re-use of products and the recycling of substances and objects that have been discarded and are waste. Article 1 of the Waste Management Code therefore addresses not only the protection

of the environment and human health but also sets the objective of reducing the overall impacts of resource use and improving the efficiency of such use. And Article 4 of the Waste Management Code requires to apply a waste hierarchy as a priority order in waste prevention, waste management legislation and waste policy. The waste hierarchy identifies waste management options and ranks them in order of environmental impact as follows:-

- Prevention;
- Preparing for re-use;
- Recycling;
- Other recovery, e.g. energy recovery; and
- Disposal.

The most sustainable and environmentally friendly option is to reduce the amount of waste which is produced in the first place. The hierarchy promotes this but also seeks to encourage the efficient use of waste as a resource. To this end, recycling is to be preferred to other recovery operations as in many cases recycling will have an ecological advantage in terms of the quantities of energy and raw materials used and saved.

Waste is not only an environmental issue – it is also an economic issue. Waste, whether recyclable or not, is to be regarded as ‘goods’ the movement of which, must in principle not be prevented in accordance with EU principle of free movement of people and goods.

2.2 Definition of waste

The Waste Management code in the Article 3 (a) defines waste as:

“...any substance or object which the holder discards or intends or is required to discard...”

This definition is the same as in the Article 3(1) of the Waste Framework Directive³⁰ (WFD) and ensures compatibility with EU legislation. It also allows application of EU experience in defining what waste is.

This definition states who is the responsible person – “holder” of waste, what activity is regulated – “to discard” and when is the activity regulated - when it is being done, intended or required.

Holder of waste is defined in the Article 3 (p) of the Waste Management Code and means the producer of the waste (anyone whose activities produce waste from its activities) or the natural or legal person who is in possession of it. Note that the term “holder” has a really wide meaning due to the second part of definition “...person who is in possession of waste.” Thus the holder can be producer, operator of storage, treatment or disposal facility, transporter in country, importer or exporter. Usually, holder is the person who signs a contract on waste movement, storage, treatment or disposal. For example, if an illegal action occurs in case of waste transport, it should be investigated if it is the fault of the driver, who neglected his duties or fault of the transport company as legal person.

A substance or object becomes waste when it is discarded. Discard has a special meaning which is not necessarily the same as its dictionary meaning. It includes not only the disposal of a substance or object but also its recovery or recycling. Whether a substance or object is being discarded has to be decided on a case-by-case basis, and taking account of all the circumstances, to ensure the aims of the WFD (i.e. protection of the environment and human health) are not undermined. In other words, each case must be assessed on its own merits.

In addition to the above, a substance or object becomes waste even when its holder plans to discard it. Even absence of evidence, that a substance or object can be directly used in the production can be sufficient for categorising that the substance or object is waste.

2.3 Exclusions from the scope of the Waste Management Code

The effect of Article 2(2) is to exclude specified wastes from the scope of the Waste Management Code. However, this article does not declassify specified substances as waste. What this provision does is to provide exclusions from the scope of the Waste Management Code for the specified types of waste. The following shall be excluded from the scope of the Waste Management Code:

- a) radioactive waste;
- b) gaseous effluents emitted into the atmosphere;
- c) land (in situ) including unexcavated contaminated soil and buildings permanently connected with land;
- d) uncontaminated soil, naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state;
- e) waste waters, pollution of water bodies (including the Black Sea) with waste waters and/or waste;
- f) decommissioned explosives;
- g) faecal matters / manure and other non-hazardous materials of a natural origin used in farming or forestry;
- h) mining waste, i.e. waste resulting from the prospecting, extraction, processing and storage of mineral resources and the working of quarries.
- i) decommissioned chemicals of military purposes
- j) non-contaminated sludge excavated in the course of exploitation and rehabilitation measures of land reclamation systems, which are subject to disposal on the sale lines of the system.

The full definition of excluded waste must be applicable for excluding waste from the scope of Waste Management Code. For example, under item d) not all “uncontaminated soil, naturally occurring material excavated in the course of construction activities” is excluded from the scope of the Waste Management Code, but only that portion of it for which “it is certain that the material will be used for the purposes of construction in its natural state”.

Similarly, under item g) not all “faecal matters / manure and other non-hazardous materials of a natural origin” are excluded from the scope of Waste Management Code, but only that part of it which is “used in farming or forestry” as fertilizer.

2.4 By-Products

Practical application of the definition of waste often requires a decision, if the substance or object is waste or by-product. There is no special regulation on by-products in the Waste Management Code, but Waste Framework Directive provides useful guidance on this issue.

Article 5(1) of the Waste Framework Directive provides that a substance or object, resulting from a production process, the primary aim of which is not the production of that item, may be regarded as a non-waste by-product – but only if all of the following conditions are met:

- (a) further use of the substance or object is certain;
- (b) the substance or object can be used directly without any further processing other than normal industrial practice;
- (c) the substance or object is produced as an integral part of a production process; and
- (d) further use is lawful, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

2.5 Criteria for deciding on waste:

A set of criteria in form of questions was developed for deciding, if a substance or object is waste. These questions are formulated for “YES/NO” answers. After each question an advice is formulated what conclusion should be made. These questions are prioritised, they must be used from the first question and continue to the last question. In case of a “YES” answer the process ends, otherwise the following question shall be used.

Q.1: Is the substance or object produced with the intention that it will be used or marketed or is it being re-used for the same purpose for which it was originally conceived?

If the answer to either of these questions is “yes” the substance or object is not waste.

If the answer is “no” or “not known” continue with the next question.

Q.2: Is the substance or object a by-product of a production process?

Production residues are likely to be waste. However, production residues can be classified as by-products if specified conditions are met. If a substance or object is a by-product it is not waste.

If the answer “yes” can be given to all of the following five questions, this will help indicate that a residue is a by-product and not waste:

- Is further use of the substance or object not just a possibility but a certainty?
- Can it be used directly, without any further processing prior to its use?
- Has it been produced as an integral part of a production process?
- Does it fulfil all relevant product, environmental and health requirements for the specific use to be made of it; and
- Is an adverse impact on the environment or human health fully excluded in further use?

If even one of the questions is answered “NO” the substance or object can not be considered a by-product. Continue with the next question.

Q.3: Does the substance or object need to be disposed of?

A substance or object might have to be disposed of because of a legal requirement. It might also have to be disposed of because of its condition or its continued use might be dangerous (e.g. some out-of-date medicines).

If the answer is “yes”, it is waste.

If the answer is “no” or “not known”, continue with the next question

Q.4: Has the substance or object been transferred to a disposal operation or to a recovery operation?

If a substance or object is sent on for disposal or recovery that will indicate that it is waste.

It is sometimes difficult to tell what a “recovery operation” is and what just the normal use of a product is. For example, “use as a fuel” could be either, depending on the circumstances. However, if a particular operation is generally accepted as being a common way of recovering waste, that may indicate that it is a recovery operation. Disposal and recovery operation codes are listed in Annexes I and II to the Waste Management Code. For example:

- If waste oils are treated by filtration, the code **R9** “Oil re-refining or other reuses of oil” shall be used
- If scrap metals are used for production of new metal, the code **R4** “Recycling/reclamation of metals and metal compounds” shall be used
- If waste is incinerated and produced energy is used for generation of heat, steam or electricity, the code **R1** “Use principally as a fuel or other means to generate energy” shall be used
- If waste is disposed to a landfill or dump, the code **D1** “Deposit into or on to land” shall be used
- If waste is incinerated without use of energy, the code **D10** “Incineration on land” shall be used

If the answer is “no” or “not known” continue with the next question.

Q.5: Does the substance or object have a low economic value?

Positive economic value means that first person gives object to second person and the second person pays money to the first person. Negative economic value means that the first person gives the object and money to the second person. For example, waste is delivered to landfill and the waste producer pays for accepting the waste for disposal.

If the substance or object has a low or negative economic value, this points to its being waste since it is a burden on the producer or holder who then may have an incentive to get rid of it.

If the answer is “yes” the substance or object is waste.

If the answer is “no” or “not known” continue with the next question.

Q.6: Is the substance or object hazardous or polluting?

Wastes can be quite harmless in themselves, and they may be processed without harmful impacts on the environment. On the other hand, some non-waste products are polluting or hazardous (e.g. poisonous chemicals). So this question of harm is not always relevant to the issue of whether something is waste.

The question does become relevant where the substance or object has become or is contaminated, is leftover, unwanted, or a burden on its holder. In these circumstances, the hazardous or polluting nature of the substance or object can indicate that it is waste.

If the answer is “yes” the substance or object is waste.

If the answer is “no” or “not known” continue with the next question.

Q.7: Is the substance or object still suitable for its use?

Substances or objects that can no longer be used for their original purpose (e.g. because they are out-of-date) or have become damaged or unsuitable for use are likely to be waste.

If the answer is “yes” the substance or object is not waste.

If the answer is “no” or “not known” continue with the next question.

Q.8: Is the substance or object being given or sold to others as second hand goods?

A substance or object may be unwanted by one owner, but it is given or sold to be used for its original purpose without needing any processing or treatment.

Example is “second hand” textiles. But, only those textiles which are accepted for second hand sales. Textiles which are deposited in collection points should be all considered waste and only after sorting the suitable part of them is not waste and the rest remains waste.

If the answer is “yes” the substance or object is not waste.

If the answer is “no” or “not known” the substance or object is waste.

2.6 If a substance or object is waste - when does it cease to be waste?

Once a substance or object has been discarded and is waste, something usually needs to be done to it for it to cease to be waste. This can range from something relatively minor to quite extensive processing, comprising one or more recovery operations. It may be necessary for waste to undergo a series of recovery operations before it ceases to be waste. The following criteria can help decide whether a waste has ceased to be waste:

Q.1: Has the waste only been pre-treated, rather than fully recovered or recycled?

If waste has gone through one treatment but needs further treatment before being ready for re-use, this will indicate that it has not ceased to be waste. Sorting and reducing the size (pre-treatment) often fall into this category. Pre-treatment only enables further recovery or recycling.

If the answer is “yes” the substance or object remains waste.

If the answer is “no” or “not known” continue with the next question.

Q.2: Have all unwanted substances been removed from the waste?

Often, waste is contaminated because of its origins or previous use. It will not cease to be waste until the contamination is removed – either so that it can be used again for its original purpose or made into a new product.

Example: Used oils are waste, but after filtration or distillation used oils can be used again for their original purpose thus are not waste.

If the answer is “yes” the substance or object is not waste.

If the answer is “no” or “not known” continue with the next question.

Q.3: Is recovered/recycled material fully suitable as a replacement for a non-waste material?

To cease to be waste, the material that results from the recovery or recycling of waste must be fully suitable as a replacement for the non-waste material for which it is substituting.

Example: Pellets produced from waste plastics should not be considered waste because they can fully replace original plastic pellets.

If the answer is “yes” the substance or object is not waste.

If the answer is “no” or “not known” continue with the next question.

Q.4: If the waste has been fully recovered/recycled, is it certain to be used?

Only if there is a genuine market for the recovered or recycled material and its future use is certain, it is likely to cease to be waste. Otherwise it will remain a waste.

Example: A waste sorting plant can produce waste paper sorted by categories, so it is suitable for direct use in a paper mill (= fully recovered). But until the sorted waste paper is delivered and accepted by a paper mill, it remains waste. Waste paper stored at a recycling facility or landfill should be always considered as waste.

If the answer is “yes” the substance or object is not waste.

If the answer is “no” or “not known” continue with the next question.

Q.5: Can the recovered/recycled material be used without undermining the aims of the waste legislation?

The recovered or recycled material will not cease to be waste if it poses greater risk to the environment or human health than the non-waste material it replaces, as this would undermine the aims of the Waste Management Code.

Example: waste with high calorific value can be incinerated without pre-treatment, but plant using this fuel must be considered as waste incinerator (and follow regulations for waste incineration).

If the answer is “yes” the substance or object is not waste.

If the answer is “no” or “not known” continue with the next question.

