



European
Commission

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*Guidance document on the definition and
classification of waste*

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121 **Foreword**

122 (to be added)

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List of Abbreviations

127		
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129	ABANDA	Database on waste analyses
130		('Abfallanalysendatenbank')
131	AH	Absolute Hazardous Entry
132	ANH	Absolute Non-Hazardous Entry
133	ATP	Adaption to Technical Progress
134	BDE	Brominated diphenyl ethers
135	BREF	Best Available Techniques Reference Document
136	BTEX	Benzene, Toluene, Ethylbenzene and Xylene
137	CaO	Calcium oxide
138	Ca(OH) ₂	Calcium hydroxide
139	CEN	European Committee for Standardization
140	CJEU	Court of Justice of the European Union
141	C&L	Classification & Labelling
142	CLP	Classification, Labelling and Packaging
143	CLRTAP	Convention on Long-Range Transboundary Air
144		Pollution
145	ECHA	European Chemicals Agency
146	EEA	European Environmental Agency
147	ELV	End of life vehicles
148	ETDS	Environmental Terminology and Discovery Service
149	EU	European Union
150	GHS	Globally Harmonised System
151	HP	Hazardous Property
152	ICP-MS	Inductively Coupled Plasma Mass Spectrometry
153	LANUV	Environment Agency of North Rhine-Westphalia
154		('Landesamt für Natur, Umwelt und
155		Verbraucherschutz' Nordrhein-Westfalen')
156	LoW	List of Waste (Decision 2000/532/EC, as amended)
157	MH	Mirror Hazardous Entry
158	MNH	Mirror Non-Hazardous Entry
159	MS	(EU) Member State
160	ODS	Ozone depleting substances
161	OSHA	Occupational Safety & Health Administration
162	PAH	Polycyclic Aromatic Hydrocarbons
163	SDS	Safety Data Sheet
164	TOC	Total Organic Carbon

165	UN	United Nations
166	UNECE	United Nations Economic Commission for Europe
167	UNEP	United Nations Environment Programme
168	US	United States
169	WEEE	Waste electrical and electronic equipment
170	WFD	Waste Framework Directive (2008/98/EC)
171	WHO	World Health Organization

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Glossary

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175 **Cut-off value**

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Where a substance is present in the waste at a concentration below a given numerical value (i.e. its cut-off value), it shall not be considered towards the calculations for comparison against the specific thresholds (concentration limits) for assigning the relevant hazard properties, indicated in Annex III to the WFD. Cut-off values to be applied for certain HP codes are indicated in this same annex.

186 **M-factor**

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M-factor means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present.

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195 **Chapter (LoW)**

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The LoW contains 20 chapters categorising wastes according their source (chapters 01 to 12 and 17 to 20), type (chapters 13 to 15) and not otherwise specified (chapter 16). The chapter numbering in the LoW has two digits.

202 **Sub-chapter (LoW)**

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Chapters of the LoW are further divided into sub-chapters with four digits. Sub-chapters group wastes based on common origins or properties.

206 **Entry (LoW)**

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Entries of the LoW show a six digit code and cover different type of wastes. Wastes assigned to entries with an asterisk (*) shall be considered hazardous. All other entries of the LoW are considered non-hazardous. Thereby a waste has to be either hazardous or non-hazardous. There are different types of entries: AH, ANH, MNH, MH (see below).

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216 **Absolute Hazardous (AH) entry**

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AH entries are entries with six digits from the LoW. Wastes which are assigned to AH entries cannot be allocated to alternative non-hazardous entries and are hazardous without any further assessment.

222	Absolute non-hazardous (ANH) entry	ANH entries are entries with six digits from the LoW. Wastes which are assigned to ANH entries cannot be allocated to alternative hazardous entries and are non-hazardous without any further assessment.
223		
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228	Mirror entry	Mirror entries are a group of at least two alternative entries with six digits on the LoW. In contrast to AH or ANH entries, if waste is to be allocated to a group of alternative entries (namely Mirror non-hazardous (MNH) entries and mirror hazardous (MH) entries, further steps in the assessment for allocation have to be undertaken.
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238	Harmonised classification	For some substances the decision on the classification of the chemical is officially taken at EU level. This classification can be found in Table 3.1 of Part 3 of Annex VI to the CLP Regulation. It is mandatory to apply this harmonised classification.
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244	Self-classification	In absence of a harmonised classification, manufacturers, importers and downstream users have to self-classify the chemicals according to the CLP Regulation.
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250	Hazardous waste	Hazardous waste means waste which displays one or more of the hazardous properties listed in Annex III to the WFD.
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253		The LoW includes hazardous waste and takes into account the origin and composition of the waste and, where necessary, the limit values of concentration of hazardous substances. The LoW shall be binding as regards determination of the waste which is to be considered as hazardous waste.
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261	Hazardous property (HP)	HPs are properties of waste which render it hazardous. There are 15 HPs described in Annex III to the WFD. In some cases hazardous properties of waste are assessed based on the properties and concentrations of the hazardous substances contained in the waste.
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268	Substance	Substance means according to the definition of the REACH Regulation a chemical element and its compounds in the natural state or obtained by any
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272		manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.
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279	Mixture	Mixture means according to the definition of the REACH Regulation a mixture or solution composed of two or more substances.
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283	Article	Article means according to the definition of EU REACH Regulation an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition.
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290	Hazardous substance	A substance or a mixture fulfilling the criteria relating to physical hazards, health hazards or environmental hazards, laid down in Parts 2 to 5 of Annex I to the CLP regulation is hazardous and shall be classified in relation to the respective hazard classes provided for in that Annex.
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297	Hazard statement code	A hazard statement code is a phrase assigned to a hazard class and category that describes the nature of the hazards of a hazardous substance or mixture, including, where appropriate, the degree of hazard. For example a carcinogenic substance could be assigned with 'H350' or 'H351'.
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305	Hazard Class	Hazard class means the nature of the hazard. For example a carcinogenic substance is defined by 'Carc.'
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308	Hazard Category	Hazard category means a sub-category of the hazard class that describes the severity of the hazard. For example a carcinogen could be '1A'. '1B' or '2'.
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452

453 **1. Introduction**

454 **1.1. Background**

455 Waste management is becoming increasingly sophisticated and complex. In the same
456 time, the knowledge on waste generation, waste properties and waste management
457 has been vastly improved during the last 15 years, when the EU first developed a
458 consolidated list of waste (the then so-called 'European Waste Catalogue') bringing
459 together two separate lists as they were applied before (since 1994).

460 Further, the waste management industry today is a fast-growing innovative sector,
461 developing new treatment technologies or using existing technologies (including pre-
462 treatment) much more efficiently. These changes provide many specific solutions,
463 enabling the use of waste as a resource as well as the ability to recover raw materials
464 from waste on many occasions. In this respect, the management of waste, including
465 hazardous waste, offers many opportunities for society as a whole.

