UNIFIED HAZARDOUS WASTE IDENTIFICATION GUIDE

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Abbreviations used in the text

EU – European Union

OECD – Organisation for Economic Cooperation and Development

EPA – Environmental Protection Agency

EPD – Environmental Protection Department

ELV – end-of-life vehicle

EEE – electrical and electronic equipment

PPWIS – Unified Product, Packaging and Waste Record Keeping Information System

RWMC – Regional Waste Management Centre

BWCS – bulky waste collection site

CEN– European Committee for Standardisation

PET – polyethylene terephthalate

HDPE – high-density polyethylene

LDPE – low-density polyethylene

PP – polypropylene

PS – polystyrene

PCBs – polychlorinated biphenyls

PCTs – polychlorinated terphenyls

POPs – persistent organic pollutants

ECDC – European Centre for Disease Prevention and Control

REACH – Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency

CLP – Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

WFD – Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives

Regulation (EU) No 1357/2014 or Annex III to the WFD – Commission Regulation (EU) No 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives

1 Introduction

The harmonised classification of waste is applicable in the European Union according to the List of waste (the '**European List of Waste**' or '**LoW**', as defined by Article 7 of Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (the '**WFD**'), and approved by Commission Decision 2014/955/EU of 18 December 2014[1] (the '**Decision on the List of Waste**' replacing Commission Decision 2000/532/EC of 3 May 2000[2]). Properties for classification as hazardous waste are listed in Annex III to the WFD (replaced by Commission Regulation No 1357/2014 of 18 December 2014[3], the '**Regulation (EU) No 1357/2014**'). To give technical guidance on certain aspects of the Waste Framework Directive and the Decision on the List of Waste, as revised in 2014 and 2017, the European Commission published Notice No 2018/C 124/01 on technical guidance on the classification of waste (the '**EU Guidance**'), providing clarifications and guidance to national authorities, including local authorities, and businesses on the correct interpretation and application of the relevant EU legislation regarding the classification of waste, namely identification of hazardous properties, assessing if the waste has a hazardous property and, ultimately, classifying the waste as hazardous or non-hazardous.

The provisions of the WFD discussed above have been transposed to the Law on Waste Management of the Republic of Lithuania and the implementing legislation, the main being the Waste Management Rules approved by Order No 217 of the Minister for Environment of 14 July 1999 (the '**Waste Management Rules**'), containing the List of waste in Annex 1 (the '**List of waste**'). As mentioned above, EU regulations are directly applicable in the Member States; therefore, the Waste Management Rules only refer to the obligation to follow **Regulation (EU) No 1357/2014** when identifying hazardous waste. In Lithuania, as in other EU Member States, there are other legal acts related in one way or another to the identification of waste.

Details of EU and national legislation can be found in 0.

The purpose of this Guide (the 'Guide') is to summarise the requirements laid down in legal acts and the information contained in reference sources and provide recommendations and decision-making schemes for the correct assessment and application of national and European Union (the 'EU') legislation on the classification of waste to ensure proper and efficient identification and classification of hazardous waste leading to safe and efficient collection and management of hazardous waste. The Guide has been prepared subject to the conclusions of the Overview, good practices in hazardous waste identification, and the analysis of the current situation and experience in identifying and classifying waste in Lithuania and abroad. The Guide is universal and targets all stakeholders: waste producers, waste managers, and state and municipal institutions.

[1] Commission Decision 2014/955/EU of 18 December 2014 amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council.

[2] Commission Decision 2000/532/EC of 3 May 2000 replacing Decision 94/3/EC establishing a list of waste pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (notified under document number C(2000) 1147).

[3] Commission Regulation (EU) No 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives.

2 Classification of hazardous waste

2.1 Stages for the classification of hazardous waste

The essential purpose of classifying waste is to assign the relevant code from the List of waste to the waste under the legal requirements. It is the responsibility of the waste producers to assign the correct waste code.

In general, the classification of hazardous waste includes the following procedures:

- **Initial selection of the waste code**. After selecting the most appropriate waste code depending on its type (for the types of waste codes in the List of waste and the instruction on the use of the List of waste, see Chapter 2.3.2), there are two options: (1) the classification of waste may end at this stage or (2) further steps must be taken;
- **Assessment of whether waste has hazardous properties** (see Chapter 2.5). This stage requires specific knowledge and information, and tests must be conducted where appropriate.

Taking into account that the identification of waste is a complex process requiring particular expertise and that, under the provisions of the Law on Waste Management, the obligation to identify hazardous waste does not apply to holders of waste produced by households, in this Guide, the waste classification process is divided into the following parts (see Fig. 1):

- Classification of hazardous waste produced by households (see Chapter 2.2)
- Classification of other waste:
    - **Stage I: Selection of the proper waste code.** At this stage, it is crucial to select the proper waste code to determine its type (ANH = absolutely non-hazardous, AH = absolutely hazardous, MH = mirror hazardous, MNH = mirror non-hazardous) and to determine whether further action is necessary (Chapter 2.3).
    - **Stage II: Classification of certain specific waste.** At this stage, recommendations are provided on the classification of certain specific waste streams (packaging waste, WEEE, ELVs, wood waste, grinding sludge, filter materials and wiping cloths, rubber waste, and dental waste), taking into account their specific characteristics, without proceeding with the Stage III actions.
    - **Stage III: Classification of waste according to its hazardous properties.** This stage is required where the waste code assigned to the waste is a mirror entry (for the waste code types, see Chapter 2.3.1), and the waste has not been identified in Stage II; or where the waste classification algorithm is not foreseen in Stage II.
- The Annexes at the end of the Guide contain a reference, methodological and supporting information to facilitate the practical application of the legislative provisions on the classification of hazardous waste. The Annexes also provide examples of waste classification.

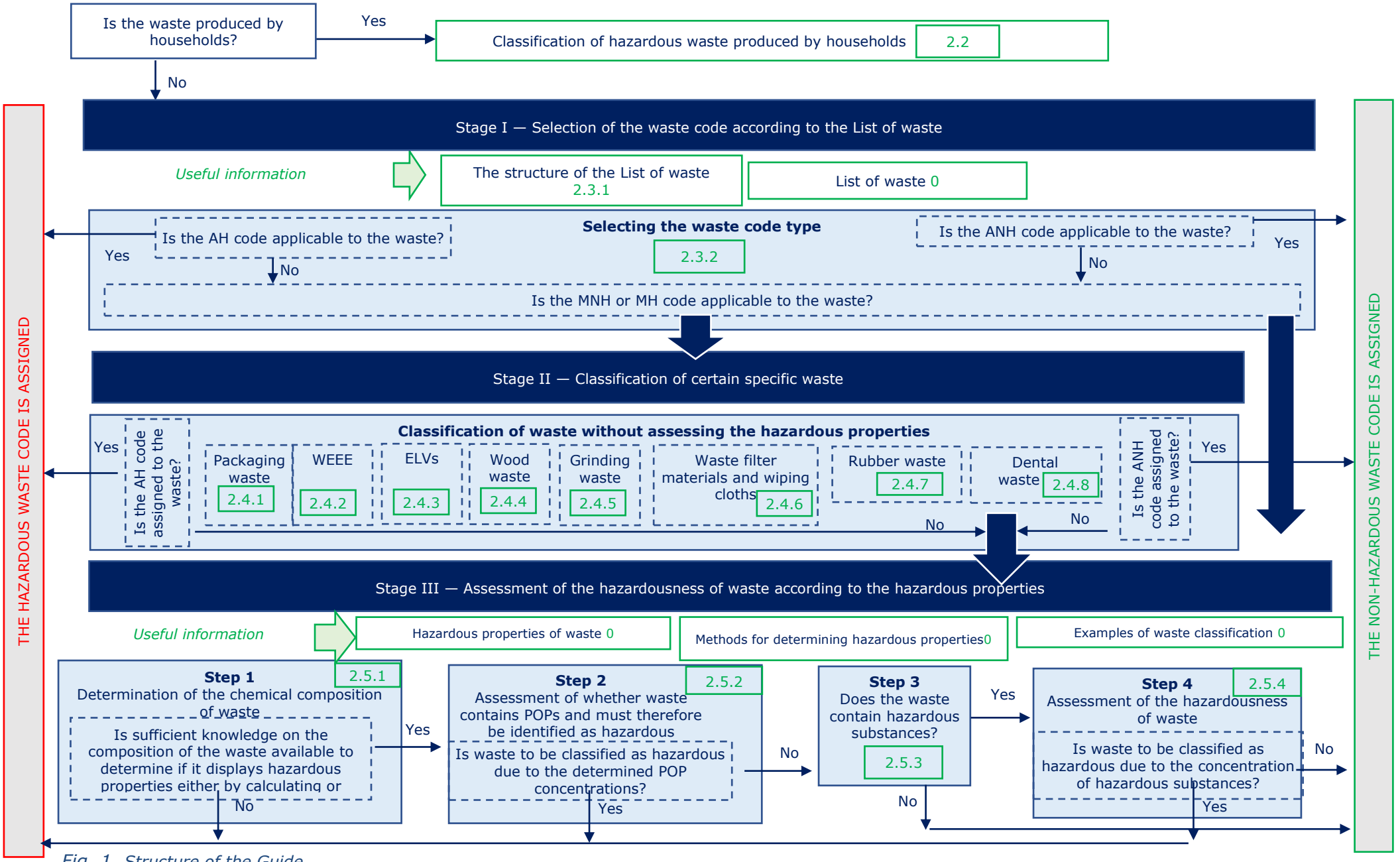


Fig. 1 Structure of the Guide

2.2 Identification and classification of hazardous waste produced by households

Hazardous waste produced by households is the waste produced by households (including their garages and gardens), which contain hazardous properties, such as the residues of household chemicals and cleaning agents; residues of cosmetic and personal hygiene products (nail varnish, nail varnish remover, hair dye, etc.; residues of paints, varnishes, solvents, thinners, inks and glues; residues of household and garden pesticides, insecticides, and herbicides; photochemicals; old medicines and medical supplies (syringes, needles, thermometers, etc.); packaging for various hazardous substances and mixtures; asbestos (slate) wastes; wood waste treated or contaminated with preservatives; waste from vehicles and their maintenance (lubricants, oils, liquids, filters, cleaning and polishing agents, etc.); mercury-containing waste (fluorescent tubes, energy-efficient compact fluorescent lamps, batteries and accumulators), etc., including such waste collected from other sources, where such waste is similar in nature or composition to that produced by households.

For the proper identification, classification and sorting of household hazardous waste, see 0.

2.3 Stage I — Selecting the waste code type

In Lithuania, waste must be identified (by carrying out waste accounting and transferring waste to waste managers operating in Lithuania) by waste codes according to the List of waste provided in Annex 1 of the Waste Management Rules. This List of waste is based on the European LoW approved by Commission Decision 2000/532/EC, as amended by Commission Decision 2014/955/EU (applicable as of 1 June 2015). The main difference between the List of waste used in Lithuania and the European LoW is that eight-digit codes instead of six-digit codes cover specific waste; other than that, the structure of the List of waste and the rules for its use are entirely in line with the European LoW.

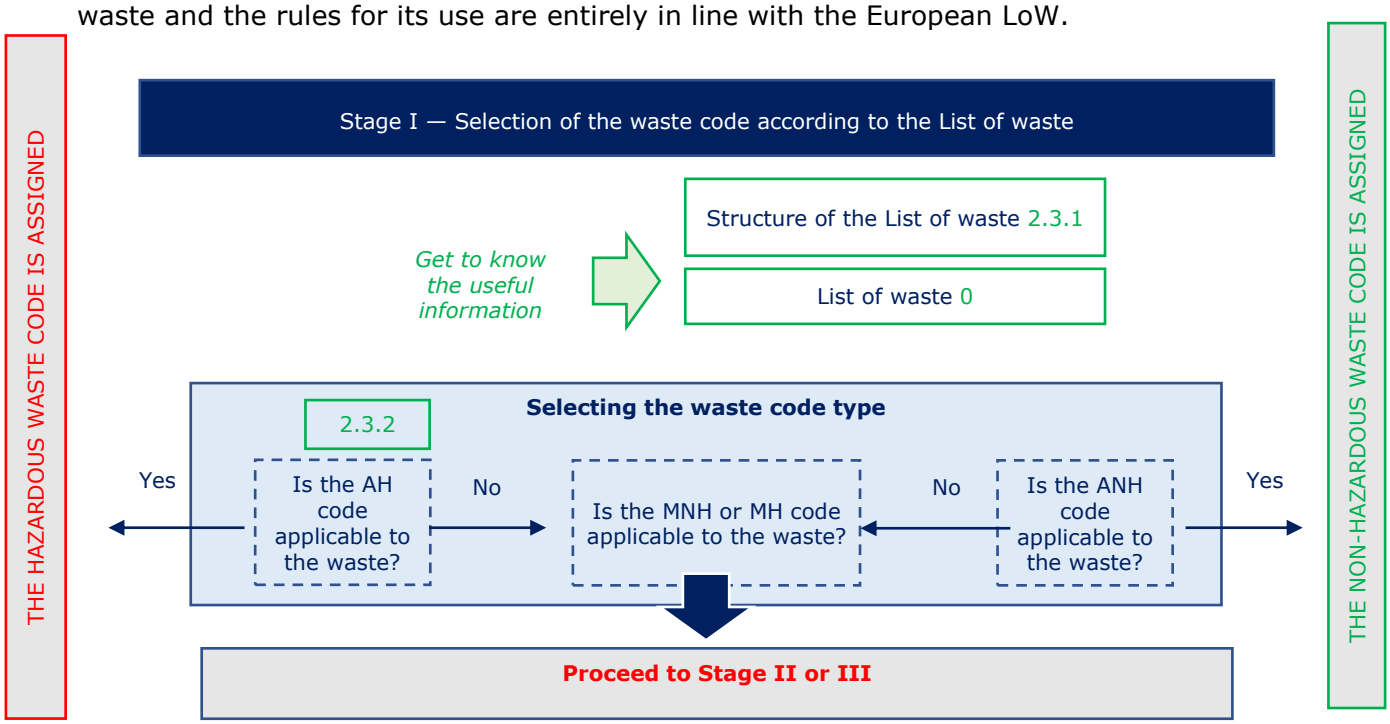


Fig. 2 Algorithm for the steps in Stage I — Selection of the waste code according to the List of waste

Important: A particular sequence of actions must be followed to select a proper waste code from the List of waste (see Chapter 2.3.2).