Q.6: Has the waste been converted or transformed into a distinct product?

In difference to the previous question, if the waste has been converted or transformed to the extent that it has become a new product in its own right, it may no longer be waste. The new product needs to be distinct from the original waste and minor changes to its composition are unlikely to be sufficient.

This question help to differentiate between real recycling, which leads to a new product and false recycling. This is an attempt to provide legal definition of a product made from processed waste and is more important for legal than practical purposes.

If the answer is “yes” the substance or object is not waste.

If the answer is “no” or “not known” the substance or object remains waste.

3 Waste classification and assessment

3.1 Introduction

This section explains how to classify a waste and identify its hazardous properties. You need to collect information on each waste so you can classify it. The classification:

- must be worked out before the waste is moved, disposed of or recovered
- must be included on waste documents and records
- determines if rules for hazardous waste movement apply to the waste
- is needed to identify a suitably authorised waste management option

The responsibility to classify waste and if needed identify its hazardous properties is always on waste producers. In case of municipal waste, the collection company has the duty to classify waste. The general practice is that the collection company reports to the municipality. In case the collection service is outsourced to the private company. The duty of reporting should be part of the contract with the municipality.

Representatives of the State (inspectors, ministerial employees) shall give only recommendations to waste producers/holders on waste classification. They shall never order the waste producer/holder what code shall be assigned to his waste. This principle must be always followed because the legal responsibility for managing waste is on waste producers and waste holders.

3.2 Waste classification and assessment procedure

The procedure for classification of waste, consists from 6 steps.

Steps to classify the waste

1. check if the waste needs to be classified
2. identify the code or codes that may apply to the waste
3. identify the assessment needed to select the correct code

Steps to assess the waste

4. determine the chemical composition of the waste
5. assess the hazardous properties of the waste
6. assign the classification code and describe the hazardous properties

Step 1: Check if the waste needs to be classified

You need to ensure the material is waste, and needs to be classified. Nearly all household, commercial and industrial wastes do need to be classified. This includes waste from domestic households. The material does not need to be classified if it's either:

- not waste, or
- a waste that is excluded from the scope of Waste Management Code (Art. 2 (2))

The previous section of this guideline provides advice when a substance or object is waste according to the definition of the Waste Management Code.

If the material is waste, and needs to be classified, proceed to step 2.

Step 2: identify the code or codes that may apply to the waste

The second step is to identify how the waste is classified in the List of Waste (LoW). This classification identifies what assessment is needed before a final LoW code can be assigned to the waste.

List of Waste (LoW) is a catalogue of all wastes divided into 20 waste groups. Waste groups must be used in the correct order of precedence which is defined in the chapter 3.4. The chapters contain both the classification codes and the descriptions of each code (together referred to as an 'entry' in the list).

The classified waste may fit into several entries and the search for the most appropriate waste code should not stop at the first suitable entry. Preferably, the entire LoW should be checked and all suitable waste entries should be identified. This method will help you identify the most appropriate codes. Some codes are linked so it is common to identify more than one code at this stage.

Once you have done this you proceed to step 3.

Step 3: identify the assessment needed to select the correct code(s)

You now need to work out if an assessment is needed and how it affects the classification of the waste. The assessment needed depends on the type of code(s) identified. Codes are divided into three types of entry:

- wastes that may be hazardous or non-hazardous, known as 'mirror' entries
- wastes that are always hazardous, known as hazardous' entries
- wastes that are always non-hazardous, known as non-hazardous' entries.

'mirror' entries

"Mirror entry" is a pair of codes in the same subgroup of the List of Waste, where:

- i) first entry shows waste containing hazardous substances and/or mixtures, it is considered hazardous waste and is marked with an asterisk (*);
- ii) second entry shows the same type of waste but it does not contain hazardous substances and/or mixtures, is it not classified as hazardous and is not marked with an asterisk (*).

Example:

11 01 11* aqueous rinsing liquids containing hazardous substances

11 01 12 aqueous rinsing liquids other than those mentioned in 11 01 11

If the waste is classified under 'mirror' entries, you will need to continue with the assessment of hazardous properties in steps 4 and 5.

Waste holders have a duty to determine if a "mirror entry" waste is hazardous or non-hazardous. A waste code cannot be assigned until steps 4 and 5 have been completed.

'hazardous' entries

If a waste code is marked with an asterisk, it is classified as a 'hazardous' entry. The waste is hazardous waste and further assessment cannot change the classification. Waste must be assessed to determine which hazardous properties it displays. Follow steps 4 and 5 for hazardous property assessment

There are exceptions where 'hazardous' entries are linked to other entries and additional consideration may be needed. The other entries may need to be considered to determine if they are more appropriate to the waste.

The link to other entries is expressed by wording "... other than those mentioned in XX XX XX" in the waste name. In such cases it is needed to check the linked waste entry and assess if it influences selection of code for waste in question.

'non-hazardous' entries

If a waste is classified as an 'non-hazardous' entry, in most cases it is non-hazardous without any further assessment and you can proceed to Step 6.

But, if the waste holder knows that a non-hazardous waste has one or more hazardous properties, he must mark that waste as hazardous and manage it according to hazardous waste requirements in the Waste Management Code and other subordinated legislation.

There are exceptions where these 'non-hazardous' entries are linked to other entries and additional consideration may be needed. The other entries may need to be considered to determine if they are more appropriate to the waste.

Step 4: determine the chemical composition of the waste

To assess whether the waste has a hazardous property you first need to know its chemical composition. You can get information on the composition of a waste:

- from the practice of using material from which waste was produced, or experience with managing the waste
- from the manufacturers safety data sheet if the waste is a manufactured product whose composition has not changed.

For example, oils are accompanied with documentation which warns about flammability of oil. Composition of used oil did not change thus also waste oil has flammability hazard. Acids are corrosive, but used acid may be neutralised thus their corrosivity hazard may be minimised or removed, thus corrosivity of used acid may not be a hazard.

Step 5: Assess the hazardous properties of the waste

In step 5 you must consider all hazardous properties. These are numbered HP 1 to HP 15. See section 4 for details on hazardous properties.

There are two methods to work out if a waste displays hazardous properties. These are:

- the safety data sheet if the waste is a produced from material or product whose composition has not changed, for that specific material or product.
- past knowledge that the waste displays hazardous properties (if negative impact occurred from waste)

At this point you should know what substances are present in the waste or there is a founded suspicion that they are present in the waste and what hazard effect they have.

Materials or products are often labelled with hazard pictograms. If a pictogram is present a hazardous property is likely to apply. The absence of a pictogram does not mean that there are no hazardous properties.

Step 6: assign the classification code and describe the hazardous properties

At this stage the types of entries identified in steps 2 and 3 are important.

If you have identified entries with a different order of precedence you must consider the entries in that order of precedence. You can only consider an entry with a lower order of precedence if no appropriate entry exists at the higher level.

If the waste is classified under an 'hazardous' entry:

- you must use the classification code provided
- the waste is hazardous waste
- hazardous property assessment is not used for classification purposes
- the composition and hazardous properties identified in steps 4 to 6 are used only for hazardous waste transport documentation

If the waste was classified under 'mirror' entries that refer generally to hazardous substances, then:

- the hazardous code must be assigned if the waste displays a hazardous property
- the waste is hazardous waste

If the waste was classified under 'mirror' entries that refer to a specific hazardous substance or hazardous property, then:

- the 'mirror hazardous' code must be assigned if the waste displays a hazardous property as a result of that specific substance, displays that specific property,
- the waste is hazardous waste, and
- the composition, all hazardous properties, identified in steps 4 to 6 are used only for hazardous waste transport documentation

When the waste does not display a hazardous property as a result of the specific substance, does not display the specific hazardous property, and does not contain POPs, the 'mirror non-hazardous' code can be assigned.

3.3 How to use the List of Waste

This section of guidelines explains how to use the List of Waste to identify the possible code or codes that the waste may be classified under.

The code or codes determines both:

- the assessment needed to identify the correct code
- whether a waste is hazardous or non-hazardous

3.3.1 Introduction

The List of Waste (LoW) is the legal classification system used for classifying waste and identifying if a waste is hazardous waste. The list also has a set of legal instructions that explain how it has to be used. It is important these are followed because the structure of the list is designed to work with these instructions.

The structure of the List of Waste (LoW)

3.3.2 Waste Groups

The LoW is divided into 20 waste groups, numbered 01 to 20. Some waste groups are based on the type of industrial process or business activity that produced the waste. For example:

- Waste group 04: Wastes from the Leather, Fur and Textile Industries

Other waste groups are based on the type of waste. For example:

- Waste group 13: Oil Wastes and Wastes of Liquid Fuels (except edible oils, and those in chapters 05, 12 and 19)

The titles of these waste groups are important. The waste has to fall within the scope of the title to be considered within it. Some titles, like that for waste group 13: Oil wastes and wastes of liquid fuels (except edible oils listed in waste groups 05 and 12), also exclude certain wastes from that entire chapter.

3.3.3 Waste Sub-groups

Most waste groups contain a number of sub-groups. These divide the waste group into sub-groups based on either industrial process and business activity, or type of waste. Each sub-group is given another two digit number (creating a four digit number with the waste group number).

For example:

- Sub- group 04 02: wastes from the textile industry
- Sub- group 13 01: waste hydraulic oils

The sub- group title, like the waste group title, is also important for identification of waste.

3.3.4 Individual entries

Within each sub-group are the classification codes for individual wastes. These are given an additional two digit number, to create a six digit number with the waste group and sub-group numbers. For example:

- 04 02 16* dyestuffs and pigments containing hazardous substances

The description accompanying the code explains the scope of the code. It may do this in a variety of ways including references to the type of waste, the activity or process that produced it, its composition, or properties.

Example: how waste group and sub-group titles interact with code descriptions

Waste group 20 contains codes for:

- Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions

Sub-group 20 01 contains codes for:

- 20 01 Separately collected fractions (except 15 01)

Within sub-group 20 01 is the following six digit code

- 20 01 01 paper and cardboard

For 20 01 01 to be considered the waste must:

- be from a household (or is waste similar to that produced by a household), due to the scope of the chapter title
- be collected/co-collected as a separate fraction, due to the scope of the sub-group title
- not include any waste packaging, due to the exclusion of 15 01 in the sub-group title
- be paper or cardboard or a mixture of paper and cardboard

If the waste does not meet all four of the above criteria 20 01 01 would not be the most appropriate code. In such case you should go back to the procedure described in the chapter 3.2 and test another waste code identified in the step 2.

3.4 Instructions on how to use the List of Waste

The LoW has legal instructions that explain how it must be used to ensure the correct code for a waste is identified. It is important to understand that the LoW is not a 'look up' list. To accurately identify the 'appropriate' code or codes for your waste you must both:

- consider the entire list, rather than focussing on a single waste group
- use the waste groups in the order of precedence specified in the instructions (set out in steps 1 to 5 below)

Steps 1 to 4 will help you identify the appropriate code or codes that may apply to a waste. In many cases more than one code will need to be considered, before the final decision on the most appropriate code is made.

Step 5 explains the different types of codes and how the possible codes are considered to identify the appropriate code.

Step 1 Check Waste Groups 01 to 12 and 17 to 20.

These waste groups refer specifically to an industry process or business activity that has produced the waste, and to municipal waste. A business will typically have municipal wastes (waste group 20) and wastes from one or more processes or activities. A number of waste groups will normally need to be considered to cover all wastes generated by one producer.

For example, a company producing furniture, should (as a minimum) check waste groups:

03 – this group lists waste which may occur when processing of wood

04 – if leather or textile is used in furniture making

08 – if there is painting or glueing furniture

13 –if any hydraulic equipment is used

15 – for waste which may occur during cleaning or for used personal protection equipment

19 – if waste water from furniture production is treated on-site

20 – if the factory has a canteen or provides food to workers on-site

If the waste falls into one of these waste group, and is listed there with one or more applicable entries, you should use the most appropriate code for your waste.