466 At the same time, waste management is a sector where impacts for health and the
467 environment are of particular concern, and this is indeed specifically recognised for
468 hazardous wastes by EU waste law. The question if the advantages of recycling are
469 outweighed by unwanted transfers and perpetuation of hazardous substances in the
470 material cycle needs to be carefully considered and offers difficult challenges for
471 regulators, authorities and economic actors.

472 Against this background, the classification of waste as hazardous or non-hazardous,
473 and, in particular, understanding at what point and under what circumstances waste is
474 to be considered hazardous is a crucial decision in the entire chain of waste
475 management from generation to final treatment (indeed, it goes even beyond this,
476 since the knowledge about what makes waste hazardous also is relevant in the case of
477 waste prevention). At the point where a waste is correctly classified as hazardous, a
478 number of important obligations are triggered, for instance on labelling and packaging,
479 but also in terms of the available compliant treatment.

480 The EU has learned lessons from the application of previous waste legislation and has
481 taken the scientific and economic progress into account when the framework for
482 classification of waste and the list of properties that render waste hazardous have
483 been modified in 2014. This update of legislation, which also takes into consideration
484 the fundamental changes in EU chemicals legislation during the last years, again sets
485 out challenges for authorities and industry.

486

1.2. To whom is the guidance addressed?

This document aims at assisting national authorities and businesses with guidance on how to understand and correctly apply the relevant EU legislation regarding the classification of waste, in particular the Waste Framework Directive and the List of Waste.

1.3. How to read the guidance?

The overall background and the specific legislative framework are presented in chapters 1 and 2.

Chapter 3 guides through the basic steps of the classification process. It does not contain specific information on how to perform the necessary steps for classification but rather mentions a general overview. For certain steps, reference is made to the corresponding Annex, where more detailed information can be found.

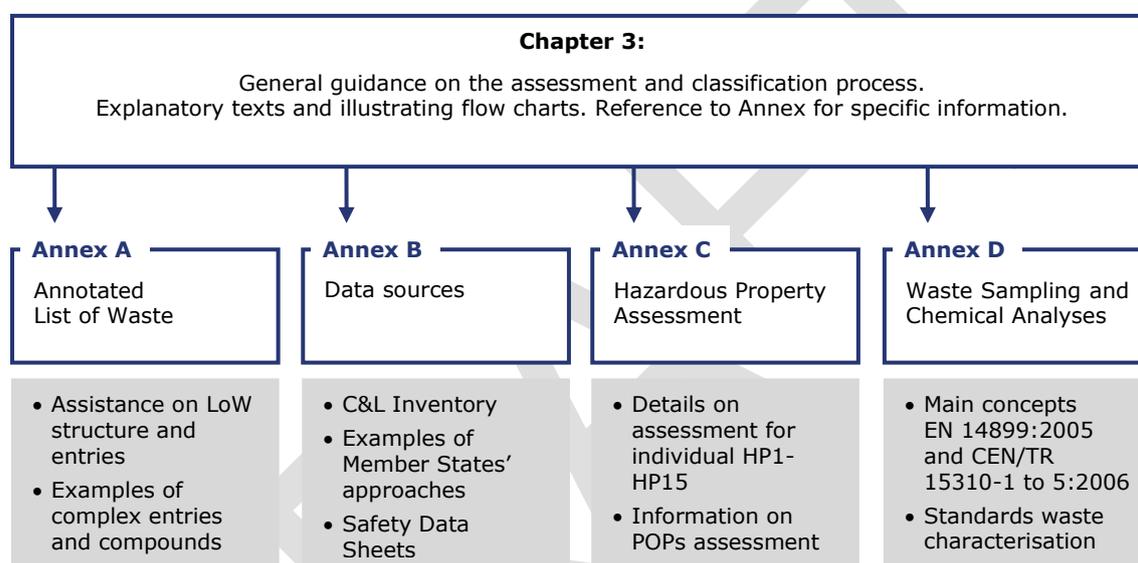


Figure 1: Overview structure of this guidance document

2. Legislative Framework

2.1. Waste Legislation

2.1.1. Waste Framework Directive (WFD)

The WFD sets out what waste is and how it should be managed. It considers some wastes to be hazardous waste.

A hazardous waste is defined as a waste that displays one or more of the fifteen hazardous properties listed in Annex III to the WFD. Article 7 of the WFD sets the basis for the LoW.

Box 1: The Waste Framework Directive

The Waste Framework Directive 2008/98/EC (hereinafter WFD) is the key legislative document on waste at the EU level, containing general definitions, fundamental principles, and basic obligations of different relevant actors. Being a Directive, the WFD is transposed into the national legislation of the MS by means of separate legal acts.

The scope of the Directive focuses on 'waste' as defined in Article 3(1) WFD, i.e.

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

Any substance or object is either waste or non-waste (non-waste including products, industrial by-products and substances or objects which have reached the 'end-of-waste'-status). Whereas in many cases the decision whether a substance or an object is 'waste' in the sense of the WFD is easy to determine, some other cases are difficult. Extensive guidance on the term 'waste' and its understanding, including on certain exclusions from the scope of WFD, and examples from the binding jurisprudence of the CJEU, can be found in the document [EC 2012]. If the substance or object fulfils the criteria for being waste, it is subject to the waste legislation including waste classification (unless it is specifically excluded from the scope of WFD).

The WFD also defines 'hazardous waste' in its Article 3(2):

'waste which displays one or more of the hazardous properties listed in Annex III'.

Just as the question whether something is 'waste', the question whether it is 'hazardous waste' is a crucial decision, following a binary test: waste is always either hazardous or non-hazardous. For the case that waste is hazardous, a number of specific obligations apply, e.g.

- labelling and packaging obligations (Article 19);
- the obligation to provide evidence for the tracking of the waste according to the system put by the relevant Member State (Article 17);
- a mixing ban (Article 18, see for details on mixing ban [EC 2012]).

The EU legislation further determines that hazardous waste must only be treated in specially designated treatment facilities that have obtained a special permit.

The criteria of Annex III to the WFD have been recently adapted to scientific progress. The act amending Annex III is Commission Regulation 1357/2014, which being a regulation is directly applicable in the Member States without transposition to national legislation. The new Hazardous Properties (HP) are to be applied as of 1 June 2015. The hazardous properties are discussed in detail in Annex C of this document.

541 In the context of waste classification, further note that Article 7 WFD sets the basis for
 542 the List of Waste (the 'LoW', Decision 2000/532/EC, see below) and its application.
 543 Member States may introduce additional entries in the national documents reflecting
 544 the LoW.

Article 7 of the WFD

Article 7(2) and (3) WFD set out provisions for the case that a Member considers a waste as hazardous which is listed in the LoW as non-hazardous, and vice versa. The two paras read as follows:

"2. A Member State may consider waste as hazardous waste where, even though it does not appear as such on the list of waste, if it displays one or more of the properties listed in Annex III. The Member State shall notify the Commission of any such cases without delay. It shall record them in the report provided for in Article 37(1) and shall provide the Commission with all relevant information. In the light of notifications received, the list shall be reviewed in order to decide on its adaptation.