2.3.1 Structure of the List of waste

The List of waste contains 20 *chapters* (two-digit codes). These chapters are divided into *sub-chapters* (four-digit codes) and *entries* (six-digit codes and eight-digit codes for certain wastes). There are two types of the waste chapters: some are listed by the source of generation, while others are listed by the type of waste (see Fig. 3 and Fig. 4).

The List of waste contains hazardous and non-hazardous waste. Any entry marked with an asterisk (*) is considered hazardous waste. The overall 842 entries of the List of waste can be divided into:

- absolute non-hazardous (ANH),
- absolute hazardous (AH),
- mirror hazardous (MH),
- and mirror non-hazardous (MNH) entries.

Number of entries in the List of waste

842 entries in the List of Waste			
408 Hazardous entries		**434 Non-hazardous entries**	
230 AH	**178 MH**	**188 ANH**	**246 MNH**

Fig. 3 Number of entries in the List of waste

Point 5 of Annex 1 to the Waste Management Rules:

If the code type ANH is assigned to the waste code, it shall be considered non-hazardous, and no assessment of hazardousness is required.

If the code type AH is assigned to the waste code, it shall be considered hazardous, and no assessment of hazardousness is required.

If the code type MNH or MH is assigned to the waste code, the hazardousness of waste must be assessed.

Please note: *If the code type MNH or MH is assigned to the waste code, the hazardousness of waste must be assessed. The hazardousness of waste is assessed by performing the steps of Stage III described in Chapter 2.5.*

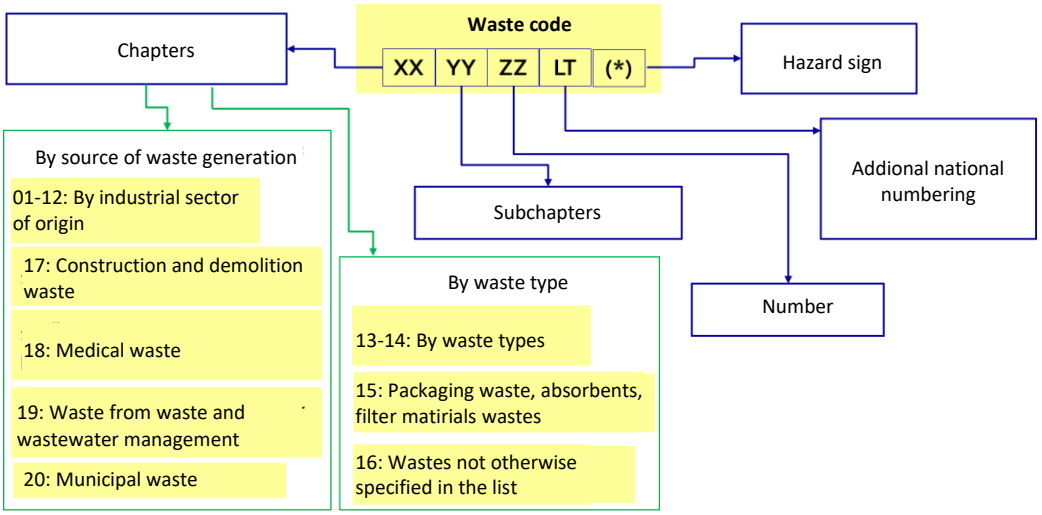


Fig. 4 Structure of the List of waste

2.3.2 Selection of the waste code according to the List of waste

Important: to select a proper waste code from the List of waste, a particular sequence of actions must be followed, as set out ***in points 3 and 4 of Annex 1 to the Waste Management Rules****.*

The following procedure should be followed to determine the waste code according to the List of waste (see also Fig. Fig. 5):

- Identify the source generating the waste in Chapters 01 to 12 or 17 to 20 and identify the appropriate six-digit or eight-digit code of the waste (excluding codes ending with 99 of these chapters).
- If no appropriate waste code can be found in Chapters 01 to 12 or 17 to 20, the Chapters 13, 14 and 15 must be examined to identify the waste;
- If none of these waste codes applies, the waste must be identified according to Chapter 16;

- If the waste is not in Chapter 16 either, the 99 code (wastes not otherwise specified) must be used in the section of the List corresponding to the activity identified in the first step.
- To determine a waste code within the List, the eight-character waste code is first identified. If none of the eight-digit waste codes is applicable, then the six-digit waste code is used.

Important notes:

Only a six-digit or eight-digit code is used for the waste classification; however, the name of waste must be linked to the chapter and sub-chapter headings to classify waste.

For example: for the waste named 'glass', the List of waste contains at least two codes — 16 01 20 and 20 01 02, the first being automotive glass and the one being glass fraction separately collected from the municipal waste stream.

Waste resulting from a single production or economic activity process may be classified in different chapters.

To distinguish between aqueous liquid wastes and concentrates (e.g. waste codes 16 10 01* aqueous liquid wastes containing hazardous substances; 16 10 02 aqueous liquid wastes other than those mentioned in 16 10 01; 16 10 03* aqueous concentrates containing dangerous substances; 16 10 04 aqueous concentrates other than those mentioned in 16 10 03), the waste containing 25% of water (or more) can be considered as aqueous liquid waste.

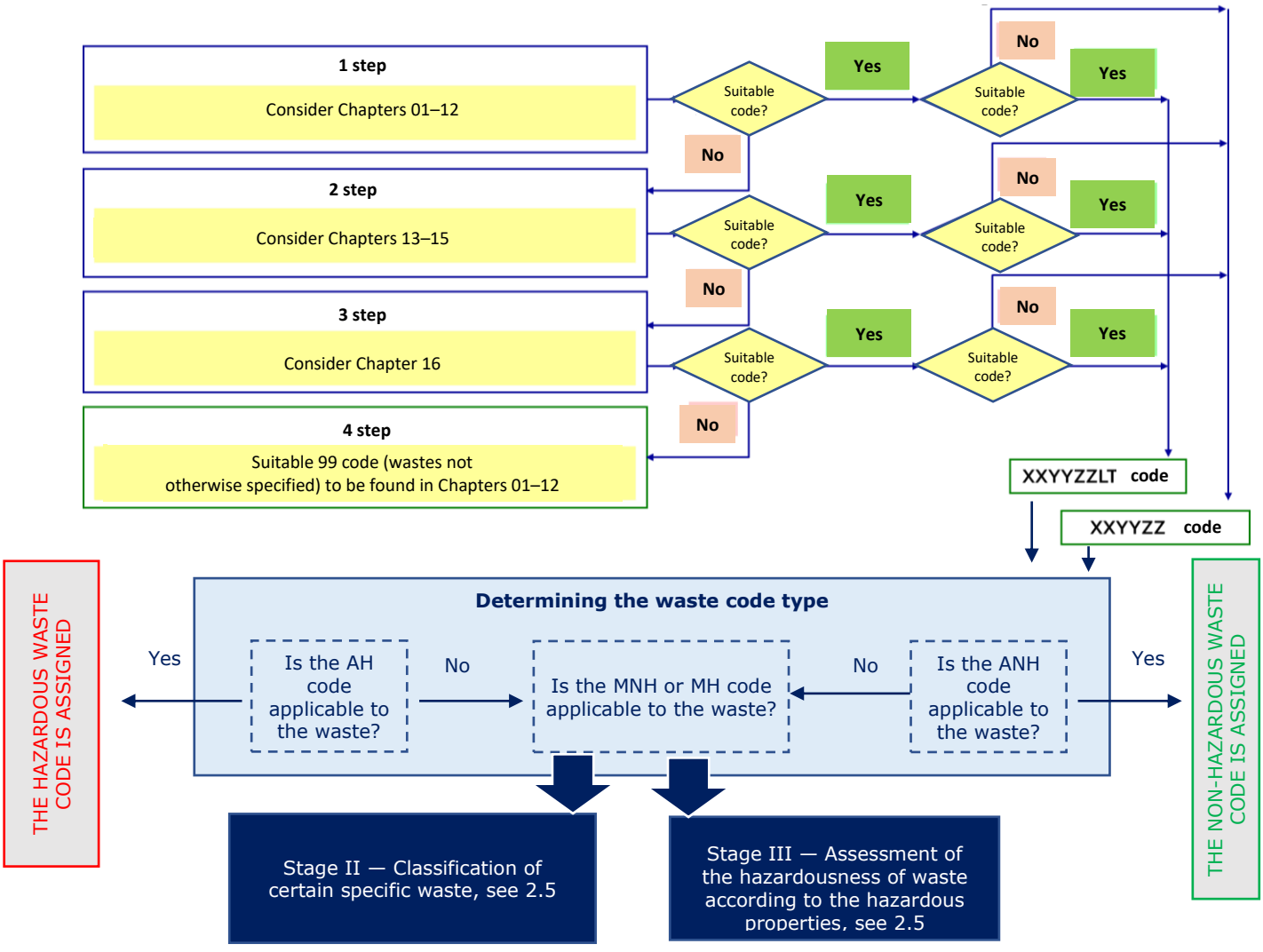


Fig. 5 The course of action for selecting the waste code

Example
Examples for chapters, sub-chapters and entries are provided below:
Chapter: 20 MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
Sub-chapter: 20 01 Separately collected fractions (except 15 01)
Entry: 20 01 02 Glass
When classifying a waste, you first need to ensure the waste falls within the scope of the chapter title. If it does, you then check whether it falls within the scope of the sub-chapter title. Only then can you look within for an appropriate code.

For the example above of waste classified with entry 20 01 02, this means that the waste:
— must stem from households or household-like commercial, industrial or institutional waste (to fall under chapter 20);
— must be collected separately (to fall under sub-chapter 20 01); and
— must consist of glass;
— but must not be glass packaging because packaging waste is excluded from sub-chapter 20 01 by its title and has to be assigned with an entry of chapter 15 for packaging waste.

2.4 Stage II — Classification of certain specific waste streams

This Chapter describes the classification of some specific waste streams where waste can be classified without complete identification of the waste, i.e. without the steps specified in Stage III.

Failure to identify the waste (i.e. to assign a specific waste code) in the ways specified at this stage requires the steps specified in Stage III (see Chapter 2.5).

2.4.1 Packaging waste

This Chapter provides guidance on how packaging should be classified, with a greater focus on packaging from dangerous substances or mixtures, as waste packaging containing non-hazardous substances or mixtures should be classified as *non-hazardous*.

Information on the identification and management of hazardous packaging waste *produced by households*, including such waste collected from other sources, where such waste is similar in nature or composition to that produced by households, is provided in 0.

Packaging waste is classified under sub-chapter 15 01 of the List of waste:

15 01	packaging (including separately collected municipal packaging waste)	
15 01 01	paper and cardboard packaging	MNH
15 01 02	plastic packaging (including PET (polyethylene terephthalate) packaging)	MNH
15 01 02 01	PET packaging	MNH
15 01 02 02	other plastic packaging	MNH
15 01 03	wooden packaging	MNH
15 01 04	metallic packaging	MNH
15 01 04 01	aluminium packaging	MNH
15 01 04 02	other metal packaging	MNH
15 01 05	composite packaging	MNH
15 01 05 01	composite packaging (predominantly consisting of paper and cardboard)	MNH
15 01 05 02	other composite packaging	MNH
15 01 06	mixed packaging	MNH
15 01 07	glass packaging	MNH
15 01 09	textile packaging	MNH
15 01 10*	packaging containing residues of or contaminated by hazardous substances	MH
15 01 11*	metallic packaging containing a dangerous solid porous matrix (for example, asbestos), including empty pressure containers	MH

The algorithm provided in Fig. 7 is recommended for the classification of packaging waste.

Classification of packaging containing residual material (with contents). When the packaging contains residual materials that cannot be removed by usual standards (e.g. due to size of aperture or nature of the material), then the waste should not be classified as packaging waste but as the **residual material waste** (e.g. half-empty tin of solidified varnish might be classified as 08 01 11*).

Classification of 'nominally empty' packaging. If the packaging contains small amounts of residues, it must be determined whether the packaging/containers are ***nominally empty***. The term '**nominally empty**' suggests the meaning that the product content was **effectively removed**. This removal can be achieved by draining or scraping. The circumstance that minimal residues of the contents are present in the packaging waste does not preclude the packaging waste from qualifying as 'nominally empty' and does not prohibit the packaging waste from falling under sub-chapter 15 01 packaging waste.

a)

(b)

Fig. 6 Examples of packages are: (a) 'nominally empty' packaging and (b) packaging containing residual materials (with contents) (photo sources: (a) http://suespottedterracegarden.blogspot.com, (b) https://www.howtocleanstuff.net.

The **'nominally empty' packaging** means packaging that has been appropriately emptied ('free of trickles' such as leftover powder, sludge and drops; brush clean, spatula clean), except for unavoidable residues, without applying additional measures (such as heating). The packaging is considered to have been emptied adequately if, in the case of a renewed attempt of emptying, such as inverting the packaging, no longer drops or solid remains are released. The term does not include cleaning of containers.

If the packaging is washed to remove the contents, further considerations should be taken to ensure an environmentally sound method is used.

If the packaging is nominally empty, it should be checked if it is metallic packaging which contains a dangerous solid porous matrix (e.g. asbestos in old fireproof packaging material), including empty pressure containers. Such metallic packaging needs to be assigned to code 15 01 11*.

*Nominally empty packaging always is considered **hazardous waste** if it is used to contain **explosive substances, substances hazardous to health or substances causing acute toxicity**, and is marked with adequate hazard pictograms:*

GHS01

'exploding bomb'

GHS08

'health hazard'

GHS06

'skull and crossbones'

Note: packaging of plant protection products may be exempted under specified conditions (see Chapter 'Classification of packaging of plant protection products' for more details).

Where packages are nominally empty but can be related to other hazardous substances or mixtures, they must be classified as hazardous (15 01 10*) if no assessment of the hazardous properties of packaging waste is carried out following Chapter III of the Guide.