If, for example, you have a chemical surface treatment process that produces waste aqueous rinse waters, you could code them as either:

11 01 11* aqueous rinsing liquids containing hazardous substances

11 01 12 aqueous rinsing liquids other than those mentioned in 11 01 11

Step 5 explains how to decide which of these entries you must choose.

You must not use any six digit entry ending in '99' from the waste groups considered at step 1 because more appropriate entries might be found in other waste groups. See step 4.

Step 2 Check waste groups 13, 14 and 15.

If no appropriate entry is found in waste groups 01 to 12 or 17 to 20, then you should check waste groups 13, 14 and 15 to see if the waste is listed there. '99' codes from waste groups 13, 14 and 15 may be considered.

These waste groups contain sub-groups and codes for:

- waste oils and fuels
- waste solvents and refrigerants
- waste packaging, absorbents, filter materials, wiping cloths and protective clothing

Step 3 Check chapter 16

If there is no appropriate code or codes in waste groups 01 to 15 or 17 to 20, the next step is to look in waste group 16. '99' codes from waste groups 16 may be considered.

Waste group 16 contains sub-groups and codes for many general wastes for example:

- vehicles
- electronic equipment and batteries
- chemicals
- aqueous liquid wastes

Step 4 '99' Codes

The "99" codes are all codes from the list of Waste which have as last two digits 99. These general codes identify waste belonging to a group or sub-group, but which does not fit any other code in the group or sub-group. These general codes are often named "wastes not otherwise specified".

Occasionally an appropriate code or codes may not be identified in steps 1 to 3. This is unusual, so it is recommended to review steps 1 to 3 before proceeding.

If a waste is from one of the industry processes 01 to 12 and 17 to 20, you can now use the 99 code that you were not able to use in Step 1. For example, the waste group 20: Municipal waste contains the sub-group 20 01 for separately collected fractions. In case a fraction is separated from municipal waste which is not included in this sub-group, the code 20 01 99 shall be assigned. An example of a waste that is coded 99 is a separate fraction of municipal hygiene wastes (20 01 99).

You should still use the 'most appropriate' code or the nearest suitable code, so shouldn't use a 99 code if a more suitable alternative is available in another waste group of the LoW. For example, amalgam waste from veterinary healthcare care should be coded 18 01 10*, even though that code relates to human healthcare, as it's clearly suitable.

Step 5 Identify the type of code and assessment needed

In Steps 1 to 4 you should have selected one or more codes that may apply to the waste. In Step 5 provides advice on making a decision on assigning the final waste code.

The six-digit codes in the LoW that are hazardous wastes have an asterisk (*) next to them.

'hazardous' entries.

For example: 13 07 01* fuel oil and diesel

Wastes are simply assigned to these codes if they fit the waste name - the description next to the code. This description normally refers to a type or sub-type of waste (eg a filter cake or type of oil) or sometimes a source activity or process. If the waste fits the description you must assign this code. Waste names are quite general and do not identify an exact waste.

Hazardous waste is marked in the LoW with an asterisk (*),

You do not need to work out in detail what chemicals are in the waste to classify it, and find out from the chemical composition if it's hazardous or not. But you must still find what (if any) hazardous properties the waste displays and information on chemical composition is needed for this.

There are some unusual 'hazardous' entries that are linked to other entries. In these cases, you need to determine if the waste fits the description of the 'hazardous' entry or not. Some examples of this include:

- 'hazardous' entries for waste oils that are distinguished by type of oil, and presence of PCBs (13 03 01 and 13 03 06)
- 'hazardous' and 'non-hazardous' entries for electrical waste that are distinguished by the presence of absence or hazardous components (see example 5)

Further information is provided to explain this type of entry either as notes within the list or separate examples below.

Key Point: Hazardous wastes with no hazardous properties

A waste that falls under a hazardous entry (eg any non-edible oil) is always hazardous. Even if the waste producer claims that that waste has no hazardous properties, the hazardous entry still applies. The law does not allow another entry to be applied to that waste.

'non-hazardous' entries

If an entry in the LoW is not listed with an asterisk, and it does not have any link to a mirror or hazardous entry, the entry is automatically not hazardous. An example is:

03 01 01 waste bark and cork

If the waste fits the description for that code, the code can be assigned to the waste.

But before assigning a non-hazardous entry you must check if there are any linked or related entries that also need to be considered. Examples of wastes with linked codes include:

- electrical wastes and batteries
- medicines
- stabilised/solidified waste

'Mirror' entries

Some wastes are not automatically hazardous or non-hazardous - they are called mirror entry wastes.

These wastes have:

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

A hazardous mirror has a 'specific' or 'general' reference to 'hazardous substances' in its waste description. For example:

07 01 11* sludges from on-site effluent treatment containing hazardous substances

The non-hazardous mirror usually (but not always) has a defined link to its mirror using the words 'other than those mentioned in ...' for example:

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

This is an example of a mirror pair where the hazardous entry has a 'general' reference to a hazardous substance(s).

Another example of mirror entries is:

17 03 01* bituminous mixtures containing coal tar

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

This is an example of a mirror pair where the hazardous entry has a 'specific' reference to a hazardous substance, in this case coal tar. The hazardous entry is chosen only if the waste either contains the particular hazardous substance (in this case coal tar) at a level that causes it to display a hazardous property

Unusual Mirror entries

Not all Mirror entries link to a single mirror non-hazardous entry. Some may link to hazardous entries, other mirror or non-hazardous entries. These entries may occur as groups of several interacting entries, and a mirror non-hazardous entry may not always be provided in the same chapter or sub-chapter of the list.

For example:

- Entry 01 03 06 „Tailings other than those mentioned in 01 03 04 and 01 03 05“ is linked to two hazardous entries.
- Entry 06 13 02 „Spent activated carbon (except 06 07 02)“ is linked to entry in a different sub-group
- Entry 09 01 11 “Single-use cameras containing batteries included in 16 06 01, 16 06 02 or 16 06 03” is linked to hazardous waste batteries in sub-group 16 01, meaning that only such single-use cameras which contain hazardous battery are considered hazardous waste.
- Sub-group 07 03 “Wastes from the manufacture, formulation, supply and use of organic dyes and pigments (except 06 11) is linked to sub-group 06 11 “Wastes from the manufacture of inorganic pigments and opacifiers”

4 Hazardous properties of waste

4.1 EU approach to assessment of hazardous properties

In the EU, the primary reason for identifying hazardous properties in waste is protection of human health and the environment. From this point of view hazardous properties present (or expected to be present) in waste are an information what methods shall be used to minimise risk of injury or damage.

Assessment of hazardous properties in the EU is now based of Regulation (EC) 1272/2008 on classification, labelling and packaging of substances and mixtures ('CLP Regulation') which adapts for the EU the UN international chemicals classification system (Globally Harmonised System - GHS). Currently the CLP Regulation is not introduced in Georgia, thus it can not be used for assessment of hazardous properties of waste. However, wording from the CLP regulation is used for description of hazardous properties in this Guidance.

EU legislation defines threshold limits for hazardous substances. If these are exceeded, waste is expected to have one or more hazardous properties. This approach is also omitted from the current Georgian system of waste classification, as it requires substantial analytical capacities, which may not be available and could hamper implementation of waste classification. Prior introducing these thresholds, technical standards defining methodology for waste analysis need to be adopted in Georgia.

The waste management in Georgia is not yet developed to the level, which would allow application of full-scale EU approach. Therefore, a modified approach is defined in the legislation, which is based on knowledge of the waste holder, who is responsible for classifying waste as hazardous, if it has or may have hazardous properties according to Article 6 (2) of the by-law on waste classification. This means, the waste holder is responsible for assigning hazardous properties to waste according to his knowledge, without chemical analyses.

Also in the EU the approach to assessment of hazardous properties is not always based on strict analytical evaluation. The waste producer assigns hazardous properties from his knowledge avoiding lengthy and expensive testing. Testing is done mainly in cases when waste producer and operator of disposal/recovery facility have different opinion on hazardous properties of the waste.

If waste analysis is done by the waste producer, testing should be oriented on proving that a hazardous property is NOT present in the waste.

4.2 Explanation of hazardous properties

Hazard HP 1: Explosive

Annex III of the Waste Management Code defines H 1 'Explosive' as:

substances and preparations which may explode under the effect of flame or which are more sensitive to friction than dinitrobenzene

As explosive shall be marked such waste which 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. Waste with this hazardous property includes pyrotechnic waste, organic peroxide waste and explosive self-reactive waste. Waste containing these substances can simply be assumed to be hazardous by H 1.

Some substances may be explosive under certain conditions. They may mass explode in fire or may be explosive when dry. These substances do not make a waste hazardous by H 1 but their presence in a waste could make that waste exhibit hazardous property H 15.

Hazard HP 2: Oxidising

Annex III of the Waste Management Code defines HP 2 'Oxidizing' as:

"": substances and preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances

As oxidising shall be marked such waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials. Typical representatives of chemicals exhibit oxidising properties:

- Peroxides
- Chlorates
- Perchlorates
- Nitrates
- Permanganates

Hazard HP 3

This hazardous property is divided in H 3-A: Highly Flammable and H 3-B Flammable.

Annex III of the Waste Management Code defines H 3-A 'Highly Flammable':

- liquid substances and preparations having a flash point below 21°C (including extremely flammable liquids), or
- substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- gaseous substances and preparations which are flammable in air at normal pressure, or
- substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

Annex III of the Waste Management Code defines H 3-B 'Flammable':

- liquid substances and preparations having a flash point equal to or greater than 21 °C and less than or equal to 55 °C.

Flamability as hazardous property should be taken in consideration, if the waste contains or may contain, for example:

- Lithium

- Sodium
- Magnesium powder (pyrophoric)
- Aluminium powder (pyrophoric)
- Aluminium powder (stabilised)
- Potassium
- Calcium
- Zinc powder / zinc dust (pyrophoric)
- Zirconium powder (pyrophoric)
- Aluminium carbide
- Lithium aluminium hydride
- Sodium hydride
- Calcium hydride
- Calcium carbide
- Calcium phosphide
- Aluminium phosphide
- Magnesium phosphide
- Trizinc diphosphide
- Diethyl (ethyl-dimethyl-silanolato) aluminium

Note: the latest revision of the list of hazardous properties covers both H 3-A and H 3-B by one hazardous property HP 3 Flammable.

Hazard HP 4: Irritant – skin irritation and eye damage

Annex III of the Waste Management Code defines H 4 'Irritant' as:

non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

This hazardous property is exhibited by substances, which cause severe skin burns and eye damage or cause skin and eye irritation.

The mechanical irritation produced by some substances, for example mineral wool, is not included within the definition of HP 4.

Hazards H 4 and H 8 are linked because they refer to the potential for harm or damage to tissue at different levels of severity.

Hazardous wastes containing irritant substances will only display irritant properties. Hazardous wastes containing corrosive substances can display either corrosive or irritant properties dependent upon concentration.

Hazard HP 5: "Harmful":

Annex III of the Waste Management Code defines H 5: "Harmful" as:

substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks

This hazardous property is exhibited by waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration'. These substances cause or may cause damage to organs, respiratory irritation and may be fatal if swallowed and enters airways.

Hazard HP 6: Toxic

Annex III of the Waste Management Code defines H 6 'Toxic' as:

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

This hazardous property is exhibited by 'waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure'.

Hazard HP 7: Carcinogenic

Annex III of the Waste Management Code defines H 7 'Carcinogenic' as:

substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence

Waste containing polycyclic aromatic hydrocarbons (PAH) usually exhibits property H7.

Hazard HP 8: Corrosive

Annex III of the Waste Management Code defines H 8 'Corrosive' as:

substances and preparations which may destroy living tissue on contact.

This hazardous property is exhibited by waste which on application can cause skin corrosion and causes severe skin burns and eye damage. A waste with a pH ≤ 2 or ≥ 11.5 should be considered HP 8 Corrosive.

Hazards HP 8 and HP 4 are linked because they refer to the potential for harm or damage to tissue at different levels of severity.