3. Where a Member State has evidence to show that specific waste that appears on the list as hazardous waste does not display any of the properties listed in Annex III, it may consider that waste as non-hazardous waste. The Member State shall notify the Commission of any such cases without delay and shall provide the Commission with the necessary evidence. In the light of notifications received, the list shall be reviewed in order to decide on its adaptation."

Article 7(2) and (3) do not prescribe the competent authority or the relevant procedure for such decisions; this is a question left to the internal legal and administrative organisation of each Member State (however, economic operators or other private entities are not considered "the Member States" and are not entitled to take a decision pursuant to Article 7(2) and 7(3) WFD).

Box 2: Further information on Article 7 of the WFD

2.1.2. European List of Waste (LoW)

The LoW provides further provisions for the assessment of hazardous properties and the classification of waste.

It provides the list of wastes, categorised into chapters, sub-chapters and entries. The entries in the LoW can be categorised into 'absolute hazardous entries', 'absolute non-hazardous entries' and 'mirror entries'.

Box 3: The European List of Waste

549 Commission Decision 2000/532/EC establishes the European List of Waste (LoW). The
 550 LoW is the key document for classification of waste. A consolidated version of the LoW
 551 has existed since 2000 and has been revised by EU Decision 2014/955/EU, in order to
 552 adapt the LoW and its associated definitions and methodologies, to scientific progress
 553 and align it with developments in chemicals legislation. Legally, the LoW is an EU
 554 Decision addressed to the Member States; Member States often publish legal
 555 documents substantially reflecting the LoW. Note that these national documents are
 556 the relevant reference documents for businesses and national authorities.
 557

558 Classification according to the LoW firstly means that each waste is to be classified by
 559 a six digit number (see in detail chapter A.1).

560 Full and compliant classification enables businesses and competent authorities for a
 561 decision in terms of the question whether the waste is hazardous or not (see in detail
 562 3.1). In this respect, the LoW recognises three types of entries:

- 563 ■ 'Absolute hazardous entries': Wastes which are assigned to absolute hazardous
 564 entries cannot be allocated to alternative non-hazardous entries and are hazardous
 565 without any further assessment;
- 566 ■ 'Absolute non-hazardous entries': Wastes which are assigned to absolute non-
 567 hazardous entries cannot be allocated to alternative hazardous entries and are
 568 hazardous without any further assessment;

- 569
- 570
- 571
- 'Mirror entries', where waste from the same source might under the LoW be allocated to a hazardous entry or to a non-hazardous entry depending on the specific case and on the composition of the waste.

2.1.3. Waste Shipment Regulation (WSR)

The WSR implements into EU law the provisions of the Basel Convention and OECD Decision C(2001)107/Final.

Shipments procedures depends on the type of waste, its destination and its treatment operation.

Box 4: The Waste Shipment Regulation

574

575 Regulation (EC) No 1013/2006 on shipment of waste (Waste Shipment Regulation or

576 WSR) implements into EU law the provisions of the Basel Convention and OECD

577 Decision C(2001)107/Final. The WSR, which is directly applicable in all Member States,

578 establishes the procedures, conditions and requirements to be fulfilled in the course of

579 transboundary shipments of waste, including shipments between Member States.

580 According to Articles 34 and 36 of the WSR, the export of waste for a disposal

581 operation outside the EU/EFTA area is prohibited, as well as the export of hazardous

582 wastes from the EU to any non-OECD Decision country.

583 There are two control procedures for the shipment of waste, namely:

- 584
- 585
- 586
- the **general information requirements** of Article 18 which is normally applicable to shipments for **recovery** of wastes listed in Annex III ('green' listed wastes) or IIIA, and
 - the procedure of **prior written notification and consent** for any other type of shipment of wastes.
- 587
- 588

589 In the context of identification of waste for the purpose of correct procedure and

590 documentation, first note that the classification according to the lists contained in

591 Annex III-IV of the WSR (the incorporated lists of international agreements) is

592 relevant. These lists provide for a classification approach different to the one of the

593 LoW.

594 However, classification according to WFD and LoW is also relevant in the context of

595 the WSR, for instance as a criterion whether the waste may be exported for certain

596 non-EU non-OECD countries (Article 36(1) WSR). The classification of waste in

597 accordance with the entries listed in Annexes III-IV (i.e. Basel Convention and OECD

598 codes) as well as the entries of the LoW (Part2 of Annex V) is to be indicated on the

599 notification and movement document used in the framework of the notification

600 procedure and in accordance with the instructions under point 25 of Annex IC.

601 Likewise, the identification of waste is to be made on the Annex VII document in the

602 case of shipments subject to the general information requirements of Article 18.

603 Regarding the case of shipments of waste subject to the procedure of prior written

604 notification and consent, the codes to be used for the hazardous characteristics (H

605 codes) and treatment operations (D and R codes) on the notification and movement

606 documents (Annexes IA and IB) are those set out in Annexes III and IV to the Basel

607 Convention, respectively.

609

2.1.4. Landfill Directive

The Landfill Directive contains rules on the management, permit conditions, closure, and after-care of landfills. The WAC specifies acceptance criteria for waste for the different classes of landfills as recognised by the Landfill Directive.

Analyses made in the frame of WAC usually cannot be used for the classification of waste according to the LoW.

610

Box 5: The Landfill Directive

611

612 Directive 1999/31/EC on landfill of waste (the 'Landfill Directive') contains rules on the
613 management, permit conditions, closure, and after-care of landfills. Council Decision
614 2003/33/EC, specifies waste acceptance criteria (WAC) for acceptance of waste in the
615 different classes of landfills as recognised by the Landfill Directive.

616 The classification of waste as hazardous according to LoW and Annex III to the WFD is
617 important also for the purposes of the Landfill Directive since hazardous waste shall as
618 a general rule be disposed of at landfills for hazardous waste, and non-hazardous
619 waste shall be disposed of at landfills for non-hazardous waste or inert waste. Stable,
620 non-reactive hazardous wastes may be disposed of at landfills for non-hazardous
621 wastes if the conditions set out in Annex II of the Landfill Directive and the WAC are
622 fulfilled. It should be recalled that Appendix B to the Council Decision 2003/33/EC
623 clearly states the role of "basic characterisation" and the resulting conclusions on
624 hazardousness, on the landfill admission of waste and illustrates this approach in its
625 Figure 1.

626 However, classification of waste as hazardous or not, according to the principles of the
627 WFD and pursuant to the LoW must not be confused with the assessment of waste in
628 order to determine compliance with the criteria for acceptance of waste as set out by
629 Annex II to the Landfill Directive and as laid down in Council Decision 2003/33/EC
630 (WAC Decision).