Packaging which is nominally empty but which still can contain small quantities of residues can be either hazardous because (1) it displays hazardous properties because of the remaining residues OR because (2) it displays hazardous properties because of the packaging material itself (of which the packaging is manufactured) because it is contaminated with hazardous substances from the manufacturing process (e.g. with impregnating agents, stabilisers, flame retardants, plasticisers, pigments) or during the use phase.

Calculations of whether threshold limits defined in Annex III to the WFD, based on hazard statement codes, are exceeded should be based on the weight of the waste by comparing the amount of contained hazardous substances against the total weight of the nominally empty packaging plus the leftover residue. If hazardous properties can be related to the residue or the packaging material itself, the waste code 15 01 10* will apply. Otherwise, a non-hazardous code must be assigned according to the packaging material (codes 15 01 01 to 15 01 09).

An example of the classification of packaging waste in terms of hazardous properties is given in 0.

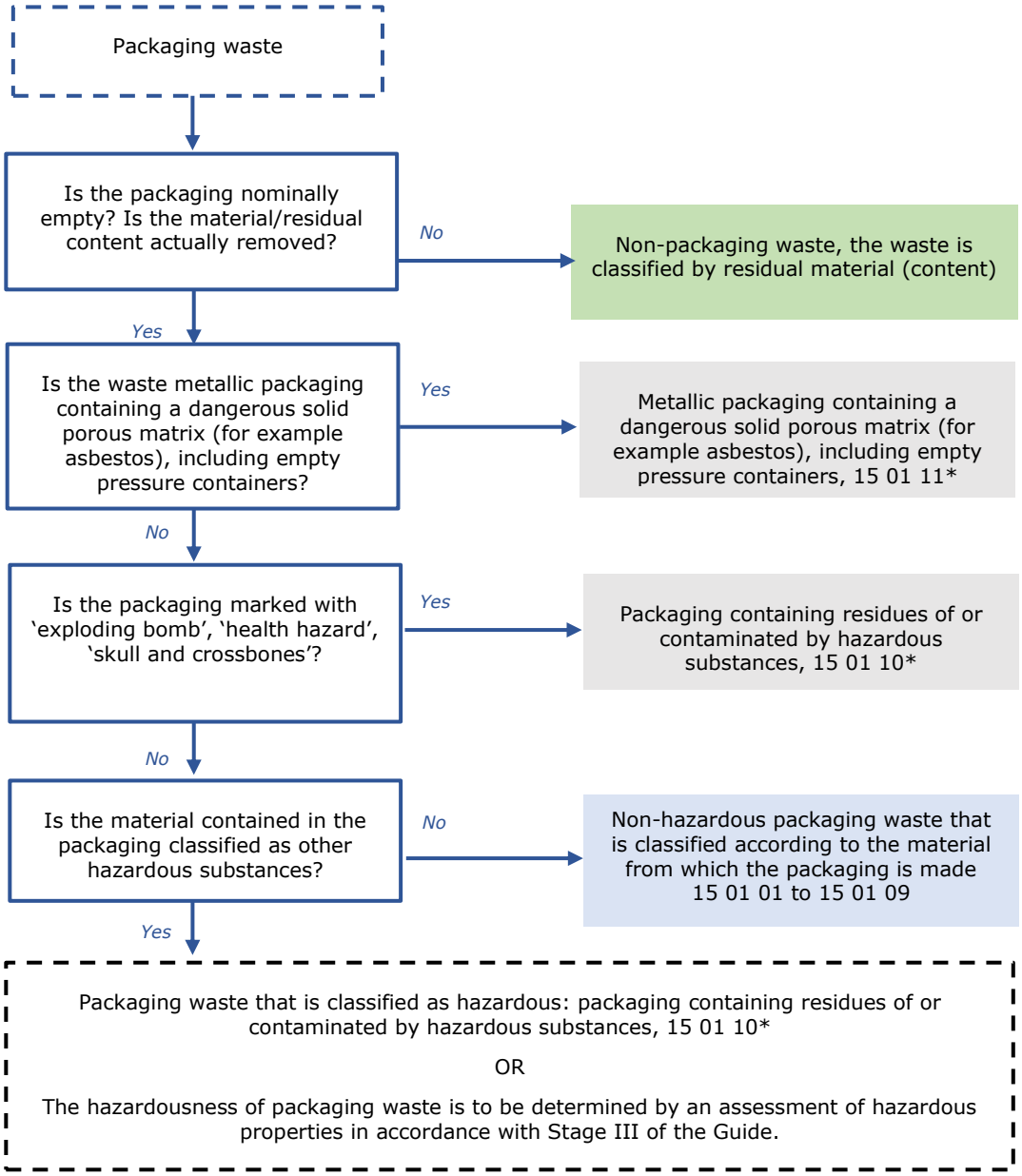


Fig. 7 Classification algorithm for packaging waste

Classification of packaging of plant protection products. Under the provisions of the *Rules on the storage, placing on the market, and use of plant protection products*, as approved by Order No 3D-564 of the Minister for Agriculture of the Republic of Lithuania 30 December 2003 (wording of Order No 3D-166 of the Minister for Agriculture of the Republic of Lithuania of 19 March 2018), when plant protection products are added to plant protection treatment equipment, the packaging of the plant protection product must be rinsed using triple or integrated rinsing methods, or washed with a compressed water jet. Residues of the spray solution, water used for rinsing the packaging of plant protection products and/or for inside cleaning of the treatment equipment must be sprayed on the field treated with that particular plant protection product.

The waste of the packaging of plant protection products rinsed according to the provisions of the *Rules on the storage, placing on the market and use of plant protection products* is classified as hazardous (15 01 10*), unless the assessment of the hazardous properties of packaging waste is carried out following Stage III of the Guide. Where the assessment of packaging of properly rinsed plant protection products reveals that packaging waste does not present any hazardous property, such packaging waste is classified by material from which it is produced, according to the relevant code of the List waste, e.g. 15 01 02, plastic packaging.

2.4.2 WEEE

According to the Law on Waste Management, ***electrical and electronic equipment*** *means equipment which is dependent on electric currents or electromagnetic fields to work properly and equipment for the generation, transfer and measurement of such currents or fields and designed for use with a voltage rating not exceeding 1 000 volts for alternating current and 1 500 volts for direct current. The list of categories of electrical and electronic equipment shall be approved by the Ministry of Environment.*

Waste electrical and electronic equipment*, on the other hand, means electrical or electronic equipment, which is waste that the holder discards or intends or is required to discard, including all components and sub-assemblies which are part of the electrical and electronic equipment at the time of disassembling*.

Electrical and electronic equipment ('**EEE**') is marked with a symbol identifying the separate collection of waste electrical and electronic equipment, i.e. WEEE cannot be disposed of together with other municipal waste and must be collected separately. The symbol for the marking of EEE:

If WEEE meets the above definition of WEEE, one of the codes of Chapter 16 or 20 of the List of waste is assigned to that waste. It should be noted that household WEEE, i.e. WEEE produced by households, as well as WEEE generated in commercial and industrial establishments, institutions and other sources, similar in nature or composition and quantity to WEEE produced households, is assigned a waste code from Chapter 20 of the List of waste. WEEE that can be used for domestic and non-domestic purposes is treated as WEEE generated for domestic use produced by households and is assigned a waste code from Chapter 20 of the List of waste.

Codes for WEEE produced by households:

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

20 01 23*	discarded equipment containing chlorofluorocarbons	AH
20 01 35*	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components[4]	MH
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35.	MNH

Non-domestic WEEE is the equipment of a commercial/industrial type or size which is not usually present in the household. This waste is assigned a waste code from Chapter 16 of the List of waste:

16 02 09*	transformers and capacitors containing PCBs	MH
16 02 10*	discarded equipment containing or contaminated by PCBs other than those mentioned in 16 02 09*	MH
16 02 11*	discarded equipment containing chlorofluorocarbons, HCFC, HFC	MH
16 02 13*	discarded equipment containing hazardous components[5] other than those mentioned in 16 02 09 to 16 02 12	MH
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	MNH
16 02 15*	hazardous components removed from discarded equipment	MH
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15	MNH

To make it easier to determine when the waste code from Chapter 20 and that from Chapter 16 applies and what determines the hazardous properties of waste, several examples are given from the Waste Classification Technical Guidance of the Environment Agency of Great Britain (First edition, Version 1.2.GB)[6]. Example:

- A computer monitor or television or tea room fridge from commercial premises of a similar type to those used by households would be classified under sub-chapter 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 similar to domestic types and fall under 20 01 21*.
- A mirror hazard entry applies for the waste codes 20 01 35* and 16 02 13*. The presence or absence of a hazardous component in the EEE determines the code used. If no hazardous component is present in the WEEE, 20 01 36 or 16 02 14 would be appropriate. If hazardous substances exceed the cut-off values (upon assessment of hazardous properties according to Stage III of the Guide), the waste code 20 01 35* or 16 02 13* applies.
- Depending on the substance they contain, WEEE containing hazardous substances such as PCBs, chlorofluorocarbons, asbestos, etc., are assigned one of the following waste codes: 20 01 23*, 16 02 09* to 16 02 12*.

A hazardous component present in WEEE is either

- listed in the List of waste as hazardous or
- any other component that would possess a hazardous property, if assessed in isolation.

Hazardous components include hazardous accumulators/batteries; mercury switches; glass from cathode ray tubes and other activated glass; mercury-containing backlights, and other similar items. The most frequently detected hazardous components in WEEE are listed in 0, Table 3.

[4] Hazardous components from electrical and electronic equipment may include accumulators and batteries mentioned in 16 06 and marked as hazardous; glass from cathode ray tubes and other activated glass, etc.

[5] Hazardous components from electrical and electronic equipment may include accumulators and batteries mentioned in 16 06 and marked as hazardous; glass from cathode ray tubes and other activated glass etc.

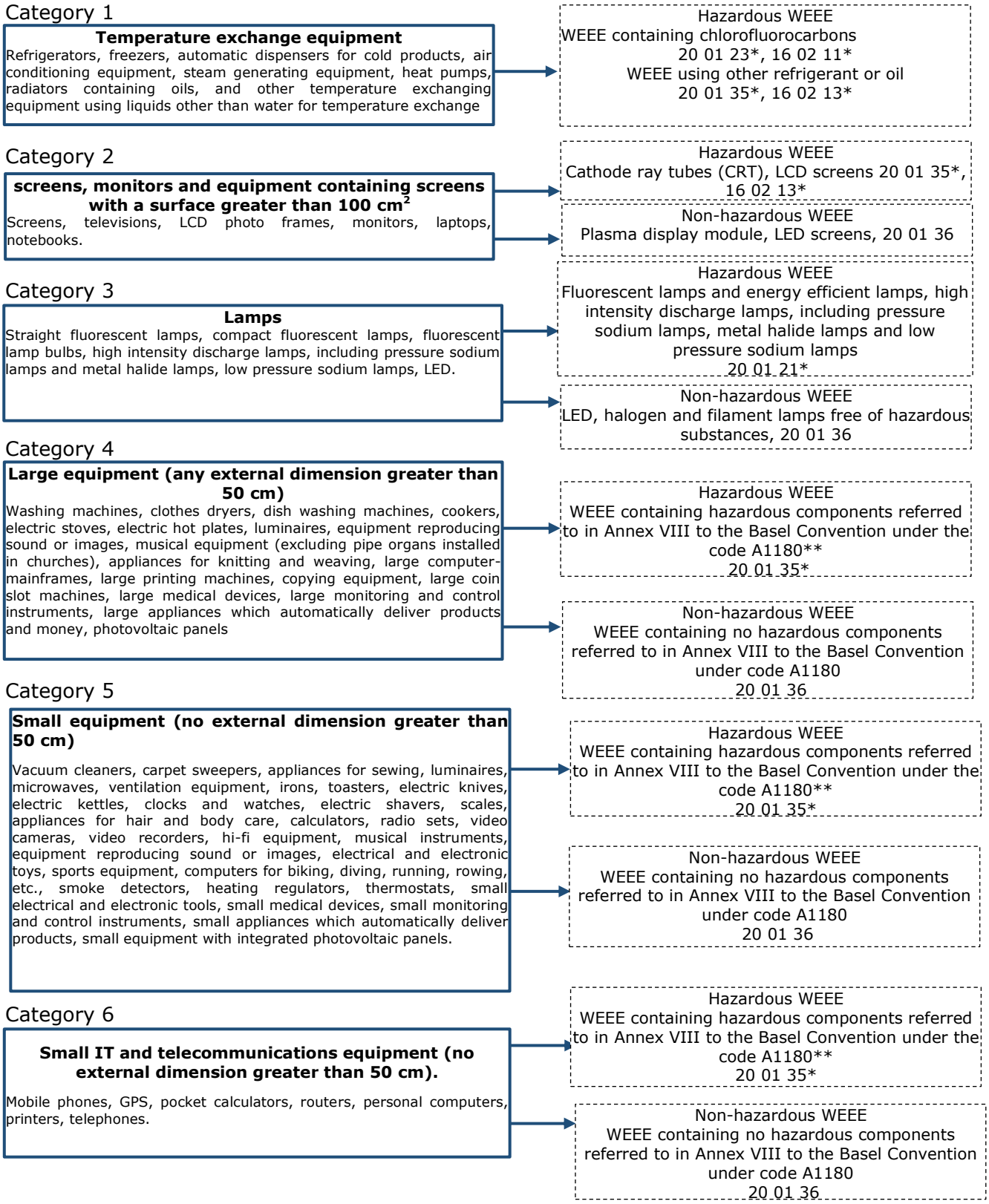
[6] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1021051/Waste_classification_technical_guidance_WM3.pdf.

In the light of the above and having analysed the practice of classifying WEEE in other foreign countries (see Annex 4-2 for details), the following has been established:

- some WEEE, both in Lithuania and other countries, is assigned the same hazardous WEEE code by type of EEE without any further assessment. The type of WEEE and the waste code assigned to it are shown in 0, Table 1;
- WEEE containing hazardous components referred to in Annex VIII to the Basel Convention under code A1180 and having the characteristics listed in Annex III to the Basel Convention[7] may be considered hazardous WEEE unless it is demonstrated that the WEEE does not contain these components.

Based on this information, it is recommended to use the algorithm presented in Fig. 8 for the classification of WEEE:

[7] A1180 – Waste electrical and electronic assemblies or scrap containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they possess any of the characteristics contained in Annex III.