Hazard HP 9: Infectious

Annex III of the Waste Management Code defines H 9 'Infectious' as:

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.'

There are two types of assessment:

- mirror entry wastes will be assigned H 9 if they contain a toxin produced by a micro-organism in high enough concentration for the waste to display Harmful (H 5) or Toxic (H 6) properties. Wastes that might be infectious due to microbial toxins include dredgings or skimmings from a watercourse where a cyanobacterial bloom has occurred.

- identifying whether relevant healthcare wastes, being associated with 'infection', are classified as 'infectious'.

Relevant healthcare wastes

The entries in the List of Waste that are linked to H 9 are:	
18 01	wastes from natal care, diagnosis, treatment or prevention of disease in humans
18 01 03*	wastes whose collection and disposal is subject to special requirements in order to prevent infection
18 02	wastes from research, diagnosis, treatment or prevention of disease involving animals
18 02 02*	wastes whose collection and disposal is subject to special requirements in order to prevent infection

The linked non-hazardous healthcare waste entries are:	
18 01	wastes from natal care, diagnosis, treatment or prevention of disease in humans
18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)
18 02	wastes from research, diagnosis, treatment or prevention of disease involving animals
18 02 03	wastes whose collection and disposal is not subject to special requirements in order to prevent infection

18 01 04 and 18 02 03 are non-hazardous codes, linked to 18 01 03* and 18 02 02*, in that if a healthcare waste is not 'subject to special requirements in order to prevent infection' it takes the non-hazardous List of Waste code.

The key to the assessment of infectious for healthcare wastes is to determine the meaning of 'special requirements'. Special requirements is a general term for legal and regulatory documents, which define rules for management of waste produced in hospitals and other health care facilities.

Waste classified as infectious should be kept segregated from non-infectious waste so that they do not become contaminated.

Hazard HP 10: Toxic for reproduction

Annex III of the Waste Management Code defines H 10 'Toxic for reproduction' as:

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

This hazardous property is exhibited by 'waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the unborn child

Hazard HP 11: Mutagenic

Annex III of the Waste Management Code defines H 11 'Mutagenic' as:

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

This hazardous property is exhibited by 'waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell'

Hazard HP 12: Release of an acute toxic gas

Annex III of the Waste Management Code defines H 12 as:

Waste which releases toxic or very toxic gases in contact with water, air or an acid

This hazardous property is exhibited by waste which releases acute toxic gases in contact with water or an acid'

Examples of substances which may cause a waste to exhibit H 12 (note: this is not a complete list of substances with these properties)

- Phosphorous pentasulphide
- 3,5-dichloro-2,4-difluoro-benzoyl fluoride (DCDFBF)
- Metam-sodium
- Barium sulphide
- Barium polysulphides
- Calcium sulphide
- Calcium polysulphides
- Potassium sulphide
- Ammonium polysulphides
- Sodium sulphide
- Sodium polysulphides
- Sodium dithionite
- Sodium hypochlorite, solution Cl active
- Calcium hypochlorite, solution Cl active
- Dichloroisocyanuric acid
- Dichloroisocyanuric acid, sodium salt of
- Sodium dichloroisocyanurate, dihydrate
- Trichloroisocyanuric acid
- Hydrogen cyanide, salts of (with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide)
- Sodium fluoride
- Sodium azide
- Trizinc disphosphide
- Calcium cyanide
- Cadmium cyanide
- Aluminium phosphide
- Calcium phosphide
- Magnesium phosphide
- Trizinc diphosphide

Hazard HP 13: Sensitising

Annex III of the Waste Management Code defines H 13 'Sensitising' as:

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

This hazardous property is exhibited by 'waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs. Such substances may cause an allergic skin reaction or allergy or asthma symptoms or breathing difficulties if inhaled.

Hazard HP 14: Ecotoxic

Annex III of the Waste Management Code defines H 14 as:

'waste which presents or may present immediate or delayed risks for one or more sectors of the environment'

This hazardous property is exhibited by substances, which are

- Harmful or toxic to aquatic organisms
- Toxic to flora, fauna or soil organisms
- May cause long-term effects in the aquatic environment
- Dangerous for the ozone layer

Hazard HP 15: Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste

Annex III of the Waste Management Code defines H 15 as:

Waste capable by any means, after disposal, of yielding another substance, e.g. a leachate, which possesses any of the characteristics listed above

This hazardous property is exhibited by 'waste which may mass explode in fire, may explode when dry, may form explosive peroxides or there is risk of explosion if heated under confinement.

4.3 Assigning of hazardous properties

Hazardous properties in the Annex III of WMC are listed without any precedence and should be assigned to hazardous waste as equally important. Keeping in mind that the primary reason for identifying hazardous properties in waste is protection of human health and the environment, it is useful to prioritize hazardous properties, starting from the most urgent danger.

Hazardous waste often has more than one hazardous property. It is recommended, that these hazardous properties are shown in the order of importance. Also, waste should be characterised sufficiently (listing all relevant hazardous properties) and at the same time accurately (listing only relevant hazardous properties). If too few hazardous properties are assigned, there is a risk, that the next waste holder may suffer injury or cause an accident. If

too many hazardous properties are assigned, then the next waste holder will not understand which measures he should apply to minimise risks.

The first group of hazardous properties includes those which exhibit physical impact by increased temperature or pressure:

- H1 Explosive
- H3-A Highly flammable
- H3-B Flammable
- H2 Oxidising

The second group of hazardous properties includes those which exhibit impact on tissue:

- H8 Corrosive
- H4 Irritant
- H13 Sensitizing

The third group of hazardous properties includes those which exhibit acute or delayed toxic impact:

- H6 Toxic
- H9 Infectious
- H12 Waste which releases toxic or very toxic gases in contact with water, air or an acid
- H7 Carcinogenic
- H10 Toxic for reproduction
- H11 Mutagenic
- H5 Harmful

The fourth group of hazardous properties includes those which exhibit unspecified impact:

- H14 Ecotoxic
- H15 Waste capable by any means, after disposal, of yielding another substance, which possesses any of the H1 – H14

5 Waste treatment codes

5.1 Definition of terms

Waste treatment codes (or Operation codes) identify what is happening to produced or collected waste. There are two annexes to the Waste Management Code, listing individual Recovery codes and disposal codes.

The Waste Management Code provides in Article 3 definition of terms related to the use of waste treatment codes:

Waste treatment means recovery or disposal measures according to Annex I and II of WMC, including pre-treatment prior to recovery or disposal.

Recovery means any activity which results in using waste for a useful purpose by replacing other (primary) materials. Recovery operations are listed in Annex I of WMC, but not limited to it. Recovery includes recycling (material recovery) and use of waste as fuel (energy recovery);

Recycling means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations;

Disposal is not specifically defined in the Waste Management Code. The Code only refers to "... any of the operations which are listed in Annex II...". But, if recovery operations are aimed on returning waste into the production cycle, disposal operations can be defined as such, which are removing waste from the lifecycle of materials without any useful purpose, with the aim to reduce negative impact of waste on human health or environment.

R codes are assigned to operations leading to recovery of material or energy from waste.

D codes are assigned to operations leading to reduction of negative impact of waste on human health or environment

5.2 Explanation of recovery operation codes

R 1 Use principally as a fuel or other means to generate energy

This code covers the incineration and co-incineration of waste in power stations and industrial facilities such as cement kilns so that the resultant energy can be used to generate heat or electricity. Common examples are: use of tyres, waste oils, spent solvents or other high calorific waste in cement kilns; co-incineration of sewage sludge or refuse-derived fuel (RDF) from municipal waste in power stations.

R 2 Solvent reclamation / regeneration

This code covers all treatment activities, whose purpose is the regeneration or recovery of spent solvents, e.g. re-refining of solvents in order to separate contaminants and to restore the solvent to its original quality or to a lower grade product (e.g. lacquer thinner). This code includes also preparation of secondary liquid fuels, usually by blending with other liquid wastes.

R 3 Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)

This code covers operations whose purpose is the recovery of biodegradable and non-biodegradable organic materials. These operations include the following:

- recycling of waste paper and cardboard;
- reprocessing and recycling of plastic waste;
- composting of bio-waste and green waste;
- fermentation of biodegradable waste for biogas production (biogas plants).

R 4 Recycling / reclamation of metals and metal compounds

This code covers all treatment operations whose purpose is the recycling of metal waste, and of complex products with metals as the predominant material. The treatment operations include a variety of mechanical, thermal and chemical treatment steps and processes, such as the following:

- recycling of scrap and production waste in steelworks;
- shredding and reprocessing of end-of-life vehicles and waste electric and electronic equipment;
- thermal treatment of cables or oil-contaminated metals;
- accumulator and battery recycling;
- electrolytic recovery of silver from photo chemicals.

R 5 Recycling/reclamation of other inorganic materials

This code covers operations whose purpose is the recovery of inorganic non-metal wastes and which are not covered by other more specific operations (e.g. R6, R8, R10). Inorganic non-metal wastes represent a large proportion of the total waste generated and consist of a broad spectrum of waste types. The main groups are waste from thermal processes (slag, ashes, sands, dust etc.), construction & demolition waste, and waste from mining and quarrying. The treatment processes include the following:

- reprocessing of construction and demolition waste;
- reprocessing and recycling of glass waste;
- use of waste as secondary raw material in cement kilns or asphalt mixing plants.

This includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.

R 6 Regeneration of acids or bases

This code comprises operations whose purpose is the regeneration and subsequent reuse of spent acids/bases for the original purpose or for other purposes. For example, re-concentration of spent acids; thermal decomposition of spent sulphuric acid for use as feedstock in sulphuric acid production.

R 7 Recovery of components used for pollution abatement

This code covers treatment operations whose purpose is the regeneration of pollution abatement materials such as activated carbon and ion exchange resins. For example regeneration of activated carbon from water purification and flue gas treatment, mainly by thermal treatment; the regeneration of ion exchange resins by solvent washing.

R 8 Recovery of components from catalysts

This code covers treatment operations whose purpose is regeneration of catalysts to be reused as catalysts or the recovery of catalyst components, mainly of metal components, e.g. recycling of precious metals from catalytic converters in vehicle exhausts.

R 9 Oil re-refining or other reuses of oil

This code covers all processes whose purpose is the reuse of waste oil. The two main options are the re-refining of waste oil and the preparation of fuels from waste oils. Re-refining reconverts waste oils into base oils which can be used to manufacture lubricating products and use to generate fuel which can be used as a substitute for coal, diesel and light fuel.

R 10 Land treatment resulting in benefit to agriculture or ecological improvement

This code covers the use of organic and mineral wastes as fertilisers or soil conditioners in agriculture and also other applications of waste on land on which no food and feed crops are cultivated, which result in ecological improvement such as landscape restoration and restoration of old disused quarries. The following are examples of R10 operations:

- the spreading on land of sewage sludge in agriculture;
- the spreading on land of compost from the treatment of separately collected biowaste;
- the use of manure in compliance with agricultural regulations;
- the use of mineral wastes as fertilisers.

There is a similar code defining application of waste on land – D 2.

R 11 Use of waste obtained from any of the operations numbered R 1 to R 10

This code comprises the recovery of residual waste from previous recovery operations. This code covers only treatment operations that could not be assigned to one of the more specific R codes. Use of this code is limited, because the recovery of majority of residual waste can be defined by specific codes R 1 to R 10.

R 12 Exchange of waste for performing of any of the operations numbered R1 to R11

This code covers preparatory treatment activities prior to recovery such as basic sorting activities; mixing of waste from different generators before it is sent to a recovery facility; transfer and compaction of waste; shredding of wood waste prior to energy recovery.

If there is no other R code appropriate, this can include preliminary operations prior to recovery including dismantling, sorting, crushing, compacting, pelletising, drying, shredding, repackaging, separating or mixing etc. prior to submission to any of the operations numbered R1 to R11.