631

2.1.5. Directive on waste from the extractive industries (Extractive Waste Directive or Mining Waste Directive)

632

The Extractive Waste Directive sets up the framework for proper management of wastes resulting from extractive industries.

The hazardousness of wastes from the extractive industries has to be classified in line with the LoW.

633

Box 6: The Extractive Waste Directive

634

635 Directive 2006/21/EC on the management of waste from extractive industries
636 ('Extractive Waste Directive' or 'Mining Waste Directive') aims at ensuring that waste
637 from the extractive industries is managed without endangering human health and
638 without using processes or methods which could harm the environment. Although
639 extractive waste is explicitly excluded from the scope of the WFD (Article 2(2)(d)
640 WFD), to the extent that it is covered by Directive 2006/21/EC, classification according
641 to the LoW nevertheless remains relevant.

642 Key obligations established by the Directive (e.g. preparation of waste management
643 plans, classification of the waste management facility, etc.) cannot be properly fulfilled
644 unless the hazardousness of the waste has been established.

645

646 ANNEX III of the Directive, which lists the criteria for determining the classification of
 647 waste facilities, establishes that the hazardousness of the waste concerned has to be
 648 determined in line with the procedures defined by EU legislation on hazardous waste.

649 The Commission has ensured the development of a number of methodologies and
 650 standards needed for the technical implementation of the Directive.¹ The use of these
 651 technical standards and methodologies may supplement the procedures to determine
 652 the hazardousness of the extractive waste concerned.

653 2.1.6. REACH Regulation

The REACH regulation lays down the registration, evaluation, authorization and restriction of chemicals in the EU.

Waste is not a substance, article or mixture within the meaning of REACH. Nevertheless, information generated in the framework of REACH may be relevant for waste classification.

654 **Box 7: The REACH Regulation**

655

656 Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorisation and
 657 Restriction of Chemicals ('REACH Regulation') entered into force in 2007. REACH is the
 658 general chemicals law at EU level, applying to substances (as such, in mixtures or in
 659 articles). The purpose of the REACH Regulation is to ensure a high level of protection
 660 of human health and the environment, including the promotion of alternative methods
 661 for assessment of hazards of substances, as well as the free circulation of substances
 662 on the internal market while enhancing competitiveness and innovation. REACH
 663 defines and operates a number of processes with the overarching aim of ensuring the
 664 safe use of chemicals:

- 665 ▪ registration of substances (requires the submission of information on the properties
 666 and uses of substances, subject to certain conditions, to the European Chemicals
 667 Agency ECHA);
- 668 ▪ improved communication in the supply chain by means of extended Safety Data
 669 Sheets (eSDS);
- 670 ▪ evaluation of substances by public authorities with the aim of providing certainty
 671 regards the proper functioning of the registration process and to further clarify
 672 concern regarding certain substances;
- 673 ▪ restriction of use of substances for which an unacceptable risk has been
 674 determined;
- 675 ▪ authorisation – applicable to certain substances of very high concern (SVHC) which
 676 can only be placed on the market and used subject to the granting of a specific and
 677 time-limited authorisation, subject to certain conditions.

678 It is important to note that according Article 2(2) of the REACH Regulation waste (as
 679 defined by the WFD) is not considered a substance or a mixture or an article under

¹ See for instance

EN 15875:2011 Characterization of waste - Static test for determination of acid potential and neutralisation potential of sulfidic waste

CEN/TR 16363:2012 Characterization of waste - Kinetic testing for assessing acid generation potential of sulfidic waste from extractive industries

CEN/TS 16229:2011 Characterization of waste - Sampling and analysis of weak acid dissociable cyanide discharged into tailings ponds

CEN/TR 16365:2012 Characterization of waste - Sampling of waste from extractive industries

680 REACH; no direct obligations apply under REACH for producers or holders of waste
681 (although the waste stage has to be considered in the chemical safety report to be
682 presented as part of the registration dossier for substances manufactured or imported
683 in the EU in quantities above 10 t/y).

684 However, information about chemical substances generated and communicated in the
685 framework of REACH, particularly hazard information, and its subsequent use in
686 classification according to CLP, is essential (see Annex B) for the classification of
687 waste.

688 Note that test methods to be used for the purpose of REACH Regulation are indicated
689 in Regulation (EC) 440/2008 ('Test Methods Regulation'). Some test methods laid
690 down in this regulation, or adaptations thereof, may be applied in the framework of
691 waste classification.

692 **2.1.7. CLP Regulation**

The CLP Regulation sets out criteria for the hazard classification of substances and mixtures.

Waste is not considered as a substance, mixture or article under CLP. However, the hazardous properties applicable for waste are related to CLP criteria. Further, classification of substances under CLP may also be relevant for waste classification.

693

694 **Box 8: The CLP Regulation**

695 Regulation (EC) 1272/2008 on classification, labelling and packaging of substances
696 and mixtures ('CLP Regulation') adapts for the EU the UN international chemicals
697 classification system (Globally Harmonised System - GHS). In this context, it sets out
698 detailed criteria for assessing substances and determining their hazard classification.

699 Similarly to REACH, Article 1(3) of the CLP Regulation lays down that waste is not
700 considered a substance, mixture or article; consequently, obligations under CLP do not
701 apply for producers or holders of waste.

702 Although Annex III to the WFD is based on the CLP Regulation, it does not contain a
703 full 'one to one' transposition of the criteria as laid down in CLP. Instead, in terms of
704 the classification of waste, it should be noted that some of the HP criteria of Annex III
705 to the WFD directly make reference to CLP hazard classes and categories and to
706 hazard statements and associated criteria for classification. Many mirror entries
707 specifically refer to 'hazardous substances'. The classification of substances is done
708 according CLP whereas the presence of hazardous substances contained in waste has
709 to be evaluated in line with Annex III to the WFD (see in detail 3.2 and Annex C).
710 Further, Table 3.1 of Part 3 of Annex VI to the CLP Regulation provides a set of official
711 harmonised classification of substances. Where such harmonised classification is
712 available, it has to be used in the classification of waste (see for this particular aspect
713 chapter B.1.1).

714 **2.1.8. POP Regulation**

The POP regulation aims to protect environment and human health from persistent organic pollutants (POPs).

Waste containing certain POPs as indicated in the Annex to the LoW (point 2, indent 3) above the relevant threshold of the POP regulation have to be classified as hazardous.

715

716 **Box 9: The POP Regulation**

716

717 Regulation (EC) 850/2004 on persistent organic pollutants (POP Regulation) aims
 718 among others at protecting the environment and human health from certain specified
 719 substances that are transported across international boundaries far from their sources,
 720 persist in the environment, and can bioaccumulate in living organisms, by
 721 implementing relevant international agreements. The Regulation's scope is restricted
 722 to the substances listed in the Annexes of the Regulation.