Note: ** The assessment of hazardous properties must determine the hazardousness of WEEE due to the presence of hazardous components according to Stage III of the Guide or according to the information listed in Annex 4-2, Table 1. Please note that the threshold values based on hazard statement codes refer to the state of the waste as it is when the waste classification is undertaken (i.e. the state in which WEEE is usually transferred to the waste manager). For the case of EEE, this might imply that if whole appliances are to be classified, the weight of the appliance has to be considered as a basis for the applied concentration limits of a hazardous substance. If separated fractions have to be classified (e.g. after selective treatment), the weight of the separated fractions is to be considered as the basis for the applied concentration limits.

Fig. 8 Determination of the code under the List of waste for WEEE

Where WEEE is known to contain hazardous components, but there is no need to assess hazardous properties following Stage III of the Guide, or such assessment is complicated to conduct, and WEEE is not listed in Table 1 of Annex 4-2, such WEEE is classified as hazardous without assessment.

It should be noted that LED monitors are similar to LCD monitors because they use the same technology to produce them, making it difficult for waste managers to determine whether they are LCD or LED-type displays without dismantling them. One feature that distinguishes between LCD and LED displays is their thickness. LEDs used in LED displays are much smaller than fluorescent lamps used in LCDs. Therefore, LED displays are thinner than LCDs. On average, a LED display can be one third thinner than an LCD of the same size. This also affects the weight of the monitor. LED displays are lighter than LCDs. However, suppose it is impossible to distinguish between the type of display (LCD or LED). In that case, it should be assumed that this is an LCD mercury-containing backlight, as LCDs are currently more widespread.

In addition, it should be noted that the fractions resulting from the WEEE management process are subject to the waste codes of Chapter 16 and Chapter 20 of the List of waste. The following is a map of the EU Guidance containing the LoW codes for fractions resulting from the WEEE management process (see Fig. 9).

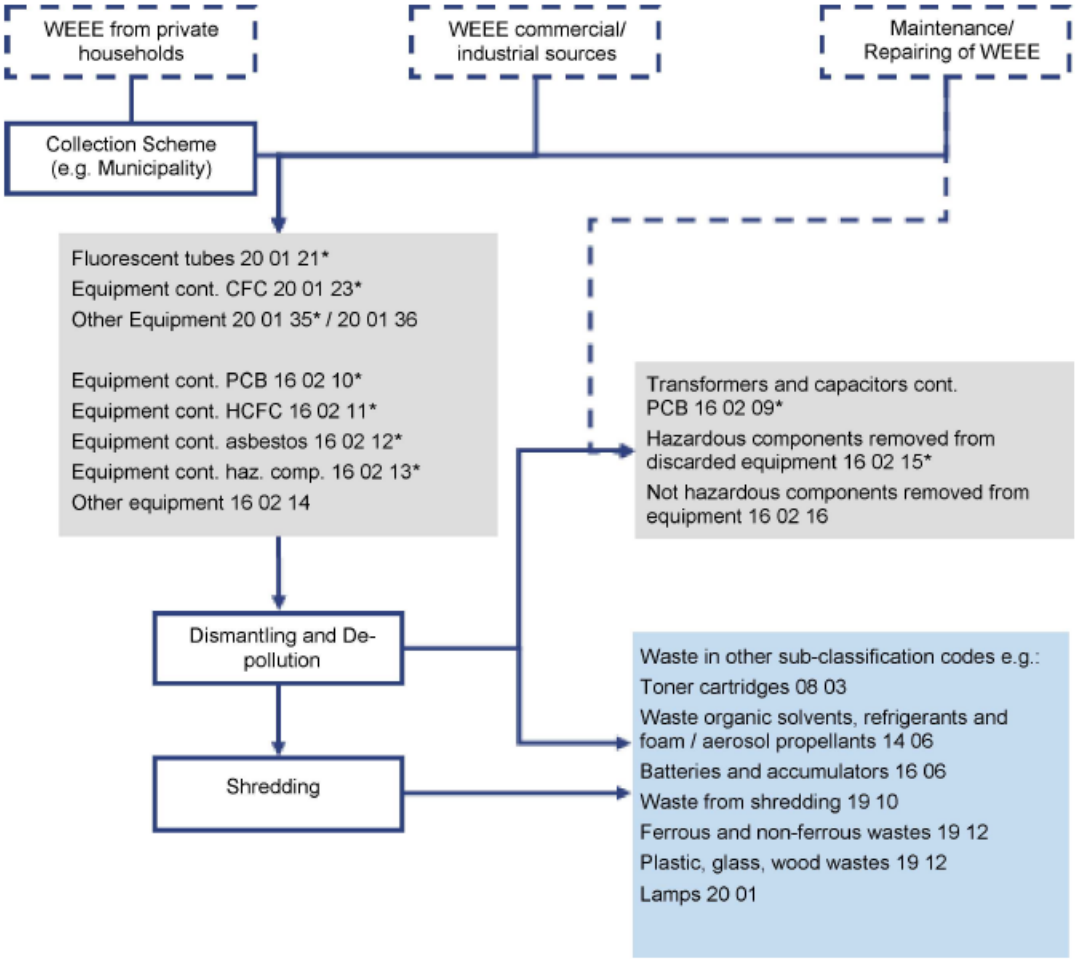


Fig. 9 List of waste entries related to the WEEE management.

2.4.3 ELVs

Following the Rules for the management of end-of-life vehicles approved by Order No 710 of the Minister for Environment of the Republic of Lithuania of 24 December 2003, as amended, an **end-of-life vehicle (ELV)** is a vehicle (except for an Oldsmobile as defined in Article 2(23) of the Law Road Safety of the Republic of Lithuania) classified as a vehicle of class M1 or N1 or a three-wheeled motor vehicle (except for three-wheeled motor vehicles with symmetrically arranged wheels), which meets the conditions laid down in Article 34[4](10) of Law on Waste Management of the Republic of Lithuania[8]; waste, as defined in the Law on Waste Management, also includes a vehicle of class M2, M3, N2, N3 or G, a two-wheeled vehicle of category L, a three-wheeled motor vehicle with symmetrically arranged wheels, a trailer of category O, a tractor, a farm machine, a self-propelled machine, and a trailer or semi-trailer of a tractor, a self-propelled machine and a farm machine.

If the ELV meets the above definition, it is assigned one of the codes below.

16 01 04*	End-of-life vehicles	AH
16 01 06	End-of-life vehicles containing neither liquids nor other hazardous components	MNH

Entries 16 01 04* and 16 01 06 are clearly linked but are not mirror entries. Suppose the ELV is complete or contains residual hazardous substances (e.g. petrol, diesel, brake fluid or oil, etc.) or other hazardous parts (e.g. batteries or mercury-containing switches). In that case, the proper waste code is 16 01 04*.

If the ELV does not contain hazardous liquids or hazardous parts, it is assigned the waste code 16 01 06.

Information on when the ELV is classified as hazardous waste and on the management processes carried out in the ELV management facilities is described in 0. Depending on the treatment steps, different entries of the List of waste (not from sub-chapter 16 01) come into play for fractions originally stemming from ELV.

2.4.4 Wood waste

Wood waste may or may not be hazardous depending on which materials or coatings were used for wood treatment.

There are different practices in foreign countries for the classification of wood waste (for more details, see 0); however, there is a consensus that railway sleepers, power and communication line posts, former farm fences, waste wood from cooling towers, etc. which were or could be treated with creosote, arsenic salts (chromated copper arsenate (CCA), etc.) or kyanised (impregnated with a solution of mercuric chloride (II), are considered hazardous. Hazardous wood waste also includes munition (ammunition and explosives) boxes, cable drums made of solid wood (manufactured before 1989), wooden trays treated with methyl bromide, wooden floors, walls, beams, etc. of industrial installations, mechanical workshops, garages, etc., and wooden packaging that may be contaminated by mineral oils and other chemical substances.

Wood waste coated with other coatings or materials is classified as non-hazardous, but not all of it is suitable for recycling or production of solid biofuels. Greater focus should be on the correct management of wood treated with impregnating agents, as foreign studies show that wood was used for construction between 1950 and 2007 and was also impregnated

[8] Law on Waste Management, Article 34[4] (10): A vehicle (with the exception of an Oldsmobile as defined in Article 2(23) of the Law Road Safety of the Republic of Lithuania) is recognised as an end-of-life vehicle, i.e. a product waste, and must be managed in accordance with the procedure laid down in Article 4 of this Law, provided it meets at least one of the following conditions:
(1) the certificate of destruction of the end-of-life vehicle issued to the owner of the vehicle;
(2) the vehicle is being dismantled or is dismantled so that its use is not possible for the intended purpose.

with materials containing heavy metals and halogenated organic compounds and other harmful substances. Similar materials are likely to have been used to impregnate the construction timber used in our country. According to the Quality requirements for solid biofuels approved by Order No 1-310 of the Minister for Energy of the Republic of Lithuania of 6 December 2017, only mechanically treated or chemically processed old wood that does not contain heavy metals or halogenated organic compounds may be used for the production of solid biofuels. Wood waste treated with wood preservatives or coated with primer or paint, which may result in contamination by halogenated organic compounds or heavy metals and which in many cases enters the waste stream of construction and demolition waste, must be incinerated in waste incineration or co-incineration plants.

The following algorithm is recommended for the classification of coated, varnished or otherwise chemically treated wood waste, taking into account the experience of other countries and their studies:

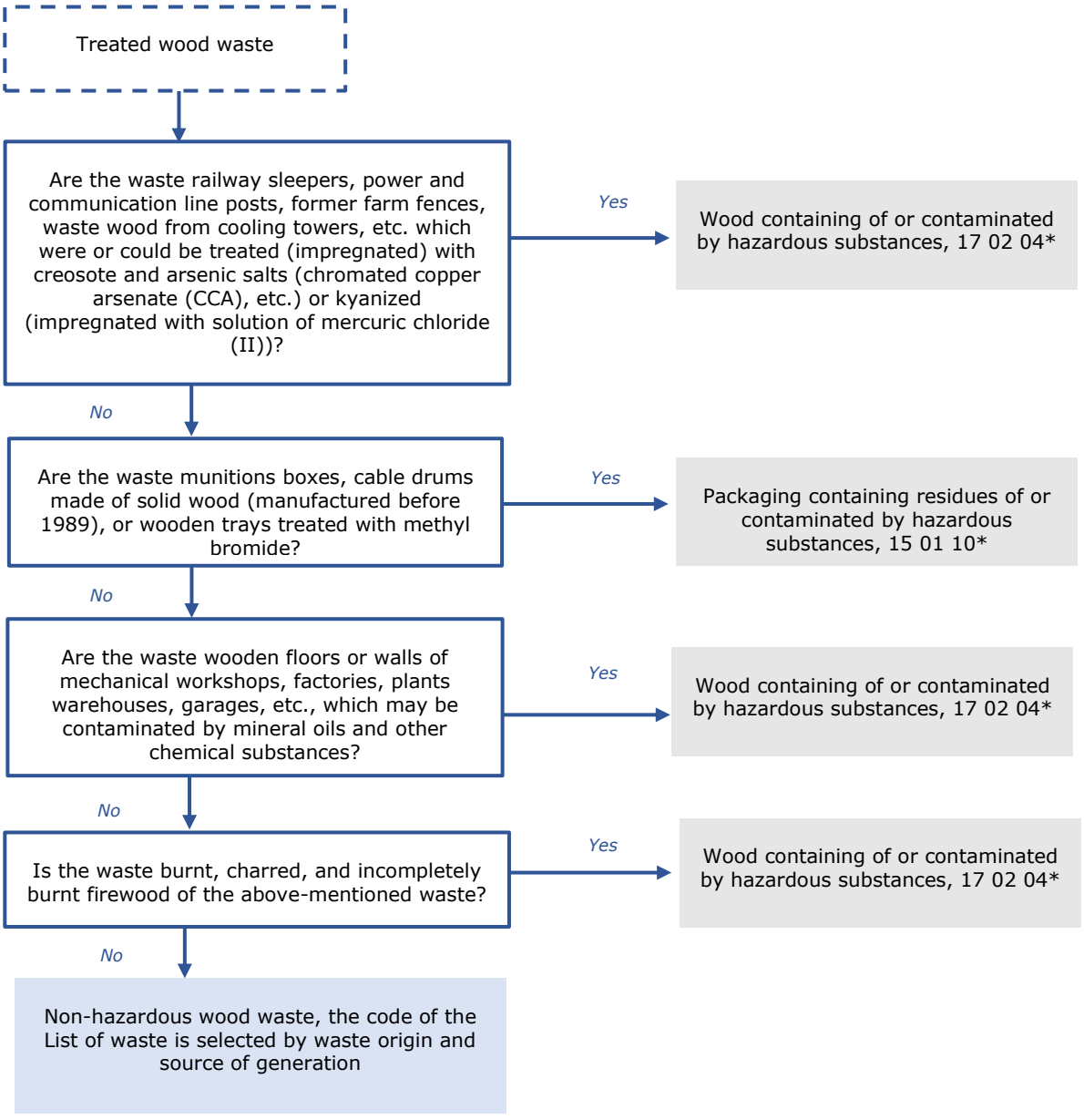


Fig. 10 Classification algorithm for wood waste

2.4.5 Grinding sludge

Waste from grinding or polishing bodies and grinding materials used on metal, plastic and glass surfaces are generated during grinding/polishing operations.

According to the List of waste, the following waste codes may be assigned to spent grinding bodies and grinding materials, depending on the production process:

10	**WASTES FROM THERMAL PROCESSES**	
10 11	**wastes from manufacture of glass and glass products**	
10 11 13*	glass-polishing and -grinding sludge containing hazardous substances	MH
10 11 14	glass-polishing and -grinding sludge other than those mentioned in 10 11 13	MNH
12	**WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS**	
12 01	**wastes from shaping and physical and mechanical surface treatment of metals and plastics**	
12 01 20*	spent grinding bodies and grinding materials containing hazardous substances	MH
12 01 21	spent grinding bodies and grinding materials other than those mentioned in 12 01 20	MNH

Depending on the composition of equipment and materials used for grinding metal, plastic or glass surfaces, hazardous or non-hazardous waste of spent grinding bodies and grinding materials may occur.