R 13 Storage pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced)

This waste treatment code shall be assigned to waste stored in allocated and clearly identified site (within a company) if it is clear that waste will be sent for recycling or recovery operation not later than in 3 years.

There is a similar code defining storage of waste – D15.

See the note to waste storage in Chapter 5.4.

5.3 Explanation of disposal operation codes

D 1 Deposit into or on to land (e.g. landfill, etc.)

This code covers permanent deposit of waste in controlled landfills, uncontrolled dumps or other areas allocated for waste disposal. Includes also deposit of overburden, waste rock and tailings on heaps in the extractive industry.

D 2 Soil treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.)

This code covers spreading of waste on land, often followed by the incorporation of the waste into the soil, which does not result in benefit to agriculture or other ecological improvements. Generally, this code applies to non-hazardous sludge and liquid wastes, e.g. disposal of dredging sludge.

There is a similar code defining application of waste on land – R 10.

D 3 Deep injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)

This code covers the injection of waste into natural and artificial cavities (e.g. salt domes, wells, mines), or into porous formations of rock.

D 4 Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.)

This code covers the deposit of waste in natural or engineered ponds, pits or lagoons (impoundment), which is the predominant method for the management of tailings in mining operations (e.g. in the metal mining sector).

D 5 Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)

This code covers above ground disposal of waste into specially engineered landfills. Construction and operation standards of specially engineered landfills usually exceed standards for landfills defined in the law.

D 6 Release into a water body except seas/oceans

This code covers deposit of non-hazardous dredging sludge and other non-hazardous sludge in surface water including the bed and the subsoil. This code may include also disposal of liquid waste into public sewer, if allowed by waste water legislation.

D 7 Release to seas/oceans including sea-bed insertion

This code covers discharge of waste to sea in accordance with the The Convention on the Protection of the Black Sea Against Pollution.

D 8 Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12

This code comprises operations which use aerobic or anaerobic biological processes in order to prepare the waste for subsequent disposal, e.g. by reducing the amount of biodegradable components or by degradation of organic pollutants. This includes biological-mechanical treatment of municipal waste; biological treatment of contaminated soil, sludges or mineral wastes, if followed by disposal.

D 9 Physico-chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcination, etc.)

This code covers the pre-treatment of mainly fluid and pasty hazardous waste by a variety of chemical, thermal and physical processes in order to achieve an output which can be disposed of. Physico-chemical treatment is typically deployed for emulsions and oil/water mixtures, neutral aqueous organics and inorganics (production specific waste water, leachate, etc.), cyanides, acids and alkalis. Typical treatment steps are detoxification (oxidation/reduction), precipitation, neutralisation, emulsion separation, immobilisation, electrolysis and osmosis.

D 10 Incineration on land

This code covers the incineration of waste where the main purpose of the incineration is the thermal treatment of waste in order to reduce the volume and the hazardousness of the waste, and to obtain an inert product that can be disposed of. The generated energy is not used – compare with R 1.

The most common examples are municipal solid waste incineration plants (unless they fulfil the energy efficiency standards under Annex II of the Waste Framework Directive), hazardous waste incineration plants, sewage sludge incineration plants, incineration plants for clinical waste or animal carcasses. D10 also covers the incineration of waste in co-incineration plants where the waste undergoes thermal treatment rather than being used as a fuel.

D 11 Incineration at sea

This operation is prohibited by EU legislation and international conventions.

D 12 Permanent storage (e.g. emplacement of containers in a mine, etc.)

This code covers placement of waste in disposal sites for permanent underground storage of waste in mines, caves or other underground structures.

D 13 Blending or mixing prior to submission to any of the operations numbered D 1 to D 12

This code covers preparatory activities whose purpose is the conditioning and packaging of waste for subsequent transport and further treatment prior to disposal. It includes basic sorting activities; crushing and shredding of waste in order to reduce the volume of waste for transport or landfilling; mixing and blending of waste (e.g. mixing of similar wastes from different waste generators); homogenisation, conditioning and solidification

If there is no other D code appropriate, this can include preliminary operations prior to disposal including sorting, crushing, compacting, pelletising, drying, shredding or separating etc. prior to submission to any of the operations numbered D1 to D12.

D 14 Repackaging prior to submission to any of the operations numbered D1 to D13

This code covers preparatory activities whose purpose is the conditioning and packaging of waste for subsequent transport and further treatment prior to disposal. It includes transfer and compaction of waste; packaging or repackaging of asbestos, pesticides or other waste.

D 15 Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced)

This waste treatment code shall be assigned to waste stored in allocated and clearly identified site (within a company) if it is clear that waste will be sent for disposal operation no later than 1 year.

There is a similar code defining temporary storage of waste – R 13.

See the note to waste storage in Chapter 5.4.

5.4 Assigning waste treatment codes

Waste producer is responsible for assigning the appropriate waste treatment code and he should know what is happening to his waste. This information must be included in his waste management plan or is available from contracts or orders for waste transport. Waste treatment codes are assigned according to the actual destination of waste. Waste management plans may include also code on planned waste treatment.

Record keeping and reporting

One waste type, identified by a waste code, has assigned one waste treatment code, if it is always sent to one type of treatment. In the record keeping the waste treatment code will be identified in the header, together with waste code and name. Information on waste in the annual report will be one line, stating waste code, name, amount and treatment code. For example:

Waste code	Waste name	Amount (t)	Waste treatment code
20 01 01	Paper and cardboard	200	R3
20 03 01	Mixed municipal waste	5200	D1

This information in the annual report indicates, that all separately collected paper and cardboard was sent for recycling and all mixed municipal waste was disposed to a landfill.

In case that one waste type is divided to more types of treatment (e.g. part of waste goes for disposal and is sent for recovery), more waste treatment codes can be assigned. In case of report keeping in a company, it is recommended that every record of waste (information on waste produced per day or per week – one line in the journal) includes a note with appropriate code of waste treatment, for which waste was sent. Information on waste in the annual report will be two lines, the first stating waste code, name, amount sent for the first treatment and the first treatment code, followed by second line repeating the waste code, name, amount sent for the second treatment and the second treatment code. For example:

Waste code	Waste name	Amount (t)	Waste treatment code
20 01 01	Paper and cardboard	200	R3
20 01 01	Paper and cardboard	50	D1
20 01 17*	Photochemicals	0,5	D6
20 01 17*	Photochemicals	1,5	R4

This information in the annual report indicates, that from 250 t of separately collected paper and cardboard 200 t were sent for recycling and 50 t were disposed to a landfill. Similarly, from 2 t of photochemicals 0,5 tons were discharged to public sewer (leading to river) and 1,5 were sent for silver recovery.

The list of waste treatment codes contains several similar activities and the producer must decide if the waste is recovered or disposed. The following table presents these cases:

Treatment	Use R code if	Use D code if
Incineration of waste	Generated energy can be used to generate heat or electricity (R1)	No heat or electricity is utilised (D10)
Waste is spread on land	Waste is used as fertiliser or for landscaping (R10)	No enrichment of soils occurs or spreading is used for removal of hazardous substances from waste (D2)
Waste is temporary stored	Waste is destined for recovery (R13)	Waste is destined for disposal (D15)

Storage of waste

Period for temporary storage of waste is limited in the Waste Management Code. If waste is destined for disposal, the storage period must not exceed one year, if waste will be sent for recovery, it must not exceed three years. The law does not provide instruction how to proceed if these periods are exceeded. It is recommended to reclassify waste which is stored for more than 3 years to waste treatment code D1 and the waste producer shall comply with requirements on landfilling.

The waste treatment codes R13 and D15 do not apply to waste stored prior to regular (daily) collection at the point where it was generated. This code shall not be used for MSW container stands or operational waste accumulation points needed in production process in a company from which waste is regularly moved to waste storage site and from which it is sent for recovery/recycling.

There are problems to assign appropriate waste treatment code for waste produced in the past. The international practice in implementing waste legislation gives priority to waste produced currently and ensures that this waste is managed according to the rules of the new waste legislation. Waste produced in the past (= before the Waste Management Code was adopted) is usually regulated by special legislation which recognises the specific management requirements of this type of waste. These requirements aim on minimising environmental impact of waste, assess risks of re-locating the waste to a controlled landfill and include cost-benefit analysis.

The use of waste treatment code in case of temporary storage can be understood as a binding promise of waste producer (or holder) to the Ministry what will be done with waste within a given timeframe. If the waste producer/holder assigns the R13 code, he declares to the state authorities that the waste will be recycled not later than in three years. If the waste producer/holder assigns the D15 code, he declares to the state authorities that the waste will be disposed not later than in one year.

Annex 1

Examples of how to apply waste classification coding

This appendix includes the following examples of how to code:

1. Co-collected and mixed wastes
2. Aqueous liquids or concentrates
3. End of life vehicles
4. Batteries from municipal sources
5. Waste electronic and electrical equipment
6. Packaging wastes and contents

Example 1	Co-collected and mixed wastes
Scope	<p>Generally applicable.</p> <p>This example provides guidance on the coding of co-collected and mixed waste of any type.</p> <p>Exception: mixed municipal waste from domestic households.</p>
<p>Mixing of different types of hazardous waste, and of hazardous waste with other waste, substances or materials is prohibited, unless carried out at a suitably licensed facility that meets certain conditions.</p> <p>Wastes that have been mixed must be separated where technically and economically feasible. Note, where a single batch or single load of mixed wastes cannot be separated producers and operators are asked to describe the waste in the following manner.</p> <p>The first step in coding and classifying a mixed waste is to determine how many wastes are present. If more than one separately identifiable waste is present, then each must be described and more than one list of waste code will be required.</p> <p>The general principle is that if 3 items of waste (one each of types A, B and C) are placed in a single container, then that container contains 3 wastes. Each of which must be separately assessed, described and coded.</p> <p>For example: A lead acid battery in a skip of wood waste from a demolition site would need two codes. The battery is separately identifiable and distinct from the wood waste. The battery would be coded 16 06 01* and the wood would be coded 17 02 01 if it has not been contaminated by being stored with the battery.</p> <p>The same multiple coding approach is applied to the coding and classification of healthcare waste. For example:</p> <ul style="list-style-type: none"> • non-cytotoxic and cytostatic medicinally contaminated sharps from human healthcare (18 01 03* and 18 01 09) • chemically preserved anatomical waste from human healthcare (18 01 06* and 18 01 03*) <p>Note: The presence of a code for mixed waste in certain waste groups does not allow businesses to mix different types of hazardous waste, or hazardous waste with other</p>	

wastes, substances or materials.

There is no de-minimis for the levels of hazardous waste if mixed with a non-hazardous waste. For example, a batch of non-hazardous construction waste (17 09 04) if mixed with PCB containing wastes, such as PCB containing resin-based floorings, should be coded as 17 09 02* - construction and demolition wastes containing PCBs.

Example 2	Aqueous liquids or concentrates
Scope	This example provides guidance on the use of waste group 16 to coding aqueous liquids and concentrates for which appropriate entries are not available in chapters 1 to 12, 17 to 20, and 13 to 15.

There are some liquid wastes where no appropriate code can be found in the waste groups (1-12, 17-20) such as liquor from composting and portable toilet waste.

The instructions for use of the list of waste indicate that the waste specific waste groups (13,14, & 15) must be considered next.

If a code still cannot be found, then an appropriate code from waste group 16 (waste not otherwise specified in the list) can be chosen.

Only if a code cannot be found in waste group 16, a 99 code from one of the waste source waste groups could be used.

However, chapter 16 does contain general codes for all aqueous wastes and aqueous concentrates in subchapter 16 10 (aqueous liquid wastes destined for off-site treatment):

16 10 01* aqueous liquid waste containing hazardous substances

16 10 02 aqueous liquid waste other than those mentioned in 16 10 01

16 10 03* aqueous concentrates containing hazardous substances

16 10 04 aqueous concentrates other than those mentioned in 16 10 03

To determine the most appropriate code the aqueous waste must:

- first be classified as either a liquid or a concentrate
- then assessed for hazardous substances

If hazardous substances are present the waste will be hazardous by either 16 10 01* or 16 10 03*. A substance should be considered to be a 'concentrate' or not on a case by case basis.