723 Following Article 7 of the POP Regulation, wastes consisting of POPs, containing or
 724 contaminated with them above specific limit values (concentration limit referred to in
 725 Article 7(4)(a) – the so called 'low POP-content limit value')², must be disposed of or
 726 recovered, without undue delay and in accordance with the provisions laid down in the
 727 POP Regulation in such a way as to ensure that the persistent organic pollutant
 728 content is destroyed or irreversibly transformed so that the remaining waste does not
 729 exhibit the characteristics of persistent organic pollutants. Disposal or recovery
 730 operations that may lead to recovery, recycling, reclamation or re-use of the POPs are
 731 prohibited.

732 With the revision of LoW that becomes applicable in June 2015, it is now considered
 733 that in the case of mirror entries, waste containing certain POPs (as indicated in the
 734 Annex to the LoW (point 2, indent 3)³) above the relevant thresholds of POPs
 735 Regulation are considered hazardous without further consideration (see example
 736 A.5.10).

737 Note that

- 738 ▪ Wastes containing POPs listed in the Annexes of the POP Regulation other than
 739 those specifically mentioned in the Annex to the LoW (point 2, indent 3) do not
 740 automatically classify as hazardous. Classification would depend on the hazard
 741 classification of the substance and to the application of the general rules of Annex
 742 III to the WFD, i.e. assessment of HP1 to HP15;
- 743 ▪ Regardless of the classification of POP wastes as hazardous or non-hazardous, all
 744 obligations set out for the producers and holders of POPs waste according to POP
 745 Regulation shall apply.

746 2.1.9. Seveso III Directive

The Seveso III Directive aims to prevent major accidents involving dangerous substances and a limitation of their consequences for the environment and human health.

It also applies to waste. Operators handling dangerous substances present in waste above certain thresholds must classify waste on the basis of its properties as a mixture. Relevant sources of information may include classification according EU waste legislation.

747

748 **Box 10: The Seveso III Directive**

748

749 Directive 2012/18/EU on the control of major-accident hazards involving dangerous
 750 substances ('Seveso III Directive') has as main objective the prevention of major
 751 accidents which involve dangerous substances, and the limitation of their
 752 consequences for human health and the environment, with the goal of ensuring a high
 753 level of protection throughout the Union in a consistent and effective manner.

² It should be mentioned that some EU Member States apply more stringent limit values for specific POPs.

³ The POPs listed in the LoW are the so called "old POPs". Thus only wastes containing "old POPs" in concentrations which exceed the low POP content limit value shall be classified as hazardous.

754 Operators handling dangerous substances above certain thresholds must regularly
755 inform the public likely to be affected by an accident, providing safety reports, a safety
756 management system and an internal emergency plan. Member States must ensure
757 that emergency plans are in place for the surrounding areas and that mitigation
758 actions are planned. The Seveso III Directive also applies to waste. Note 5 to Annex I
759 of the Seveso III Directive makes reference to CLP Regulation (EC) No 1272/2008 and
760 mentions waste explicitly:

761 *'In the case of dangerous substances which are not covered by Regulation (EC)*
762 *No 1272/2008, including waste, but which nevertheless are present, or are*
763 *likely to be present, in an establishment and which possess or are likely to*
764 *possess, under the conditions found at the establishment, equivalent properties*
765 *in terms of major-accident potential, these shall be provisionally assigned to*
766 *the most analogous category or named dangerous substance falling within the*
767 *scope of this Directive.'*

768

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3. Procedures for the classification of waste

3.1. General approach to the classification of waste

The assessment and classification of waste is applied to each distinct waste stream generated by a producer, if appropriate, following the obtainment of a representative sample. Where more than one waste type is present, each would need to be assessed separately. This ensures that any items or batches of hazardous waste

- are not erroneously classified as non-hazardous by mixing (diluting) it with other wastes (see Article 7 (4) of the WFD);
- are identified in time to prevent being mixed with other wastes, e.g. in a bin, bag, stockpile or skip (see Article 18 of the WFD).

Only mixed municipal waste from domestic households is exempt from these requirements.

The following chapter and flowchart (cf. Figure 2) guide through the general approach for classification of waste. The flowchart indicates a reference both

- to the respective chapter of this document, where the classification step is generally explained and;
- to the respective Annex to this document, where detailed information is provided.

Having completed the first two steps it should be known whether:

- the substance or object in question is subject to the WFD and LoW and;
- either an 'absolute' (hazardous or non-hazardous) LoW entry applies or a 'mirror entry' applies and thus performing a further assessment is necessary.

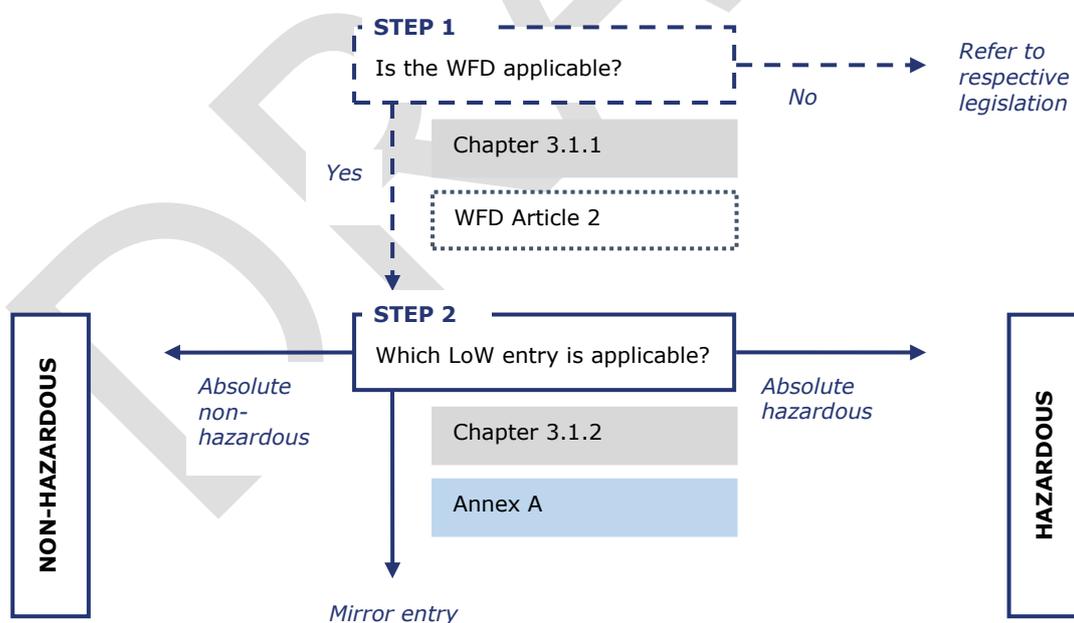


Figure 2: Flow chart for determination of applicable LoW entries

3.1.1. Step 1: Is the WFD applicable?

Before waste can be classified, it should be checked whether WFD and LoW are applicable at all:

- first, it has to be assessed whether the substance or object in question is waste (as defined in the WFD);
- second, it has to be assessed whether certain specified waste streams are excluded from the scope of the WFD.