The assessment of the grinding process has shown that special equipment and materials known as abrasives (ceramics such as corund, aluminium oxide, etc.) are used for grinding. Abrasive particles are glued to abrasive discs, strips, paper, etc. Due to the high amount of heat emitted during grinding resulting from very high friction, a coolant is often used to prevent the thermal energy emitted from affecting or deforming the grinding product.

Pure machining oils (on a mineral oil, synthetic and native basis) and water-mixed systems (emulsions, solutions) are used as coolants. A coolant can consist of up to 30 components: base oils and additives (e.g. additives containing sulphur and phosphorus, chlorinated paraffin, biocides, salts, etc.)[9].

If the permitted wear rate is exceeded, grinding discs, strips, paper, etc. must be replaced, i.e. waste from spent grinding bodies and grinding materials are produced. This includes grinding abrasives, known as shavings. As grinding abrasive is a porous material, it may be contaminated with coolant and its components. Therefore, a refrigerant containing oil or other hazardous substances may be classified as hazardous waste by assigning the waste code 12 01 20*.

Glass-polishing and -grinding sludges are produced during the mechanical processing of glass products. If necessary, they are separated from the grinding water in the circuit with the addition of flocculants. Separated sludge may contain the following hazardous substances originating from raw materials used in glass-polishing and -grinding or coolants and lubricants used: metals and metal compounds or hydrocarbons, which render waste hazardous[10].

In accordance with the above, we recommend that the following algorithm be used for classifying spent grinding bodies and grinding materials used on metal, plastic or glass surfaces:

[9] https://um.baden-wuerttemberg.de/fileadmin/redaktion/m-um/intern/Dateien/Dokumente/3_Umwelt/Abfall-_und_Kreislaufwirtschaft/Rechtliche_Grundlagen/Europ._Abfallverzeichnis/Band_B.pdf.

[10] https://www.abfallbewertung.org/ipa/repgen.php?report=ipa&char_id=1011_Glas&lang_id=de&avv=&synon=&kapitel=7&gtactive=yes.

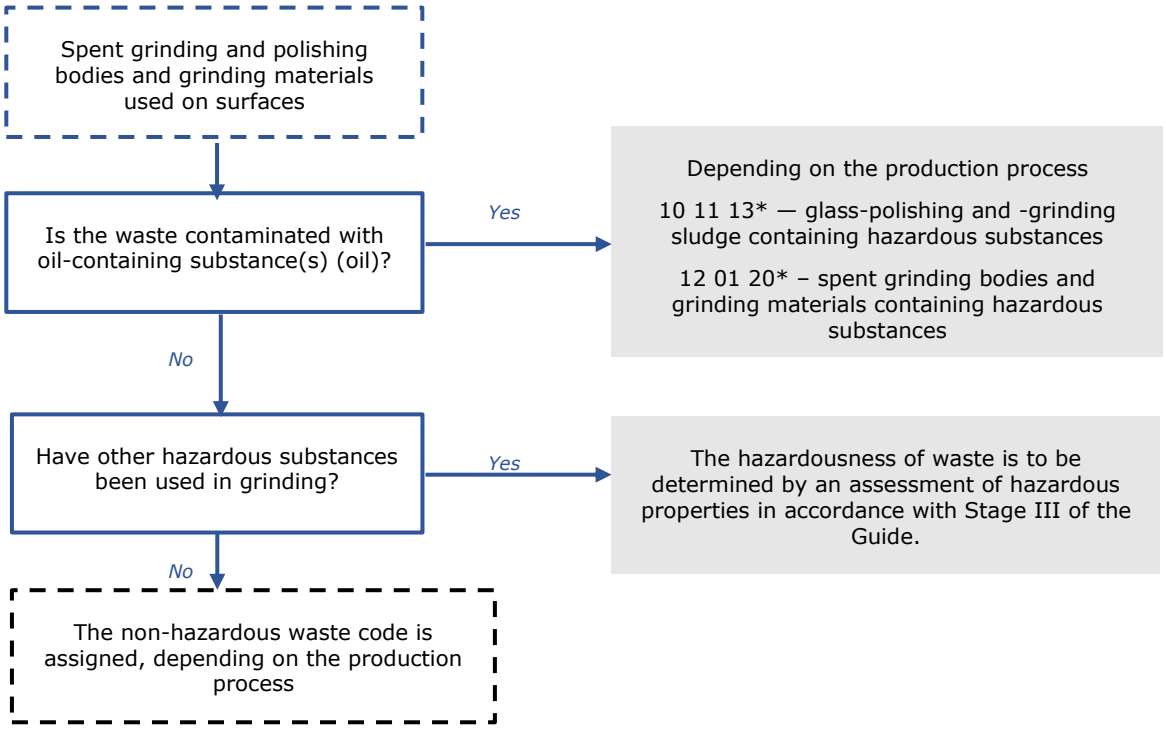


Fig. 11 Classification algorithm for grinding and polishing sludge

2.4.6 Identification of waste filter materials and wiping cloths

Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, and protective clothing is mainly generated in industrial plants, laboratories, workshops and automotive service workshops, as well as in the event of equipment failure or accidents.

According to the List of waste, the following waste codes apply:

15 02 02*	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances	MH
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	MNH

According to the practice of Great Britain, Denmark, Sweden and Norway, if absorbents, filter materials, wiping cloths and protective clothing are contaminated with oil, their waste is classified as hazardous waste. According to German practice[11], the primary substances making absorbents, filter materials, wiping cloths, and protective clothing to be classified as hazardous waste are petroleum products (oil, organic solvents), metal compounds (metal oxides, metal sulphides, metal chromates), acids, alkalis, salts, depending on their concentrations in the waste.

As regards contaminated wiping cloths and filters generated from paint shops in Germany, the following practices apply:

11

https://www.abfallbewertung.org/ipa/repgen.php?report=ipa&char_id=1502_Filte&lang_id=de&avv=&synon=&kapitel=7&gtactive=yes.

In the metalworking industry, in automotive service workshops, workshops where motor vehicles, construction machinery and other machines are maintained and repaired, the primary substance that contaminates wiping cloths is oil (also cooling oil and hydraulic oil; therefore, the waste of wiping cloths typically generated in these industries or workplaces are classified under the waste code 15 02 02*.

The absorbent and filter materials, wiping cloths and protective clothing produced in chemical/pharmaceutical plants may contain residues of various chemical agents. It is therefore essential to know which substances are used when classifying and assessing the waste.

In the light of the above, we recommend using the following algorithm to classify waste absorbents, filter materials, wiping cloths and protective clothing:

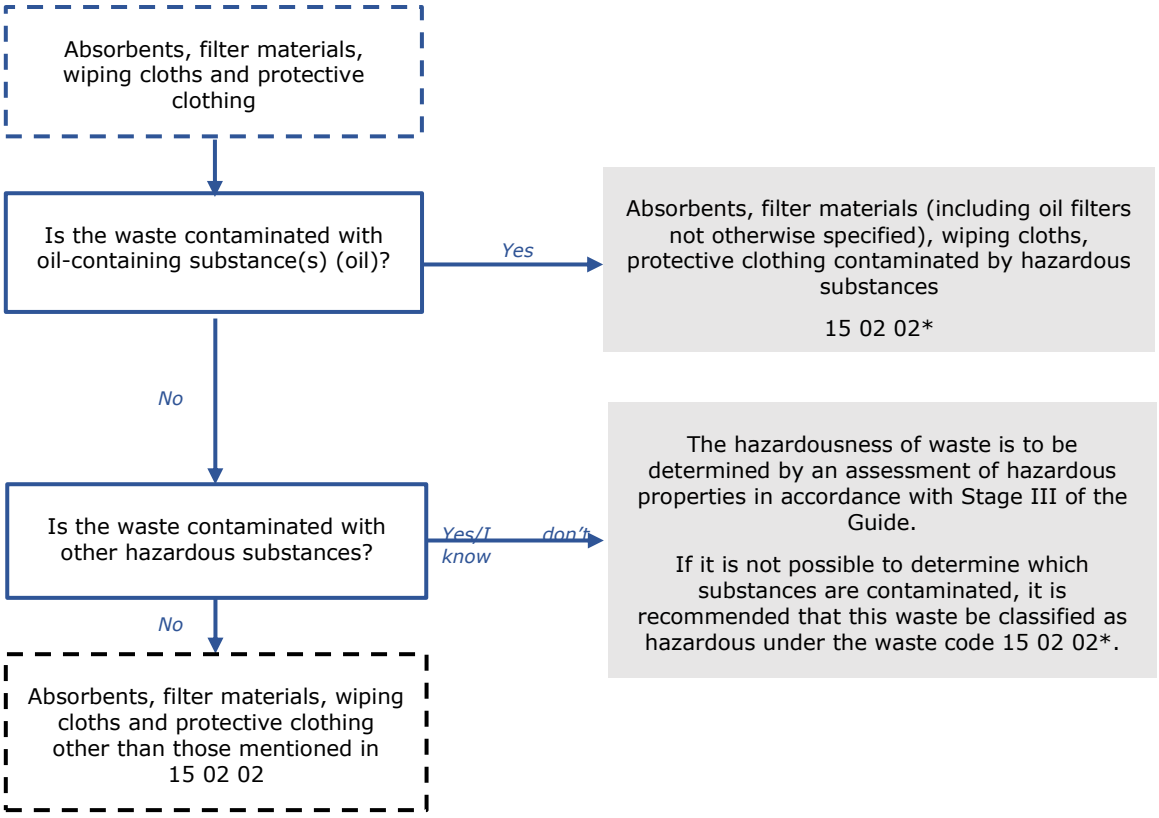


Fig. 12 Classification algorithm for waste filter materials and wiping cloths

2.4.7 Identification of rubber waste

Rubber waste is typically end-of-life products related to tyres and other rubber-based products (from toys to gaskets used in installations, etc.).

According to the List of waste, rubber waste can be identified under the following codes:

16 01 03	end-of-life tyres	ANH
16 03 05*	organic wastes containing hazardous substances	MH
16 03 06	organic wastes other than those mentioned in 16 03 05	MNH
19 12 04	plastic and rubber	AN

Most rubber wastes are assigned absolutely non-hazardous entries. Waste code 16 03 06 is an MNH entry to the MH entry 16 03 05* (organic wastes containing hazardous substances) under chapter 16 (wastes not otherwise specified in the List) sub-chapter 16 03 (off-specification batches and unused products). This hazardous entry can be used for unused rubber products with oils or solvents or for contaminated off-specification rubber batches, e.g. with oils or solvents. The algorithm specified in Chapter 2.4.5 may also be used to classify grinding sludge from rubber products.

In the light of the above, the following algorithm is recommended for the classification of end-of-life rubber products (e.g. broken/damaged products):

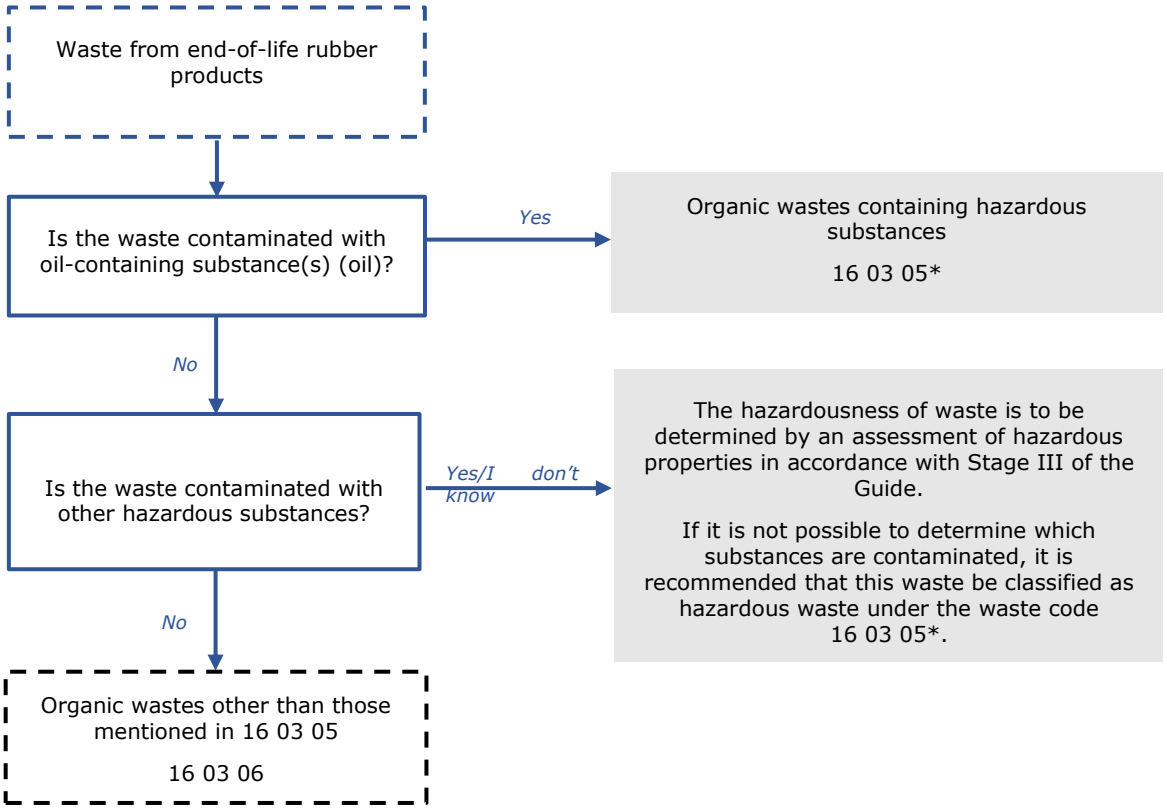


Fig. 13 Classification algorithm for rubber waste

2.4.8 Identification of dental waste

Companies providing dental services may generate several types of waste:

- Wastes specific to these activities only (amalgam waste from dental care);
- Medical waste specific to other health care institutions;
- Packaging waste;
- WEEE;
- Waste not directly related to the services provided (waste similar to waste produced by households).