Composting liquor: waste from composting is mainly covered in sub-group 19 05 (waste from aerobic treatment of waste). However, there is currently no code that adequately describes any liquid waste from this process. Before the 99 code can be used from this sub-group the waste specific waste groups (13, 14 & 15) must be considered first, and if a code cannot be found there, then the appropriate code from waste group 16 can be selected.

Waste from a portable toilet: this entry is a household / municipal waste but there is no

specific entry in waste group 20 for it. There are no entries in waste groups 13 to 15 either. The most appropriate entries in the list are again found in waste group 16.

Aqueous washing liquids and mother liquors from organic chemical processes: Waste group 07 provides 'hazardous' codes that must be used for these wastes, even if the waste has no hazardous properties.

Example 3	End of life vehicles (ELV's)
Scope	The example provides guidance on the classification of any vehicle that is waste.
<p>The codes for End-of-life vehicles are found in sub-group 16 01:</p> <p>16 01 04* end-of-life vehicles</p> <p>16 01 06 end-of-life vehicles, containing neither liquids nor other hazardous components</p> <p>These entries should be used to code end-of-life cars, coaches, lorries, helicopters, planes, boats, ships, tractors, motorcycles and any other vehicle. It should equally be considered to include trailers, caravans and similar.</p> <p>The entries 16 01 04* and 16 01 06 are obviously linked together but are not mirror entries. If a vehicle has been fully depolluted, such that all components that are hazardous have been removed, then it falls under 16 01 06.</p> <p>If it contains any hazardous liquids (like petrol, diesel, brake fluid or oil etc.) or other hazardous components (such as batteries or switches containing mercury) then it is coded under 16 01 04*.</p>	

Example 4	Municipal batteries
Scope	<p>This example provides guidance on household type batteries produced by both households and businesses.</p> <p>It does not apply to lead acid vehicle and other larger / specialist batteries produced by businesses. These are classified under chapter 16.</p>

There are two codes applicable to domestic type waste batteries from domestic households and businesses:

20 01 33* batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries

20 01 34 batteries and other accumulators other than those mentioned in 20 01 33

20 01 34 should only be used when it is known that all the batteries present are non-hazardous (i.e. when the batteries have been sorted and identified by someone competent in doing so).

20 01 33* should be used in all other circumstances including for;

- co-collected unsorted or unassessed batteries where the presence of one or more hazardous batteries cannot be ruled out, and
- hazardous batteries segregated from other types of batteries

Example 5	Waste electronic and electrical equipment (WEEE)
Scope	This example provides guidance on the classification of waste electronic and electrical equipment (WEEE) and related components.
<p>The list of waste contains entries for WEEE in two waste groups, 16 and 20. WEEE from domestic households, and items of a similar type from industrial and commercial sources household, is classified in waste group 20. This chapter takes precedence over waste group 16.</p> <p>20 01 21* fluorescent tubes and other mercury-containing waste</p> <p>20 01 23* discarded equipment containing chlorofluorocarbons</p> <p>20 01 35* discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components</p> <p>20 01 36 discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35</p> <p>Commercial / Industrial-type or sized equipment, that a domestic household would not typically produce, would be classified under waste group 16.</p> <p>16 02 09* transformers and capacitors containing PCBs</p> <p>16 02 10* discarded equipment containing or contaminated by PCBs other than those mentioned in 16 02 09</p> <p>16 02 11*discarded equipment containing chlorofluorocarbons, HCFC, HFC</p> <p>16 02 12*discarded equipment containing free asbestos</p> <p>16 02 13* discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12</p> <p>16 02 14 discarded equipment other than those mentioned in 16 02 09 to 16 02 13</p> <p>A computer monitor or television or tea room fridge from a commercial premises of a similar</p>	

type to those used by households would be classified under sub-group 20 01.

However a supermarket's larger chiller cabinet or freezer units containing hazardous chlorofluorocarbons (CFCs) would be coded 16 02 11*.

The vast majority of fluorescent tubes from any source are likely to be similar to domestic types and fall under 20 01 21*.

The entries 20 01 35* and 16 02 13* are hazardous entries because a 'hazardous component' is not a hazardous substance either specifically or generally. It is the presence or absence of a hazardous component in the equipment that determines code is used. If no hazardous component is present in the equipment, then 20 01 36 or 16 02 14 would be appropriate.

A hazardous component is a component either

- listed in the LoW as hazardous, or
- any other component that would possess a hazardous property if assessed in isolation

The list of waste specifies that hazardous components include hazardous accumulators/batteries (ones coded 16 06 01* to 16 06 03*); mercury switches; glass from cathode ray tubes and other activated glass; mercury containing backlights and other similar items.

Similarly, the entries 20 01 23*, 16 02 09* to 16 02 12* are also hazardous component entries which contain reference to specific hazardous substances. The component alone is assessed to determine whether it is hazardous due to the presence of the specific hazardous substance. The entry is used if the equipment contains a component assessed to be a hazardous due to that substance (for example asbestos containing components like cables, washers or insulation). If it does not, then the other entries in this sub-group (both hazardous and non-hazardous) must be considered.

Co-collected small WEEE from Civic Amenity sites, unless hazardous WEEE has been identified and removed, should be dual coded both as 20 01 35* and 20 01 36.

Example 6	Packaging waste and contents
Scope	<p>This example provides advice on the classification of any waste packaging to determine if:</p> <ul style="list-style-type: none"> (i) the waste is classified as empty packaging or contents (ii) the empty packaging is hazardous or not
<p>Waste group 15 of the LoW contains the following codes for waste packaging:</p> <ul style="list-style-type: none"> 15 01 01 paper and cardboard packaging 15 01 02 plastic packaging 15 01 03 wooden packaging 	

15 01 04 metallic packaging

15 01 05 composite packaging

15 01 06 mixed packaging

15 01 07 glass packaging

15 01 09 textile packaging

15 01 10* packaging containing residues of or contaminated by hazardous substances

15 01 11* metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers

To apply these codes two decisions must be made:

- firstly, should the waste be classified as packaging waste or as its contents, and
- secondly, if it is packaging waste, which code is appropriate

Is the waste waste packaging or waste contents?

For a waste container to be classed as a packaging waste (15 01) it must be effectively 'empty'.

It is usually obvious if a container is 'empty', for example a half empty tin of solidified paint is not empty, but where there is a small amount of residual material a container will not be empty if that residual material can be removed by physical or mechanical means by applying normal industry standards or processes.

This means that all reasonable efforts must have been made to remove any left-over contents from the container. This may involve for example washing, draining or scraping. The method of emptying will depend on the container and the type of material it contains.

Note: if the design of the packaging, its aperture, or the adherent nature of the material does not permit it to be emptied then it will not be a packaging waste.

If a container is not 'empty' it is not packaging waste. It should be classified on the basis of its contents and the source or activity that produced it. For example, 08 01 11* waste paint and varnish containing organic solvents or other dangerous substances.

Where waste containers are washed to remove contents and make them 'empty' then appropriate consideration must be given to:

- the trade effluent consent for any disposal of washings to foul sewer
- a suitable authorisation for the treatment of waste (which would not be an issue where the producer is using washing to remove remaining product to enable its use as product, for example in an agricultural setting)
- potential reactions with the contents, for example washing containers of water reactive substances with water is not recommended

Classifying and assessing the waste packaging

If a container is 'empty' the packaging waste entries can then be considered. The next step is to determine if the packaging:

- is contaminated or contains any residue, and
- if that contamination or residue contains hazardous substances

Any residue or contamination is assessed in isolation, excluding the weight of the packaging, to determine if it displays a hazardous property. Empty packaging containing residues of, or contaminated by, hazardous substances that display a hazardous property is classified as 15 01 10*. This is an hazardous entry. Examples of this would include:

- An empty drum of diesel fuel containing residual quantity of diesel (diesel fuel is hazardous, and possesses a range of hazardous properties), or
- A empty paint can, labelled with category of danger symbols, both contaminated with and containing dried paint residues of a paint containing ecotoxic heavy metals (note that the drying of paint may increase the concentration of other hazardous substances present as water/solvent evaporates)

If the packaging:

(i) does not contain any contamination or residue (e.g. the residues and contamination have been removed by effective cleaning), or

(ii) the contamination or residual material is not a hazardous substance(s)

then you consider whether the packaging material is itself made of hazardous material.

Some packaging can have as part of its construction a hazardous solid material; for example, some old fireproof packaging may contain asbestos. If this is the case the packaging waste will be considered 15 01 11*.

The appropriate non-hazardous packaging code is applied to empty packaging if:

- both residues and contamination are absent, or
- the residues and contamination do not possess a hazardous property

and

- the container is not made of a hazardous solid material

Annex 2

Checklists, diagrams and tables supporting classification of waste

Diagram 1: General approach to classification of waste

Diagram 2: Decision on mirror code use

Diagram 3: Use of List of Waste

Checklist 1: Collection of information on waste

Checklist 2: Decide whether substance or object is waste

Checklist 3: Decide whether a waste has ceased to be waste

Table 1: Waste groups in List of Waste

Table 2: Waste excluded from classification according to WMC Article 2(2)

Table 3: Recovery Operations (Annex I. in WMC)

Table 4: Disposal Operations (Annex II. In WMC)