Determining whether the object or substance in question is considered waste in the sense of the WFD is a precondition for a further assessment regarding its hazardousness. For this particular assessment, the document [EC 2012] provides guidance on the key definition of 'discarding' under the WFD, and related concepts under the WFD such as 'by-product' and 'end-of-waste'.

Second, even if the substance or object is considered waste, it has to be assessed whether one of the exclusions from the scope laid down in Article 2 WFD applies. The text of Article 2 WFD is provided in the box below. Detailed guidance on selected exclusions is provided for in [EC 2012].

In case an assessment leads to the result that an exclusion applies, neither the WFD nor the LoW apply (a special case is the Extractive Waste Directive as described in chapter 2.1.5; the text of the Directive refers to general legislation on hazardous waste as regards the determination of the hazardousness of the waste concerned).

All waste streams not explicitly excluded by the WFD are to be classified according to WFD and LoW, and thus according to the approach outlined in this guidance document. This includes cases where additional legislation exists for a particular waste stream (such as for waste electrical and electronic equipment (WEEE) in the case of the WEEE Directive 2012/19/EU or for waste batteries in the case of the Batteries Directive 2006/66/EC), as mentioned in Article 2(4) WFD.

Directive 2008/98/ECArticle 2 – Exclusions from the scope

1. The following shall be excluded from the scope of this Directive:
 - a. gaseous effluents emitted into the atmosphere;
 - b. land (in situ) including unexcavated contaminated soil and buildings permanently connected with land;
 - c. uncontaminated soil and other 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 on the site from which it was excavated;
 - d. radioactive waste;
 - e. decommissioned explosives;
 - f. faecal matter, if not covered by paragraph 2(b), straw and other natural non-hazardous agricultural or forestry material used in farming, forestry or for the production of energy from such biomass through processes or methods which do not harm the environment or endanger human health.
2. The following shall be excluded from the scope of this Directive to the extent that they are covered by other Community legislation:
 - a. waste waters;
 - b. animal by-products including processed products covered by Regulation (EC) No 1774/2002, except those which are destined for incineration, landfilling or use in a biogas or composting plant;
 - c. carcasses of animals that have died other than by being slaughtered, including animals killed to eradicate epizootic diseases, and that are disposed of in accordance with Regulation (EC) No 1774/2002;
 - d. waste resulting from prospecting, extraction, treatment and storage of mineral resources and the working of quarries covered by Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries.
3. Without prejudice to obligations under other relevant Community legislation, sediments relocated inside surface waters for the purpose of managing waters and waterways or of preventing floods or mitigating the effects of floods and droughts or land reclamation shall be excluded from the scope of this Directive if it is proved that the sediments are non-hazardous.
4. Specific rules for particular instances, or supplementing those of this Directive, on the management of particular categories of waste, may be laid down by means of individual Directives.

820

821

Box 11: WFD Article 2 - Exclusions from the scope

3.1.2. Step 2: Which entry of the List of Waste is applicable?

822

823 The LoW contains 20 *chapters* (two digit codes), further divided into *sub-chapters*
824 (four digit codes) and *entries* (six digit codes).

825 The assignment of a specific entry needs to be done according a predefined order of
826 precedence in sequentially consulting the aforementioned chapters. An annotated
827 version of the LoW, more information on the list's structure, a guidance on how to
828 identify the most appropriate entry for any given waste and specific examples can be
829 found in Annex A.

830 Any waste which can be identified by an entry marked with an asterisk (*) shall be
831 considered as hazardous. Wastes defined by all other entries are considered non-
832 hazardous. To complete Step 2 and identify the applicable entry or entries of the LoW,

- 833 ▪ the appropriate entry or entries of the LoW need to be assessed for the waste in
834 question, taking into account that specific entries at Member States level may have
835 been introduced in the national legislation reflecting the EU LoW;
- 836 ▪ subsequently, it needs to be assessed to which of the following entry types the
837 waste under consideration needs to be assigned:

- 838 ▪ Absolute hazardous (AH) entry (marked with an asterisk (*))

839 Wastes which are assigned to AH entries cannot be allocated to alternative
840 non-hazardous entries and are hazardous without any further assessment.

841 *In case an AH entry is assigned, the waste will be classified as hazardous*
842 *and no further assessment is needed in order to decide whether the waste*
843 *has to be classified as hazardous. However, it will still be necessary to*
844 *proceed with steps 3-5 (see chapter 3.2) in order to determine which*
845 *hazardous properties are displayed by the waste in question as this*
846 *information may be required for the fulfilment of the provisions laid down*
847 *in Article 19 of the WFD on correct labelling of hazardous waste (e.g. for*
848 *filling a consignment note for waste movements).. Please see Box 13 in*
849 *chapter A.1 for information on AH entries displaying no hazardous*
850 *properties.*

- 851 ▪ Absolute non-hazardous (ANH) entry

852 Wastes which are assigned to ANH entries cannot be allocated to
853 alternative hazardous entries and shall be classified as non-hazardous
854 without any further assessment.

855 *In case an ANH entry is assigned, the waste will be classified as non-*
856 *hazardous and no further assessment is needed in order to decide whether*
857 *the waste has to be classified as non-hazardous. Please see Box 13 in*
858 *chapter A.1 for information on ANH entries displaying hazardous*
859 *properties.*

- 860 ▪ Mirror entry

861 Mirror entries can be defined as a pair of related entries where one is
862 hazardous and the other is not. Sometimes a member of a mirror entry
863 can be the pair of several possible related alternative entries. In contrast
864 to AH or ANH entries, if waste is to be allocated to a group of alternative
865 entries, further steps in the assessment for allocation have to be
866 undertaken. The alternative entries consist at least of the following entries:

- 867 ○ Mirror hazardous (MH) entry (marked with an asterisk (*))
- 868 ○ Mirror non-hazardous (MNH) entry

869 *In case there is the choice to assign a MH entry or a MNH entry, it is*
870 *necessary to proceed with steps 3-5 (see chapter 3.2) of the classification*

871 *process in order to determine, based on the results of these*
872 *investigations, whether to assign the MH entry or the MNH entry.*

873 Further assistance on the definition of ANH, AH, MH and MNH is given in chapter A.1.

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3.2. Assignment of MH or MNH entry

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The following chapters are applicable for the determination of whether a MH entry or a MNH entry is to be assigned to the waste under consideration. Additionally, the following chapters can be regarded in order to determine the hazardous properties of a waste assigned with an AH entry, as this information may be required for the fulfilment of the provisions laid down in Article 19 of the WFD on correct labelling of hazardous waste (e.g. for filling a consignment note for waste movements).