Detailed information on the identification of packaging waste, WEEE, and hazardous waste produced by households is provided in the relevant chapters of this Guide. Lithuanian Hygiene Standard HN 66:2013 'Safety Requirements for the Management of Medical Waste' applies to the classification and management of medical waste in Lithuania. This legal act contains the following concept of medical waste: **medical waste means waste from human health care (treatment, diagnostics, rehabilitation, nursing, disease prevention, forensic examination) and related research**.

In the light of the above, the following algorithm is recommended for the classification of waste generated from dental services:

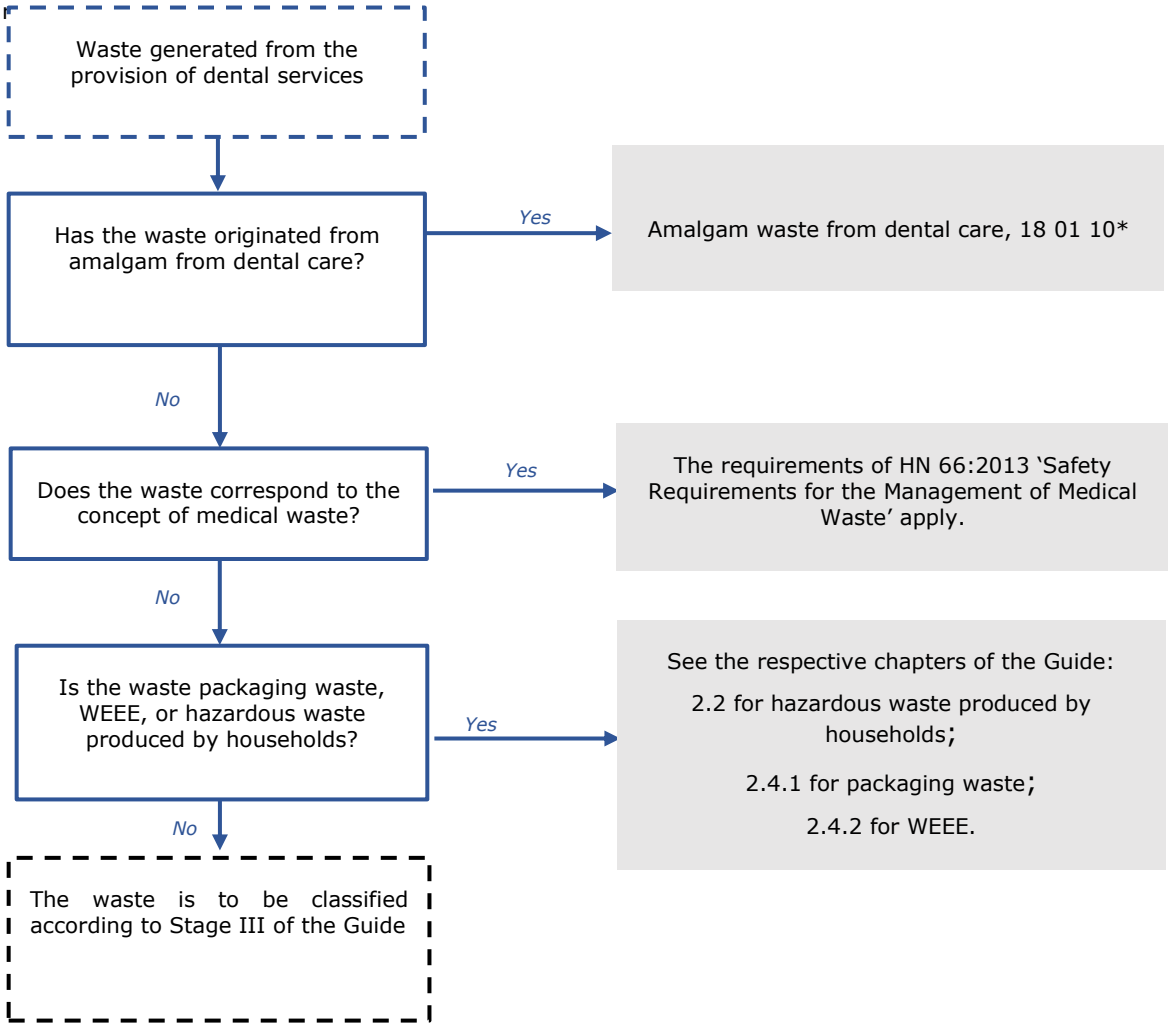


Fig. 14 Classification algorithm for dental waste

2.5 Stage III — Determining the hazardousness of waste according to the hazardous properties

Whether or not waste is hazardous depends primarily on its composition. According to the provisions of the Waste Management Rules, waste must be classified as hazardous if it contains specific quantities of POPs[12] or hazardous substances and thus has hazardous properties. At the same time, the following steps must be taken to assess whether waste is to be classified as hazardous properly (see Fig. 15):

- Step 1 Determination of the composition of waste
- Step 2 Assessment of whether waste contains POPs and must therefore be identified as hazardous
- Step 3 Does the waste contain hazardous substances?
- Step 4 Assessment of the hazardousness of waste according to the hazardous properties of the substances contained therein

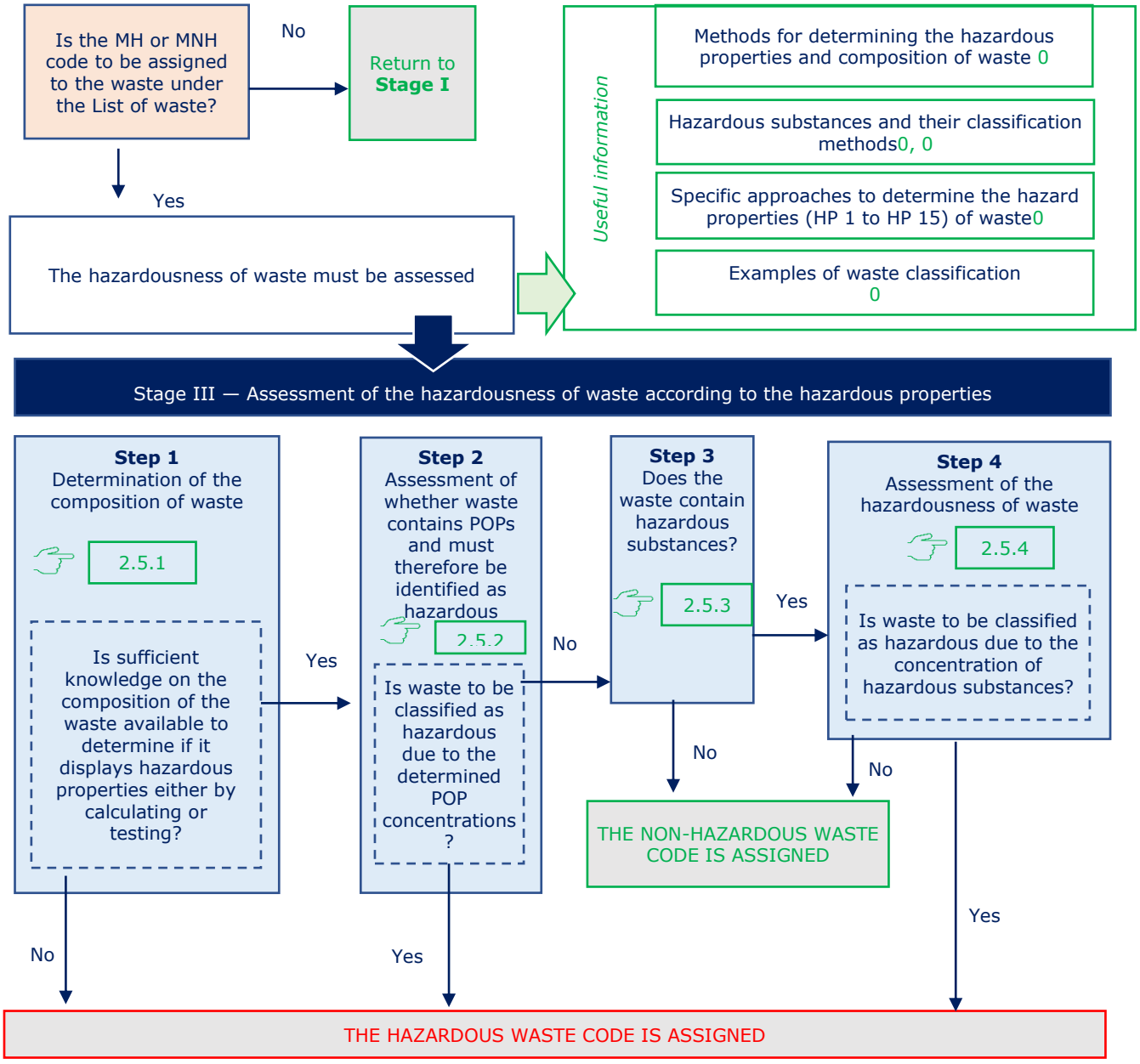


Fig. 15 Algorithm for the steps in Stage III

[12] For the purposes of this sub-chapter, the abbreviation 'POPs' covers only the POPs listed in point 2.2.3 of Annex 1 to the Waste Management Rules.

2.5.1 Step 1 of Stage III — Determination of the composition of waste

Obtaining sufficient information about the composition of the waste, in particular the presence and content of hazardous substances in the waste, to determine whether the waste should be classified as hazardous is an essential step in waste classification. Waste may be hazardous because it contains POPs or hazardous substances to the extent that it displays one or several hazardous properties. Therefore, this step aims to obtain data on the composition of waste, which would enable further steps to be taken to identify the waste and to select a method for assessing the hazardous properties of the waste, i.e. to assess whether the information on the composition of the waste, the content of certain substances and the hazardous properties contained in the available documents are sufficient or whether tests on the composition and/or properties of the waste will be necessary for the determination of the hazardous properties of the waste.

There are several ways to gather information on the relevant components of the waste, the hazardous substances present and potential hazardous properties displayed:

- information on the 'waste-generating' manufacturing/technological process and its input substances and intermediates, including expert judgements (useful sources may be BREF reports, industrial process handbooks, process descriptions and lists of input materials provided by the producer, etc.);
- information from the original producer of the substance or object before it became waste, e.g. Safety Data Sheets (SDS), the product label or product fiches.

Depending on the availability, quality and adequacy of the information on the waste composition, the process of identifying the waste may end at this step. In the absence of sufficient information on the waste composition, such waste must be assigned the hazardous waste code (see Fig. 16).

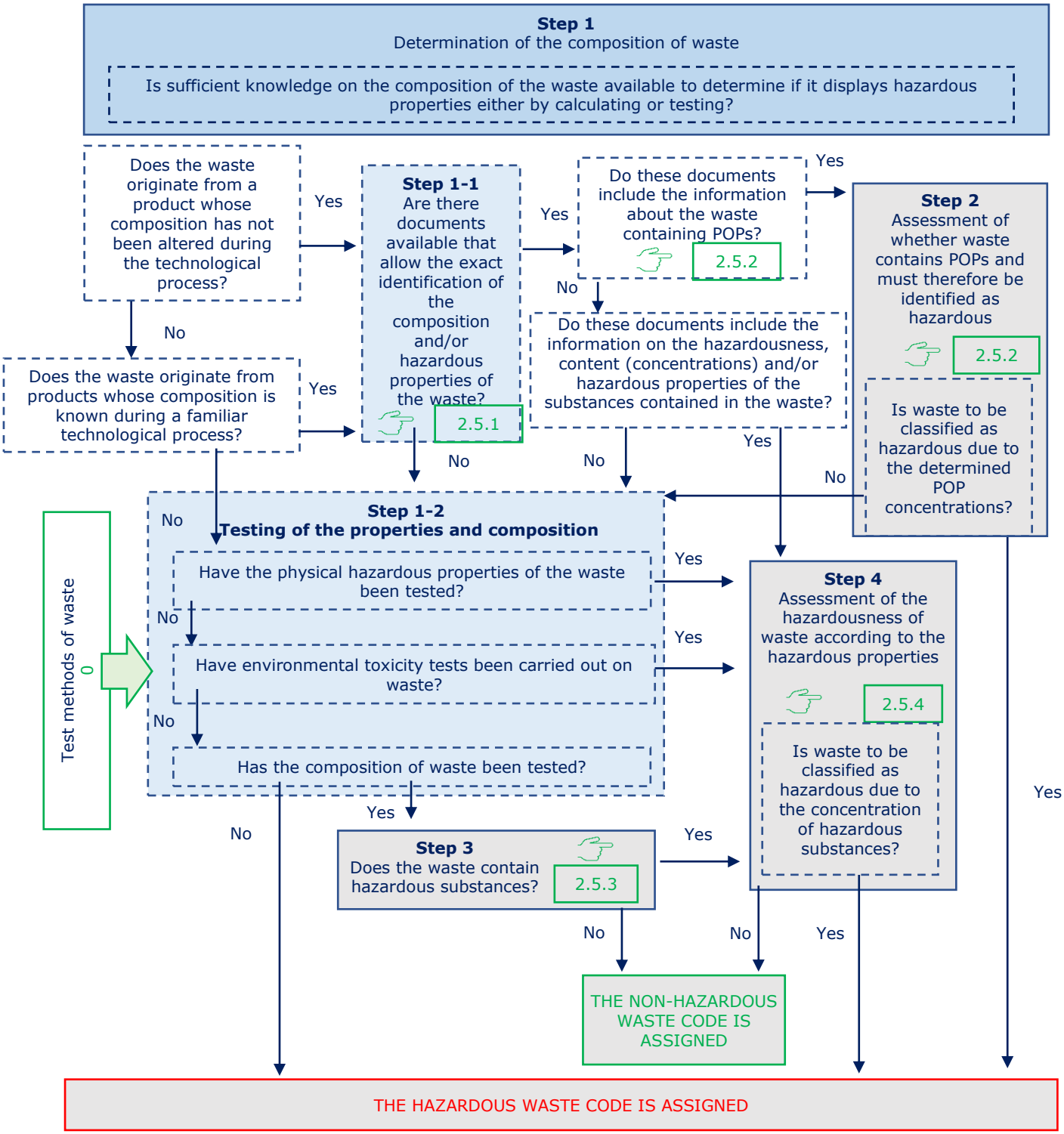


Fig. 16 Algorithm for Step 1 in Stage III and its interfaces with other steps of the same stage

1-1 žingsnis Determining the hazardousness of waste according to documents

This step is only performed where:

- the substance originating the waste is evident, and it is known that this substance has not changed during the technological process; or
- there is precise knowledge of the technological process, and the composition of the products originating the waste after the technological process can be accurately determined from the available documentation.