Table 5: Properties of waste which render it hazardous

Table 6: List of waste codes identified during practical exercise

Diagram 1: General approach to classification of waste

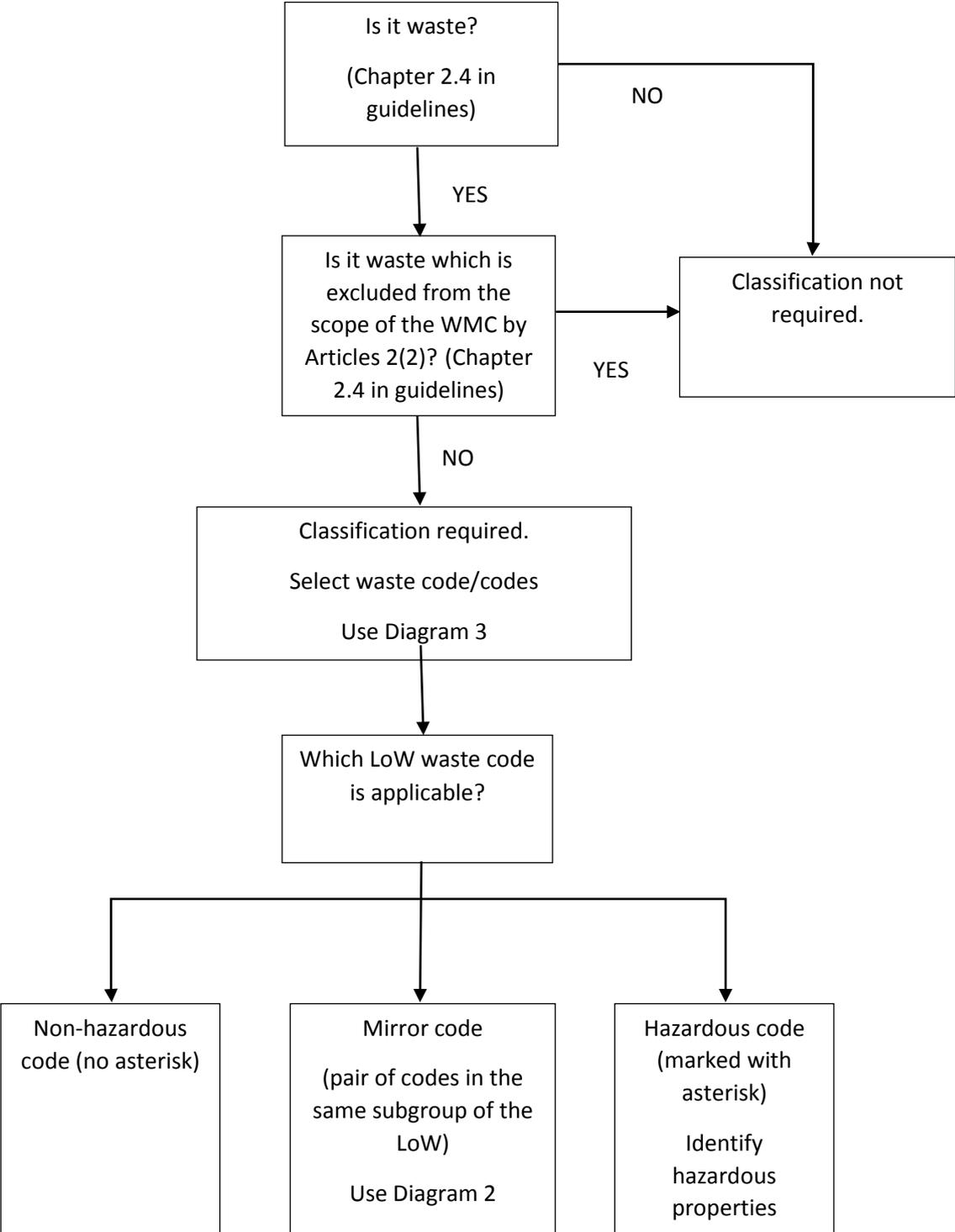


Diagram 2: Decision on mirror code use

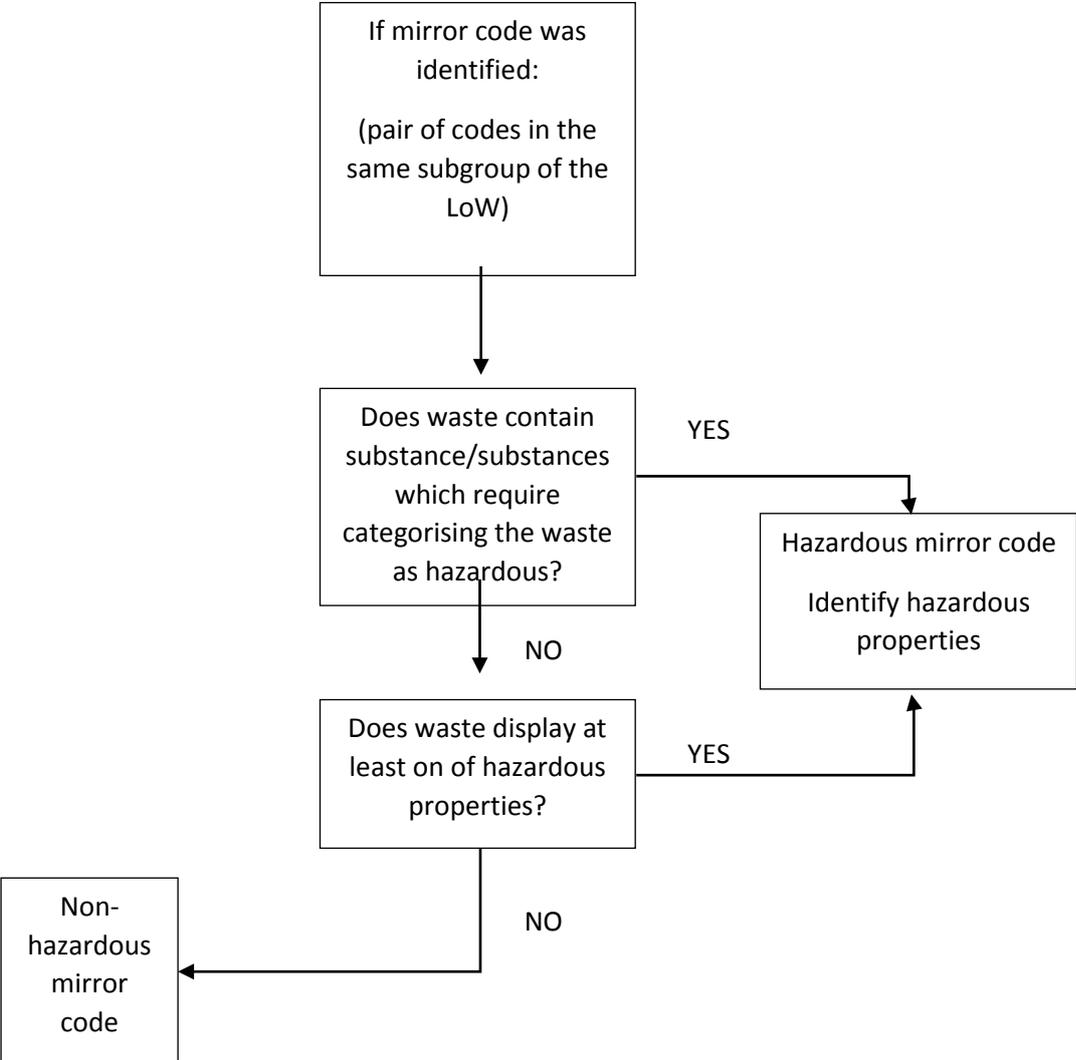
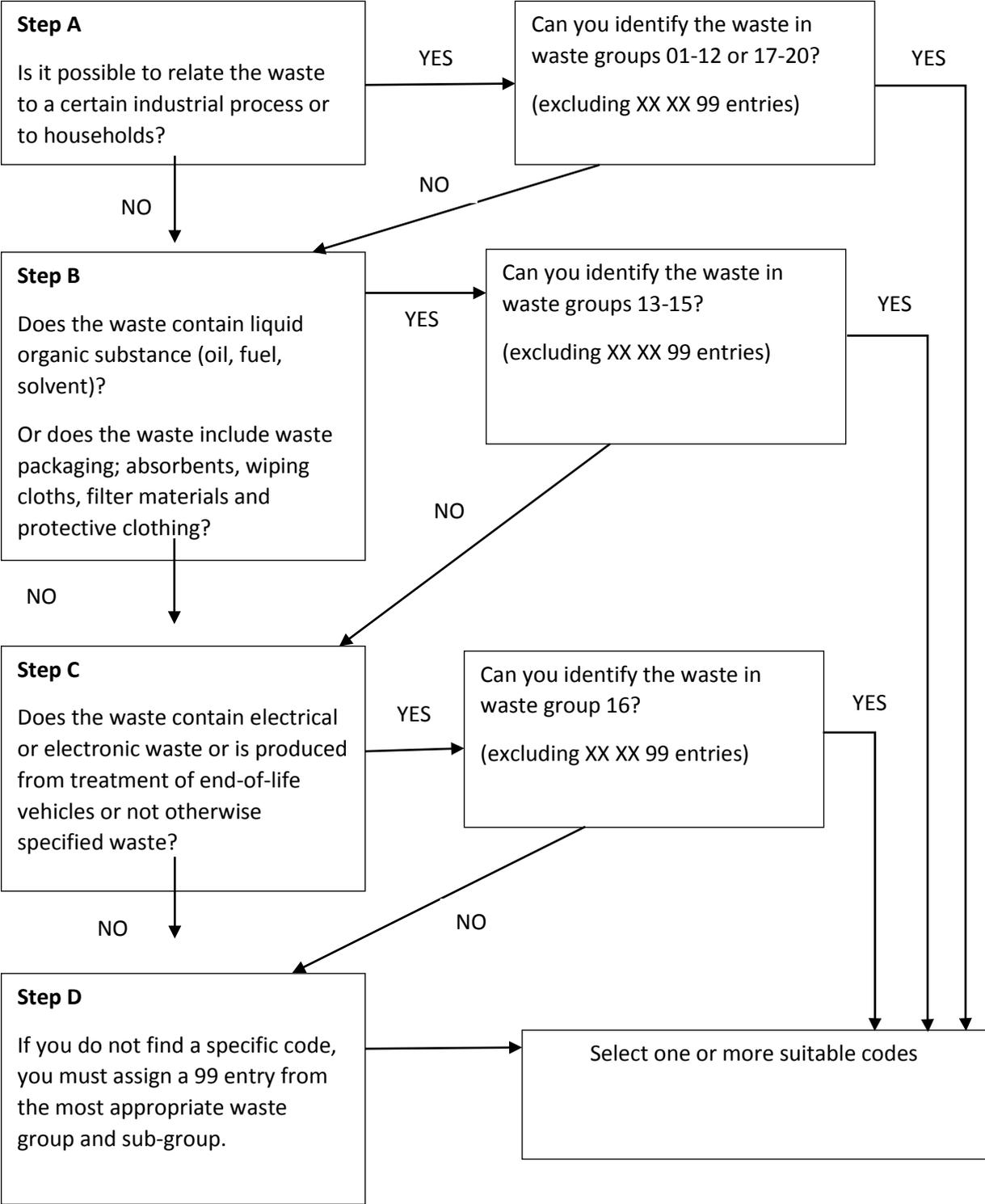


Diagram 3: Use of List of Waste



Checklist 1: Collection of information on waste

Question		YES	NO
GENERAL			
Is it waste? (Check Guidelines Chapter 2.4)			
Does the waste require classification? ()			
ORIGIN OF WASTE			
It is possible to identify the industry sector from which waste is produced? If yes, describe it.			
It is possible to identify the type of activity/process from which waste is produced? If yes, describe it.			
It is possible to identify the type of material from which waste is produced? If yes, describe it.			
MATERIAL FROM WHICH WASTE IS PRODUCED (Check Annex 3 of WMC for defining hazards and risks)			
Are hazardous pictograms marked on the packaging or on accompanying documentation? If yes, describe type of hazards.			
Are safety precautions written on the packaging or on accompanying documentation?			

If yes, describe type of safety risks.		
Are known any injuries / health damages to personnel/humans caused by the use of this material? If yes, describe type of injury /damage.		
Are known any accidents / damages to the environment caused by the use of this material? If yes, describe type of accidents / damages		
WASTE		
(Check Annex 3 of WMC for defining hazards and risks)		
Are known any injuries / health damages to personnel/humans caused by storage, transport or disposal of this waste? If yes, describe type of injury /damage.		
Are known any accidents / damages to the environment caused by storage, transport or disposal of this waste? If yes, describe type of accidents / damages		
It is known if the waste contains any chemical compounds which may cause damage to human health? If yes, describe them.		
It is known if the waste contains any chemical compounds which may cause damage to the environment? If yes, describe them.		
Is the waste placed in a packaging? If yes, describe the packaging. Can it be re-opened?		
Is the waste disposed? If yes, assign appropriate D code (Check Annex 2 of WMC)		
Is the waste recycled? If yes, assign appropriate R code (Check Annex 1 of WMC)		

Checklist 2: Decide whether substance or object is waste

(If the answer is YES, you stop evaluation and if the last answer is in the grey box, it is waste
If the answer is NO continue with the next question)

Also, check Chapter 2.4 in the guidelines for full understanding of a question

Question	Yes	No
Is the substance or object produced with the intention that it will be used or marketed or is it being re-used for the same purpose for which it was originally conceived?		
Is the substance or object a by-product of a production process?		
Does the substance or object need to be disposed of because of legal requirement?		
Has the substance or object been transferred to a disposal operation or to a recovery operation?		
Does the substance or object have a low or negative economic value?		
Is the substance or object hazardous or polluting?		
Is the substance or object still suitable for its use?		
Is the substance or object being given or sold to others as second hand goods?		

Checklist 3: Decide whether a waste has ceased to be waste

(If the answer is YES, you stop evaluation and if the last answer is in the grey box, it is waste
If the answer is NO continue with the next question)

Also, check Chapter 2.5 in the guidelines for full understanding of a question

Question	Yes	No
Has the waste only been pre-treated, rather than fully recovered or recycled?		
Have all unwanted substances been removed from the waste?		
Is recovered/recycled material fully suitable as a replacement for a non-waste material?		
If the waste has been fully recovered/recycled, is it certain to be used?		
Can the recovered/recycled material be used without undermining the aims of the waste legislation?		
Has the waste been converted or transformed into a distinct product?		