883

884

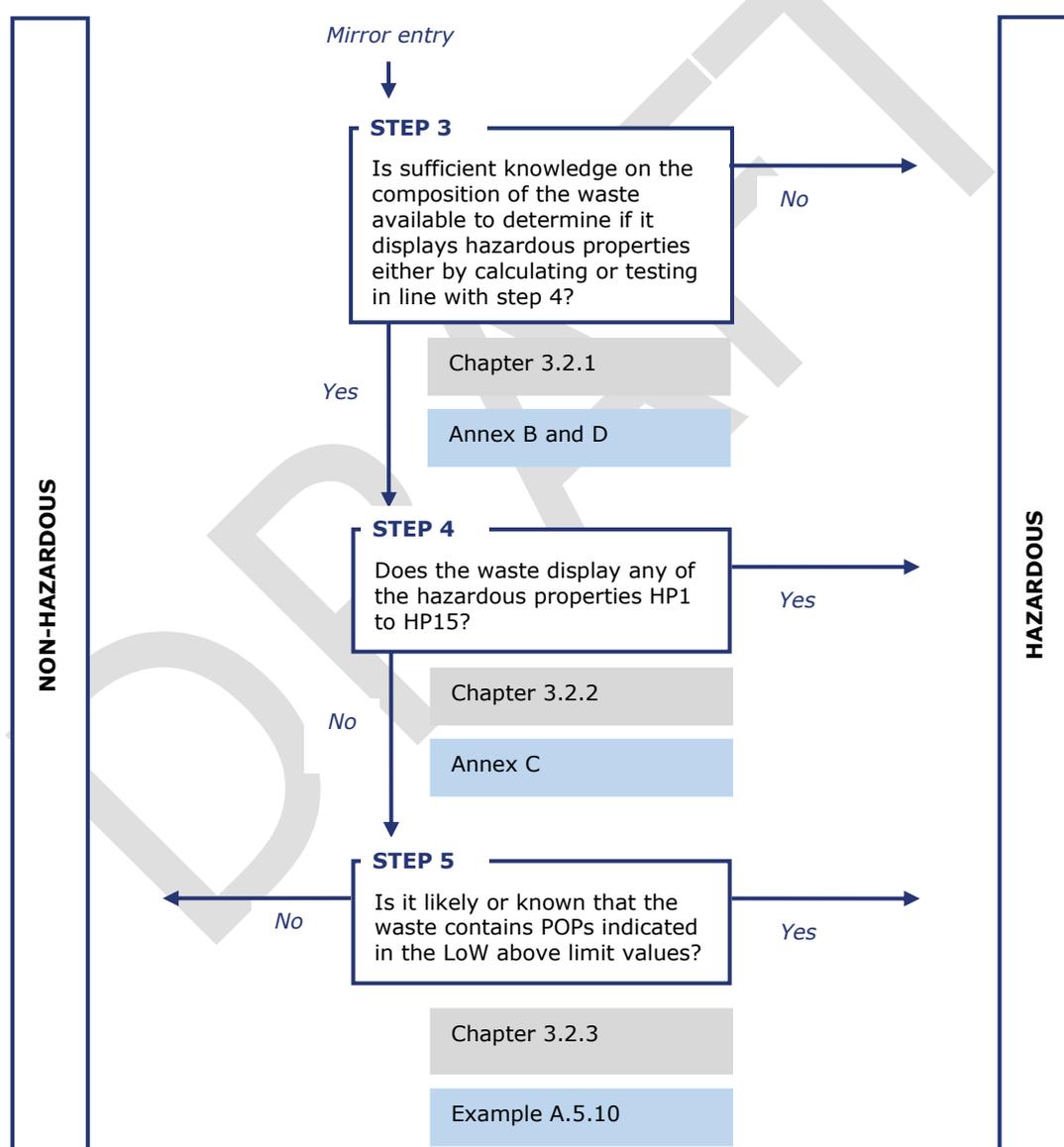
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888

After having completed steps 3-5, it should be finally known whether the waste under consideration contains hazardous components and displays one or more hazardous properties (HP1 to HP15), and/or whether it contains any relevant POPs. Hence it can be decided whether the waste is hazardous or non-hazardous. The following flowchart displays the necessary steps and refers to the following chapters (and respective Annexes for further details).



889

Figure 3: Flow chart for determining whether MH or MNH entry is to be assigned

890

3.2.1. Step 3: Is sufficient knowledge on the composition of the waste available to determine if it displays hazardous properties either by calculating or testing in line with Step 4?

Obtaining sufficient information about the presence and content of hazardous substances in the waste, in order to be able to determine if the waste might display any of the hazardous properties HP1 to HP15, is an important step in waste classification. Certain information on the composition of the waste is required, independent from the chosen method of assessing the hazardous properties (calculation or testing) as it is described in Step 4. There are several ways to gather information on the relevant composition of the waste, the hazardous substances present and potential hazardous properties displayed:

- information on the 'waste-generating' manufacturing process/chemistry and its input substances and intermediates including expert judgments (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) or GHS pictograms, product fiches (see in more detail Annex B);
- databases on waste analyses available on MS level;
- sampling and chemical analysis of the waste (see Annex D).

Once information has been established on the composition of the waste, it becomes possible to assess if the identified substances are classified as hazardous, i.e. if they are assigned a hazard statement code (see Box 12). In order to determine if the contained substances are classified as hazardous and to learn more about the specific hazard classes and categories the substances may be attributed according the CLP Regulation, please refer to the guidance given by Annex B.

Hazard statement codes

Whether substances identified as constituents of the relevant waste are considered hazardous substances, needs to be assessed in line with CLP criteria. For useful information tools in this context, consult Annex B of this document.

Note that according to CLP Regulation, 'hazard statements' are introduced defined as follows:

'hazard statement' means a phrase assigned to a hazard class and category that describes the nature of the hazards of a hazardous substance or mixture, including, where appropriate, the degree of hazard;

An example for a hazard statement code and assigned hazard class and category from Table 3.1 of Part 3 of Annex VI to the CLP Regulation is:

Hazard statement:	Description:	Hazard class and category:
H330	Fatal if inhaled	Acute Tox. 2

Thereby the first digit after the 'H' represents the categorisation of the hazard (2 – physical hazards, 3 – health hazards, 4 – environmental hazards), the second and third digit are consecutive numbers clustering hazard codes. Information on hazard statement codes assigned to substances can be found in Annex B.

Box 12: Remark on CLP criteria: Hazard Statement Codes

Please note that if direct testing of hazardous properties (as it is typically conducted for the physical hazardous properties, see Step 4) is considered, sampling and chemical analysis of the waste under consideration may not be necessary. Instead the other information sources as mentioned above may already indicate whether a targeted direct testing on certain hazardous properties may be reasonably performed.

924 If sampling and chemical analysis of the waste under consideration are considered in
 925 order to determine its chemical composition (e.g. in order to carry out the calculation
 926 approach in the assessment of hazardous properties as described in Step 4), please
 927 refer to Annex D.

928 Finally, if the gathered information on the composition of the waste (taking into
 929 consideration all above displayed options) does not allow to conclude on or assess the
 930 hazardous properties displayed by the waste, neither by calculation nor by testing of
 931 the waste in line with the following step 4, the waste is to be classified as hazardous.