In other cases, the information in the documentation may be used as a secondary rather than a primary source for the subsequent steps.

SDS is one of the most commonly used documents for obtaining information on the hazardous properties of substances/mixtures.

For substances and mixtures that are classified as hazardous according to CLP, as also for non-classified mixtures containing hazardous substances above certain thresholds, an SDS need to be provided by the supplier. SDS have to fulfil specific requirements and comply with a format defined in Article 31 of the REACH Regulation and must include information:

- on the classification of the substance or mixture following Title II of CLP Regulation (section 2 of the SDS); this may be a harmonised classification or a self-classification (see Chapter 2.5.3);
- on the composition / the ingredients (section 3 of the SDS);
- on 'disposal considerations' (section 13 of the SDS);
- on exposure scenarios (in the Annex).

With this information available, the SDS can be a valuable tool for further assessment steps that must be carried out during classification according to the List of waste once a particular product has become waste.

It should be noted that if a waste product is a mixture of two or more substances (e.g. a can of varnish), the classification information for mixtures is an essential reference source. Secondly, it is necessary to use the classification of the individual substances of the product rather than the general chemical classification of the mixture. Section 3 of an SDS for mixtures provides the classifications according to CLP for the individual hazardous constituents of the mixture. This information may be validated or complemented by searching the classification and labelling (C&L) inventory[13].

Note that for substances and mixtures for which an SDS is not mandatory and also in the case of articles, voluntary product information sheets may be available that are not conforming to SDS but can provide information on the composition and recommended disposal practices.

An assessment of information other than that specified in the SDS is recommended where either:

- the information provided may be out of date (a product is discarded considerable time after it was last supplied);
- there is any reason to believe the information is incomplete, inadequate, or inaccurate.
- information on the waste-generating process suggests that additional substances (e.g. contaminants) may be present in the waste which SDS does not cover.

Even if the available documentation does not provide sufficient information on the composition of the waste, Steps 2, 3, and 4 of Stage III may be carried out (the information provided in the documentation does not allow the number of certain substances in the waste to be determined or precisely identified), it may be helpful in Steps 1 to 2 of Stage III (i.e. determining which tests should be carried out first — on composition or hazardous properties).

[13]According to point 2.2 of Annex 2 to the EU Guidance.

1-2 žingsnis **Assessment of the hazardousness of waste by testing the hazardous properties and/or carrying out tests to determine the chemical composition of waste**

This step is mandatory to justify that the waste is non-hazardous and that documented evidence is not available to support the composition of the waste.

As waste composition testing is a complex and knowledge-intensive process, it is recommended that, in some instances, before testing, it is first assessed whether the waste is likely to exhibit physical and/or biological properties HP 1, HP 2, HP 3, HP 12 and HP 14. For this purpose, as indicated above, the data collected in Step 1-1 of Stage III may be used. If there are reasonable grounds for suspecting that the waste may have one or more of the above-listed properties, targeted tests for these properties may be performed first. Only after obtaining negative test results (i.e. the tests do not reveal waste having properties HP 1, HP 2, HP 3, HP 12, and HP 14) it should proceed with the assessment for determining whether the waste has the properties HP 4, HP 5, HP 6, HP 7, HP 8, HP 10, HP 11, and HP 13 (i.e. carry out tests of the composition of the waste and to evaluate the results following the provisions of Annex III to the WFD, including calculation, where appropriate).

The information on laboratory testing techniques is available in 0, and the information on specific methods for determining hazardous properties of waste (HP 1 to HP 15) following Annex 3 to the EU Guidance is available in 0.

2.5.2 Step 2 of Stage III — Assessment of whether waste contains POPs and must therefore be identified as hazardous

Suppose the waste contains one or more of the 15 POPs referred to in point 2.2.3 of Annex 1 to the Waste Management Rules. In that case, the tests are performed to determine whether their concentration exceeds the concentration limits for the substances referred to in Annex IV to the POP Regulation. The pollutants listed in Annex 4 to the POP Regulation and their concentration limits are in 0, Table 1.

If the concentration exceeds the cut-off value, the waste is classified as hazardous and must be managed under the specific rules in the POP Regulation. For more information on how to assess whether the waste is to be classified as hazardous due to the presence of POPs, see 0

Waste may also contain other POPs listed in Annex IV to the POP Regulation; however, these pollutants do not automatically render the waste hazardous even if their concentration exceeds the respective cut-off values referred to in Annex IV to the POP Regulation. The classification of such waste depends on the hazard classification of the particular chemical substances (see 0, Table 2); besides, it should be assessed for at least one of the properties HP 1 to HP 15 (see Chapter 2.5.4).

It should be noted that certain H-codes (H350, 360 and 361) are sometimes supplemented by alphabetical codes (see 0, Part 3). These additional letters do not affect the classification of hazardous waste. **It should be noted that the register of substances in REACH does not indicate whether a given substance falls within the scope of the POP Regulation. Therefore, it is imperative to check separately whether the waste contains relevant POP.**

2.5.3 Step 3 of Stage III — Does the waste contain hazardous substances, and what are their hazardous properties?

Data sources and information basis on hazardous substances

Once it is analysed which substances are present within the waste in question, it needs to be analysed if the identified substances are hazardous and collect information on their hazardousness. The primary data sources are displayed in Fig. 17 .

Since the concentration of substances contained in waste is most often be determined at the element level, which is rarely the case in practice (e.g. heavy metals are mainly contained in chemical compounds), it is recommended to use data on hazard statements for the so-called 'worst case' compounds rather than for elements to assess the hazardousness of waste (see Annex 7-3 to the Guide for possible 'worst case' compounds, which also contains information on hazard statements for those compounds).

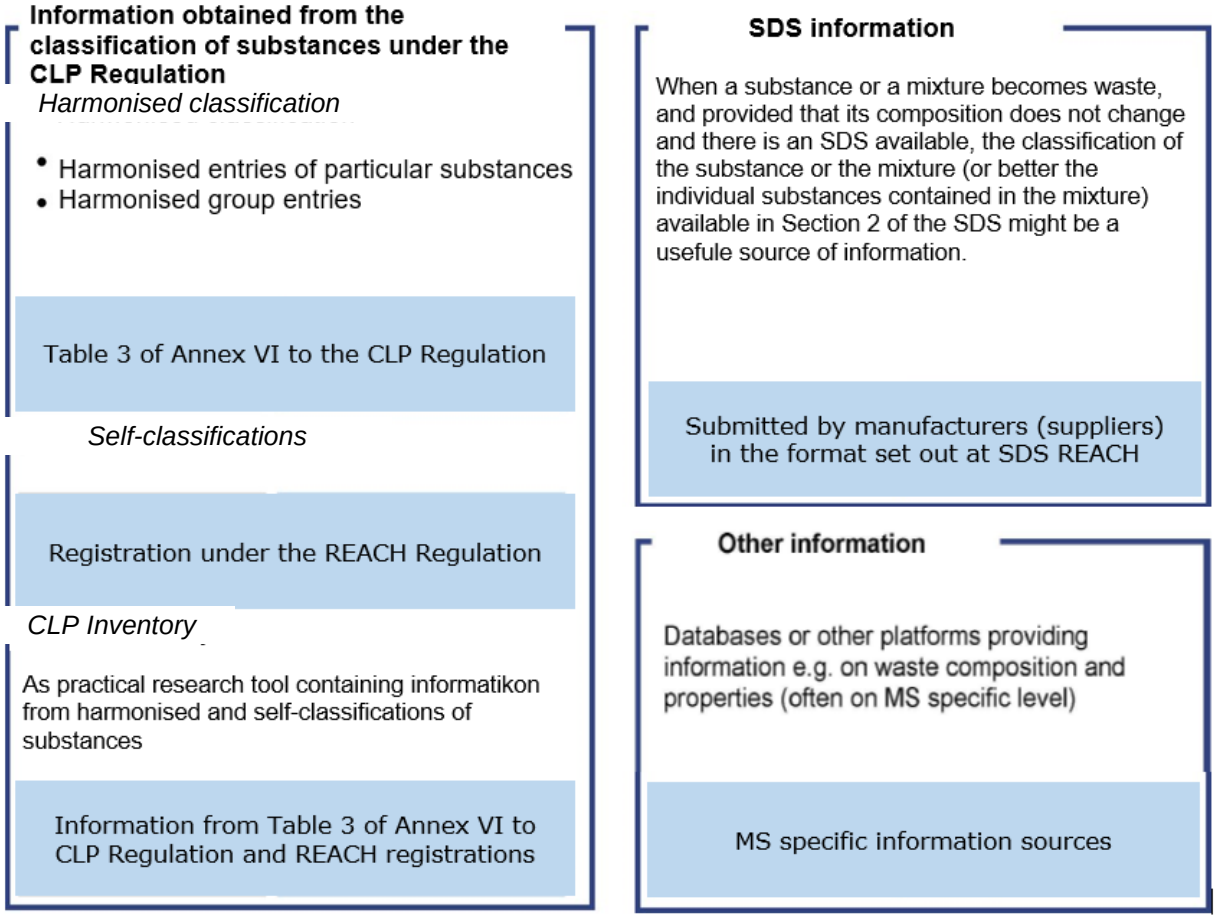


Fig. 17 Data sources for the information on hazardous substances

Classification of substances as hazardous according to the CLP Regulation

The CLP Regulation provides the criteria to assess the physical, human health and environmental hazards of substances. **A chemical substance is classified as hazardous** if it meets the criteria for one or more of the hazard classes set out in the CLP Regulation. The hazard profile of the chemical substance is expressed in hazard statements (e.g. H315: Causes skin irritation). Manufacturers and importers of chemical substances must classify chemical substances primarily based on the harmonised classification for that chemical substance following the CLP Regulation or, if no harmonised classification is established, based on self-classification. Information on harmonised classification and self-classification of chemical substances, including assigned hazard statements, is included in the CLP inventory.

Harmonised classification of substances

Some substances are 'officially' classified using a formal decision at the EU level. These are referred to as 'harmonised classifications' and listed in Table 3 of Part 3 of Annex VI to the CLP Regulation.

A harmonised classification provides information on the chemical classification and labelling of a substance:

Hazard statement code	The code assigned to the hazard class and category. For example, a carcinogen could be 'H350' or 'H351'.
Hazard class	The nature of the hazard. For example, a carcinogenic is 'Carc.' hazard category
Hazard category	A sub-category of the hazard class that describes the severity of the hazard. For example, a carcinogen could be '1A', '1B' or '2'.

The hazard classes and categories presented in Table 3 of Part 3 of Annex VI to the CLP Regulation take legal precedence over all other sources of information on those hazard classes and categories, and they must be used for classification. Note that a harmonised classification may be incomplete where it only covers the hazard classes and categories listed.

Table 3 of Part 3 of Annex VI to the CLP Regulation is regularly updated by adaptations to technical progress. It contains two types of harmonised classifications:

–harmonised classifications for specific substances (such as, e.g. 'lead chromate'), and

–harmonised group classifications (such as, e.g. 'lead compounds').

Harmonised classifications can be found in the Classification and Labelling (C&L) Inventory maintained by the European Chemical Agency (ECHA); the information on the harmonised classification of the specific substance is also provided in the Classification and Labelling Inventory. If a harmonised classification for a specific substance exists, this classification should prevail over the harmonised group classifications.

Self-classification

Manufacturers, importers and downstream users of substances are obliged to perform a self-classification under the CLP Regulation (as required by CLP and in the framework of registration of substances under REACH), determined through the application of the CLP classification criteria.

There can be multiple classifications for the same substance due to:

–the different composition, form or physical state of the substance placed on the market;

–the manufacturer or producer identifying insufficient information to assess that hazard class or category (which they will report as 'data lacking', 'inconclusive', or 'conclusive but not sufficient for classification);

–the manufacturer, importer or downstream user has access to or has generated different or additional data.

Self-classifications may be used to identify what hazard classes and categories have already been identified by other notifiers going beyond the harmonised classification and should serve as general information basis.

It is recommended to check those self-classifications showing the highest number of notifiers. There are ongoing efforts to get notifiers to agree on self-classifications. However, suppose no harmonised classification is available, and only self-classifications for the substances in question are available. In that case, the waste holder should work to assign a classification based on the published self-classifications in the C&L Inventory and take particular notice of the classification transmitted via the SDS of the relevant substance or mixture to the operator generating the waste.

CLP Inventory as a source of information

The C&L Inventory managed by the ECHA can be used to search for the classification of substances or groups of substances which are relevant in the context of waste classification (and, if applicable, for verification of that information). This Inventory allows for easy research for harmonised classifications of substances or groups of substances as it contains information from Table 3 of Part 3 of Annex VI to the CLP Regulation. It also contains self-

classifications provided in the registration of substances under REACH and notifications of unregistered substances (e.g. importers who are not obliged to register). When no harmonised classification and more than one self-classification is reported in the C&L Inventory, the ECHA database on registered substances can help support information obtained from the C&L Inventory.

However, it should be noted that the C&L Inventory is subject to regular changes in content. The content should be considered cautiously (e.g. the convergence of classifications per substance is a steady work in progress in the C&L Inventory).0

The information about how to find information in the CLP inventory is provided in 0.

The information on the hazardous properties of the substances most commonly found in waste is provided in 0.

SDS (safety data sheet) as a source of information

For substances and mixtures that are classified as hazardous according to CLP, as also for non-classified mixtures containing hazardous substances above certain thresholds, an SDS need to be provided by the supplier. The SDS have to fulfil specific requirements and must include helpful information for the assessment of the hazardousness of the waste:

- on the classification of the substance or mixture under CLP Regulation (section 2 of the SDS); this may be a harmonised classification or a self-classification (see above);
- on the composition / the ingredients (section 3 of the SDS);
- on waste management (section 13 of the SDS);

With this information available, the SDS can be a valuable tool for further assessment steps that must be carried out during classification according to the List of waste once a particular product has become waste.