Table 1: Waste groups in List of Waste

CODE	WASTE GROUP DESCRIPTION	PRIORITY
01	Wastes resulting from exploration, mining, quarrying, physical and chemical treatment of minerals	Step A
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing	
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard	
04	Wastes from the leather, fur and textile industries	
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	
06	Wastes from inorganic chemical processes	
07	Wastes from organic chemical processes	
08	Wastes from the manufacture, formulation, supply and use (mfsu) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	
09	Wastes from the photographic industry	
10	Wastes from thermal processes	
11	Wastes from chemical surface treatment and coating of metals and other materials; non-ferrous hydro-metallurgy	
12	Wastes from shaping and physical and mechanical surface treatment of metals and plastics	
13	Oil wastes and wastes of liquid fuels (except edible oils, 05 and 12)	
14	Waste organic solvents, refrigerants and propellants (except 07 and 08)	
15	Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	
16	Wastes not otherwise specified in the list	Step C
17	Construction and demolition wastes (including excavated soil from contaminated sites)	Step A
18	Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)	
19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use	
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	

Table 2: Waste excluded from classification according to WMC Article 2(2)

radioactive waste;
gaseous effluents emitted into the atmosphere;
land (in situ) including unexcavated contaminated soil and buildings permanently connected with land;
uncontaminated soil, naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state;
waste waters, pollution of water bodies (including the Black Sea) with waste waters and/or waste;
decommissioned explosives;
faecal matters / manure and other non-hazardous materials of a natural origin used in farming or forestry;
mining waste, i.e. waste resulting from the prospecting, extraction, processing and storage of mineral resources and the working of quarries.
decommissioned chemicals of military purposes
non-contaminated sludge excavated in the course of exploitation and rehabilitation measures of land reclamation systems, which are subject to disposal on the sale lines of the system.

Table 3: Recovery Operations (Annex I. in WMC)

R 1	Use principally as a fuel or other means to generate energy	Covers the incineration and co-incineration of waste in power stations and industrial facilities such as cement kilns so that the resultant energy can be used to generate heat or electricity. Common examples are- use of tyres, waste oils, or spent solvents in cement kilns; co-incineration of sewage sludge or refuse-derived fuel (RDF) from municipal waste in power stations.
R 2	Solvent reclamation / regeneration	Covers all treatment activities, whose purpose is the regeneration or recovery of spent solvents, e.g.re-refining of solvents in order to separate contaminants and to restore the solvent to its original quality or to a lower grade product (e.g. lacquer thinner); preparation of secondary liquid fuels, usually by blending with other liquid wastes.
R 3	Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)	Operations whose purpose is the recovery of biodegradable and non-biodegradable organic materials. These operations include the following: recycling of waste paper and cardboard; reprocessing and recycling of plastic waste; composting of bio waste and green waste; fermentation of biodegradable waste for biogas production (biogas plants).
R 4	Recycling/reclamation of metals and metal compounds	Covers all treatment operations whose purpose is the recycling of metal waste, and of complex products with metals as the predominant material. The treatment operations include a variety of mechanical, thermal and chemical treatment steps and processes, such as the following: recycling of scrap and production waste in steelworks; shredding and reprocessing of ELVs and WEEE; thermal treatment of cables or oil-contaminated metals; battery recycling; electrolytic recovery of silver from photo chemicals.
R 5	Recycling/reclamation of other inorganic materials	Operations whose purpose is the recovery of inorganic non-metal wastes and which are not covered by other more specific operations (e.g. R6, R8, R10). Inorganic non-metal wastes represent a large proportion of the total waste generated and consist of a broad spectrum of waste types. The main groups are waste from thermal processes (slag, ashes, sands, dust etc.), construction & demolition waste, and waste from mining and quarrying. The treatment processes include the following: reprocessing of construction and demolition waste; reprocessing and recycling of glass waste; use as secondary raw material in cement kilns; asphalt mixing plants. This includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
R 6	Regeneration of acids or bases	Comprises operations whose purpose is the regeneration and subsequent reuse of spent acids/bases for the original purpose or for other purposes. For example, re-concentration of spent acids; the thermal decomposition of spent sulphuric acid for use as feedstock in sulphuric acid production
R 7	Recovery of	Treatment operations whose purpose is the regeneration of

	components used for pollution abatement	pollution abatement materials such as activated carbon and ion exchange resins, for example regeneration of activated carbon from water purification and flue gas treatment, mainly by thermal treatment; the regeneration of ion exchange resins by solvent washing.
R 8	Recovery of components from catalysts	Covers treatment operations whose purpose is regeneration of catalysts to be reused as catalysts; the recovery of catalyst components, mainly of metal components, e.g. recycling of precious metals from catalytic converters in vehicle exhausts.
R 9	Oil re-refining or other reuses of oil	Covers all processes whose purpose is the reuse of waste oil. The two main options are the re-refining of waste oil and the preparation of fuels from waste oils.- Re-refining reconverts waste oils into base oils which can be used to manufacture lubricating products; use to generate fuel which can be used as a substitute for coal, diesel and light fuel.
R 10	Land treatment resulting in benefit to agriculture or ecological improvement	Covers the use of organic and mineral wastes as fertilisers or soil conditioners in agriculture; other applications of waste on land on which no food and feed crops are cultivated, and which result in ecological improvement such as landscape restoration and restoration of old disused quarries. The following are examples of R10: sewage sludge in agriculture; the spreading on land of compost from the treatment of separately collected biowaste; the use of manure in compliance with agricultural regulations; the use of mineral wastes as fertilisers. Compare with D 2.
R 11	Use of waste obtained from any of the operations numbered R 1 to R 10	Comprises the recovery of residual waste from previous recovery operations. This code covers only treatment operations that could not be assigned to one of the more specific R codes.
R 12	Exchange of waste for performing of any of the operations numbered R1 to R11	Covers preparatory treatment activities prior to recovery such as basic sorting activities; mixing of waste from different generators before it is sent to a recovery facility; transfer and compaction of waste; shredding of wood waste prior to energy recovery. If there is no other R code appropriate, this can include preliminary operations prior to recovery including dismantling, sorting, crushing, compacting, pelletising, drying, shredding, repackaging, separating or mixing etc. prior to submission to any of the operations numbered R1 to R11
R 13	Storage pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced)	Temporary storage of waste prior to recovery/recycling is limited to a period of <3 years. Does not apply to storage of waste prior to collection at the site at which it was generated. This code shall not be used for MSW container stands or operational waste accumulation points needed in production process in a company from which waste is regularly moved waste storage site from which it is sent for recovery/recycling. Compare with D15.

Table 4: Disposal Operations (Annex II. In WMC)

D 1	Deposit into or on to land (e.g. landfill, etc.)	Permanent deposit of waste in controlled landfills, uncontrolled dumps or other areas allocated for waste disposal. Deposit of overburden, waste rock and tailings on heaps in the extractive industry.
D 2	Soil treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.)	Spreading of waste on land, often followed by the incorporation of the waste into the soil, which does not result in benefit to agriculture or other ecological improvements. Generally applies to non-hazardous sludge and liquid wastes, e.g. disposal of dredging sludge (compare with R 10)
D 3	Deep injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)	Means the injection of waste into natural and artificial cavities (e.g. salt domes, wells, mines), or into porous formations of rock.
D 4	Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.)	Means the deposit of waste in natural or engineered ponds, pits or lagoons (impoundment), which is the predominant method for the management of tailings in mining operations (e.g. in the metal mining sector).
D 5	Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)	Specially engineered landfills for waste above ground Construction and operation standards of specially engineered landfills usually exceed standards defined in the law.
D 6	Release into a water body except seas/oceans	Deposit of non-hazardous dredging sludge and other non-hazardous sludge in surface water including the bed and the subsoil. This includes disposal of liquid waste into public sewer, if allowed by waste water legislation.
D 7	Release to seas/oceans including sea-bed insertion	Discharge of waste at sea in accordance with the OSPAR Convention (e.g. inert materials of natural origin).
D 8	Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12	Comprises operations which use aerobic or anaerobic biological processes in order to prepare the waste for subsequent disposal, e.g. by reducing the amount of biodegradable components or by degradation of organic pollutants. This includes biological-mechanical treatment of municipal waste; biological treatment of contaminated soil, sludges or mineral wastes, if followed by disposal.
D 9	Physico-chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by	Covers the pre-treatment of mainly fluid and pasty hazardous waste by a variety of chemical, thermal and physical processes in order to achieve an output which can be disposed of. Physico-chemical treatment is typically deployed for emulsions and oil/water mixtures, neutral aqueous organics and inorganics (production specific waste water, leachate, etc.), cyanides, acids and

	means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcination, etc.)	alkalis. Typical treatment steps are detoxification (oxidation/reduction), precipitation, neutralisation, emulsion separation, immobilisation, electrolysis and osmosis.
D 10	Incineration on land	Covers the incineration of waste where the main purpose of the incineration is the thermal treatment of waste in order to reduce the volume and the hazardousness of the waste, and to obtain an inert product that can be disposed of. The generated <u>energy is not used</u> – compare with R 1. The most common examples are municipal solid waste incineration plants (unless they fulfil the energy efficiency standards under Annex II of the Waste Framework Directive), hazardous waste incineration plants, sewage sludge incineration plants, incineration plants for clinical waste or animal carcasses. D10 also covers the incineration of waste in co-incineration plants where the waste undergoes thermal treatment rather than being used as a fuel.
D 11	Incineration at sea	<i>This operation is prohibited by EU legislation and international conventions</i>
D 12	Permanent storage (e.g. emplacement of containers in a mine, etc.)	Disposal sites for permanent underground storage of waste in mines, caves or other underground structures.
D 13	Blending or mixing prior to submission to any of the operations numbered D 1 to D 12	Covers preparatory activities whose purpose is the conditioning and packaging of waste for subsequent transport and further treatment prior to disposal. Includes basic sorting activities; crushing and shredding of waste in order to reduce the volume of waste for transport or landfilling; mixing and blending of waste (e.g. mixing of similar wastes from different waste generators); homogenisation, conditioning and solidification If there is no other D code appropriate, this can include preliminary operations prior to disposal including sorting, crushing, compacting, pelletising, drying, shredding or separating etc. prior to submission to any of the operations numbered D1 to D12).
D 14	Repackaging prior to submission to any of the operations numbered D 1 to D 13	Covers preparatory activities whose purpose is the conditioning and packaging of waste for subsequent transport and further treatment prior to disposal. Includes transfer and compaction of waste; packaging or repackaging of asbestos, pesticides or other waste.
D 15	Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage, pending collection, on the site where the waste is produced)	Temporary storage of waste prior to disposal is limited to a period of <1 year. Does not apply to storage of waste prior to collection at the site at which it was generated. This code shall not be used for MSW container stands or operational waste accumulation points needed in production process in a company from which waste is regularly moved waste storage site from which it is sent for disposal. Compare with R 13.

Table 5: Properties of waste which render it hazardous

H 1	"Explosive": substances and preparations which may explode under the effect of flame or which are more sensitive to friction than dinitrobenzene.
H 2	"Oxidizing": substances and preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.
H 3-A	"Highly flammable" - liquid substances and preparations having a flash point below 21°C (including extremely flammable liquids), or - substances and preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or - solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or - gaseous substances and preparations which are flammable in air at normal pressure, or - substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.
H 3-B	"Flammable": liquid substances and preparations having a flash point equal to or greater than 21 °C and less than or equal to 55 °C.
H 4	"Irritant": non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.
H 5	"Harmful": substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.
H 6	"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.
H 7	"Carcinogenic": substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.
H 8	"Corrosive": substances and preparations which may destroy living tissue on contact.
H 9	"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.
H 10	"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.
H 11	"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.
H 12	Waste which releases toxic or very toxic gases in contact with water, air or an acid.
H 13	"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.
H 14	"Ecotoxic": waste which presents or may present immediate or delayed risks for one or more sectors of the environment.
H 15	Waste capable by any means, after disposal, of yielding another substance, e.g. a leachate, which possesses any of the characteristics listed above.