Note that if the product becoming waste is a mixture of two or more substances (e.g. a pot of varnish), the classification information for mixtures is a valuable source of information in general. Secondly, the classifications of **the individual component substances must be used rather than the overall chemical classification of the mixture**. Section 3 of an SDS for mixtures provides the classifications according to CLP for the individual hazardous constituents of the mixture. This information may be validated or complemented using a search in CLP Inventory.

Additional checks on the information contained in the SDS are recommended where either:

- the information provided may be out of date (a product is discarded considerable time after it was last supplied);
- there is any reason to believe the information is incomplete, inadequate, or inaccurate.
- information on the waste-generating process suggests that additional substances (e.g. contaminants) may be present in the waste which SDS does not cover.

Note that for substances and mixtures for which an SDS is not mandatory, as well as in the case of articles, voluntary product information sheets may be available that are not conforming to SDS but can provide information on the composition and recommended disposal practices.

Other data sources:

Information on the hazardousness of the substances contained in the waste can also be found in other sources of information, e.g. data on the hazard statements of polycyclic

hydrocarbons can be found in the periodically updated CONCAWE reports (Hazard Classification and Labelling of Petroleum Substances in the European Economic Area — 2021)[14].

The collection of information on the hazardousness of the substances contained in waste includes data on the hazard statements required for Step 4 of Stage III.

2.5.4 Step 4 of Stage III — Assessment of the hazardousness of waste

Following the provisions of Annex 1 to the Waste Management Rules, the hazardousness of waste must be assessed following the provisions of Regulation (EU) No 1357/2014[15], i.e. it must be determined whether waste has one or more hazardous properties as a result of the concentration of hazardous substances contained therein (0, Fig. 19).

Point 1 of Annex 1 to the Waste Management Rules:

1. For the assessment of hazardous properties of waste, the criteria set out in the Annex to Commission Regulation (EU) No 1357/2014 of 18 December 2014, replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives (OJ 2014 L 365, p. 89) ('Regulation No 1357/2014') shall apply.

Hazardous Properties	
HP 1	Explosive
HP 2	Oxidising
HP 3	Flammable
HP 4	Irritant – skin irritation and eye damage
HP 5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP 6	Acute Toxicity
HP 7	Carcinogenic
HP 8	Corrosive
HP 9	Infectious
HP 10	Toxic for reproduction
HP 11	Mutagenic
HP 12	Release of an acute toxic gas
HP 13	Sensitising
HP 14	Ecotoxic
HP 15	Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste

Where the precise information on the hazardous substances contained in the waste is available, it must be assessed whether the waste has the hazardous properties listed above, based on the threshold values provided in Annex III to the WFD (sometimes the term 'cut-off value' is used as well, meaning the value used to determine whether the presence of a

[14] https://www.concawe.eu/publication/hazard-classification-and-labelling-of-petroleum-substances-in-the-european-economic-area-2021/.

[15] Since Regulation (EU) No 1357/2014 replaced Annex III to the WFD, the reference to the Regulation should also be understood as a reference to Annex III to the WFD.

particular hazardous substance in the waste is to be assessed for one or several hazardous properties) and the concentration limits.

Specific approaches to determine hazard properties (HP 1 to HP 15) of waste are provided in 0[16].

Examples of classifying specific waste are included in 0.

Note that, under the provisions of Annex III to the WFD, only substances contained in waste with concentrations exceeding the cut-off value (threshold value) should be included in the assessment for specific hazardous properties; this applies to the assessment of whether the waste is classified as hazardous due to HP 4, HP 6, HP 8, an HP 14.

The cut-off values (threshold values) information for hazardous properties is provided in both Annex 8 and Annex 7-1.

Notes:

- There is no need to assess all hazardous properties. If, for example, there are reasonable grounds for suspecting that the waste may be hazardous due to the property HP 14 (ecotoxic), and the tests confirm this information, the hazardous waste code may be assigned to the waste without testing for physical properties HP 1, HP 2, HP 3 and, HP 12 and/or performing composition tests and calculations to determine whether the waste has the properties HP 4, HP 5, HP 6, HP 7, HP 8, HP 10, HP 11, and HP 13;
- unlike in the other previously described steps of Stage III, it is not necessary to follow the sequence of steps referred to in the diagram in all cases since it must be decided on a case-by-case basis, in the light of the available information on waste, which tests (tests to determine physical properties, tests to determine ecotoxicity or composition tests) are the most feasible, and therefore should to be carried out first. For example, waste may be presumed to have the property HP 3 (flammable); therefore, it should be first tested for this particular property and, if confirmed, there is no need to carry out any other steps referred to in the flowchart;
- to facilitate the waste identification process, the data collected/received in Step 1 of Stage III (data on the concentration of substances) and the data collected in Step 3 of Stage III on the substances contained in the waste (hazard statements) can be summarised in a single table containing the threshold values listed in Annex III to the WFD (see Fig. 18); this summary is helpful for the primary analysis of the available data and the elimination of the substances below the threshold values from the subsequent assessment.

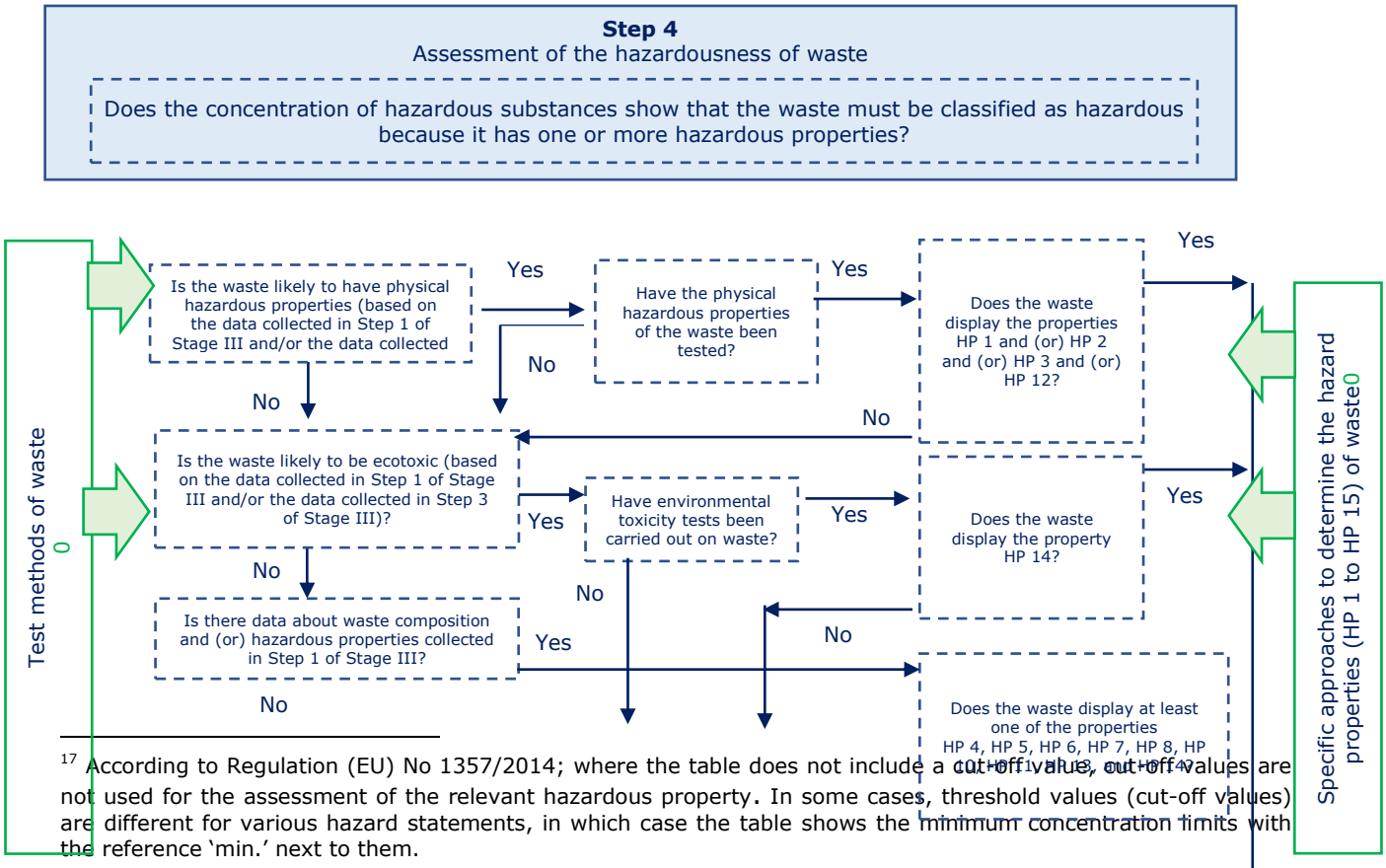
[16] Note: The content of Annex 3 to the EU Guidance has been transferred to Annex 8 to the Guide.

Element/ Parameter	Identified concentration of the element, mg/kg	Additional data (for the worst case scenario calculations)					Hazardous properties/cut values[17]/concentration limits[18]								
							HP4	HP5	HP6	HP7	HP8	HP10	HP11	HP13	HP14
		Compound	Atomic mass of the element	Molar mass of the compound	Calculated concentration of the compound, mg/kg	Recalculated concentration, %	1 %		min. 0,1 %		1 %			10 %	min. 0,1 %
								min. 1 %		min. 0,1 %		min. 0,3 %	min. 0,1 %		
Cu	10	$CuCl_2$	63,55	134,450	21	0,002	H315 H318		H302 H312						H411
Pb	15	$PbCl_2$	207,2	278,100	20	0,002		H372	H302 H332	H351		H360			H410
Ni	11	NiC_{l2}	58,69	129,590	24	0,002	H315	H372	H301(3) H331	H350		H360	H341	H317	H410
Zn	46	$ZnCl_2$	65,38	136,280	96	0,010	H314		H302		H314				H410

Fig. 18 Sample data summary

In most cases, concentrations are determined in mg/kg, while threshold and cut-off values are given as percentages in Annex III to the WFD. To convert it into the percentage concentration, the determined value in mg/kg should be divided by 10,000; e.g. 5 mg/kg = 0.0005 %.

Information on the possible 'worst case' Scenario of certain substances, the atomic masses of the elements and the molar masses of the compounds concerned is provided in Annex 7-3 to the Guide.



[17] According to Regulation (EU) No 1357/2014; where the table does not include a cut-off value, cut-off values are not used for the assessment of the relevant hazardous property. In some cases, threshold values (cut-off values) are different for various hazard statements, in which case the table shows the minimum concentration limits with the reference 'min.' next to them.

[18] In accordance with Regulation (EU) No 1357/2014. In some cases, concentration limits are different for various hazard statements, in which case the table shows the minimum concentration limits with the reference 'min.' next to them.

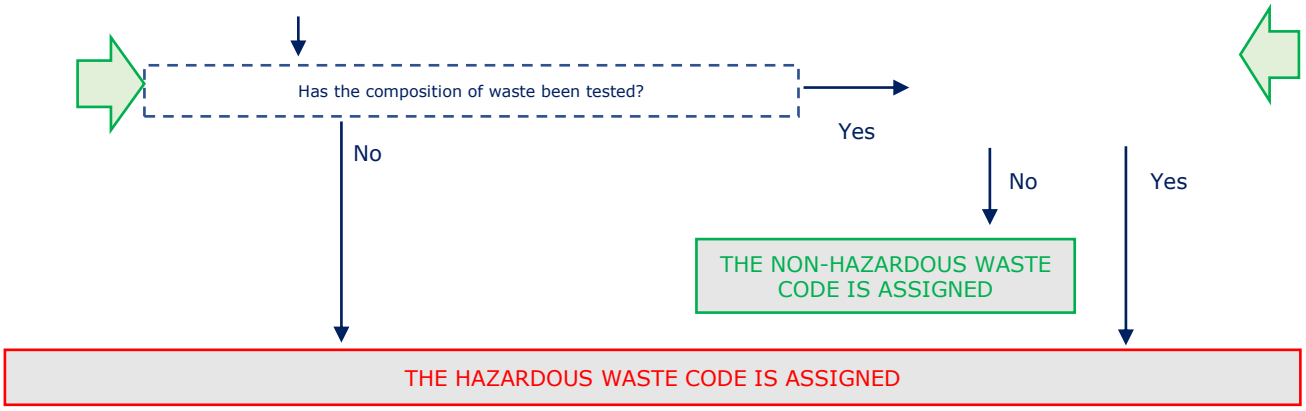


Fig. 19 Assessment of hazardous properties of waste

Reference List

1. Commission Decision 2014/955/EU of 18 December 2014 amending Decision 2000/532/EC on the List of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council.
2. Commission Decision 2000/532/EC of 3 May 2000 replacing Decision 94/3/EC establishing a list of waste pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (notified under document number C(2000) 1147).
3. Commission Regulation (EU) No 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives.
4. Guidance on the interpretation of key provisions of the WFD (European Commission — Directorate-General Environment (2013): Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste).
5. https://am.lrv.lt/uploads/am/documents/files/atliekos/2018_C%20124_01%20%20Atliek%C5%B3%20klasifikavimo%20techninn%C4%97s%20gair%C4%97s.pdf.

Annexes

Ref. No	**Title**
Annex 1	Legal context of the identification and classification of hazardous waste
Annex 2	List of waste
Annex 3	Identification and classification of hazardous waste produced by households
Annex 4	Classification of specific waste streams:
Annex 4-1	*Example for the classification of packaging waste*
Annex 4-2	*Classification of WEEE*
Annex 4-3	*Classification of ELVs*
Annex 4-4	*Classification of wood waste in foreign countries*
Annex 5	Laboratory testing
Annex 6	Classification of waste containing POPs
Annex 7	Hazardous substances and their classification:
Annex 7-1	*Hazardous properties HP1 to HP15: Cut-off values and other information*
Annex 7-2	*Information on the search options in the CLP database*
Annex 7-3	*Information about the hazard statements, hazardous properties, and 'worst case' compounds of the hazardous substances most frequently occurring in waste*
Annex 8	Specific approaches to determine hazard properties (HP 1 to HP 15) of waste
Annex 9	Examples of waste classification
Annex 9-1	*Classification of construction waste (containing coal tar)*
Annex 9-2	*Classification of fly ash waste*
Annex 9-3	*Example for the classification of construction waste from contaminated soils*