932 Please note that although direct testing methods are available for some hazardous
 933 properties as it is described in Step 4, they are not available for all hazardous
 934 properties. As a consequence, direct testing cannot be used to fully classify a waste of
 935 unknown composition as non-hazardous (see also [UK EA 2015]).

936 **3.2.2. Step 4: Does the waste display any of the hazardous properties** 937 **HP1 to HP15?**

938 As indicated in chapter 2.1.1 and further described in Annex C of this document,
 939 Annex III to the WFD describes 15 properties (HP1 to HP15) of waste which render it
 940 hazardous. Table 1 provides an overview on the aforementioned hazardous properties.

941 **Table 1: Properties of waste which render it hazardous (description taken**
 942 **from WFD, Annex III)**

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

943

As soon as step 3 is completed, sufficient information on the relevant composition of the waste under consideration should be available. This means sufficient knowledge of the hazardous substances contained in the waste and how they are classified (e.g. if they are attributed any relevant hazard statement codes according the CLP Regulation) should be available to the extent, that at least one of the following methods to determine if the waste displays hazardous properties, can be applied:

- **Calculation** if threshold limits based on hazard statement codes (individually depending on the properties HP4 to HP14, see Annex C) are equalled or exceeded by the substances that are present in the waste under consideration;
- **Testing** if the waste displays hazardous properties or not.

Annex C provides a detailed description and guidelines on how to assess the individual hazardous properties HP1 to HP15 via **calculation** or **testing**.

Regarding the **calculation** method, it should be noted that hazardous substance content values in waste as they have been determined, e.g. by sampling and chemical analysis of the waste under consideration, have to be compared against the concentration limits listed in Annex III of the WFD. These concentration limits refer to the state of the waste as it is when the classification of the waste is undertaken, i.e. the fresh weight of the waste. However, many analytical methods specify results on a dry weight basis. As a consequence, analytical values expressed on the basis of dry matter have to be corrected for the moisture content of the waste in order to determine the concentration of the substance in the original waste, as it will be subsequently managed. Waste classifiers should be aware that the laboratories often express results based on dry weight and should therefore be attentive to ensure that they are aware on what basis the analytical results are provided. Classification of waste has to be carried out on the basis of wet weights (either as originally tested or converted from the dry weight figures). Additionally, it should be noted explicitly that Article 7 (4) of the WFD does not allow a dilution or mixing of the waste to lower the initial concentrations of hazardous substances.

Please further note that the concentration limits defined in Annex III to the WFD do not apply to pure metal alloys in their massive form as long as they are not contaminated with hazardous substances. Further information on the classification of metal alloys can be found in chapter A.5.6.

Additional guidance regarding sampling and chemical analyses of waste in order to make use of the calculation method can be found in Annex D.

Direct testing to determine whether a specific hazard property is displayed may be appropriate in some cases, for some hazard properties (e.g. the physical properties such as HP 1 'Explosive', HP 2 'Oxidising' and HP 3 'Flammable').

If a hazardous property has been assessed by a test and by calculating concentrations of hazardous substances as indicated in Annex III to the WFD, the results of the test shall prevail.

Finally, if the waste displays one or more of the 15 hazardous properties, the corresponding MH entry has to be assigned. Whereas, if the waste displays no hazardous property, step 5 has to be undertaken to check whether the waste contains specific POPs above the respective limit values. This is the final step before the waste under consideration can be assigned to the MH or MNH entry.

3.2.3. Step 5: Is it likely or known that the waste contains any of the POPs indicated in in the Annex to the LoW (point 2, indent 3)?

The last step in the classification of waste as hazardous or non-hazardous is to determine whether its content of specific POPs (as listed in the Annex to the LoW,

993 point 2, indent 3) exceeds the relevant limit values of the POP Regulation. A detailed
994 overview, including a list of POPs to be considered and the respective concentration
995 limits, is provided in chapter A.5.10.

996 In case the waste does not contain relevant POPs or its POP content is below the
997 concentration limits, the MNH entry is assigned. Otherwise the MH entry is assigned.

998

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999 **4. Annex**

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Annex A: Annotated List of Waste

A.1. Structure of the LoW

The LoW, in the version as established by Decision 2000/532/EC and as amended by Decision 2014/955/EU, applies from 1 June 2015.

The LoW contains 20 *chapters* (two digit codes, cf. Table 2). These chapters are further divided into *sub-chapters* (four digit codes) and *entries* (six digit codes). Examples for chapter, 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

Classification of waste needs to be done in line with the wording of the respective chapter, sub-chapter and entry.

For the aforementioned example of waste classified with entry 20 01 02 this means that the waste:

- must consist of glass;
- must be collected separately;
- must stem from households or household-like commercial, industrial or institutional waste;
- must not be glass packaging because packaging waste is excluded from chapter 20 and has to be assigned with an entry of chapter 15 for packaging waste

Order of precedence for LoW chapters as laid down in the LoW

The chapters (two digit codes) can be categorized into three different sets that need to be considered, following a predetermined sequence as laid down in the Annex to the LoW, when trying to identify the absolute entry or mirror entry which best corresponds to a waste under investigation:

- A. 01 to 12 and 17 to 20
chapters related to waste source
- B. 13 to 15
chapters related to waste type
- C. 16
chapter for waste not otherwise specified in the list

First, it is important to consider the chapters 01 to 12 and 17 to 20 (excluding their general entries ending with 99) which identify a waste by referring to its source or industrial sector of origin. Instead of considering the general type of industry where the waste arises, one should rather consider the specific industrial process. One example is waste from the automotive industry: depending on the process, waste can be classified in chapter 12 (wastes from shaping and physical and mechanical surface treatment of metals and plastic), chapter 11 (wastes from chemical surface treatment and coating of metals and other materials; non-ferrous hydro-metallurgy) or 08 (wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks). The 99 code from these chapters must not be used at this stage.

1046 If no appropriate waste code can be found in chapters 01 to 12 or 17 to 20, the next
1047 chapters to be checked, according to the defined order of precedence are chapters 13
1048 to 15 (excluding their general entries ending with 99). These chapters are related to
1049 the nature of the waste itself, e.g. waste packaging.

1050 If none of these waste codes apply, the waste must be identified according to chapter
1051 16 (excluding its general entries ending with 99) which represents a miscellaneous set
1052 of waste streams which cannot be otherwise specifically related to a given processes
1053 or sector, e.g. WEEE or end-of life vehicles.

1054 If the waste cannot be reasonably allocated to any of the entries in chapter 16 either,
1055 a suitable 99 code (wastes not otherwise specified) must be found in the section of the
1056 list corresponding to the waste source identified in the first step.

1057 Identifying the most appropriate entry is an important step in the classification of
1058 waste and requires a sound and honest judgement by the operator, based on his
1059 knowledge of the origin and process generating the waste, as well as its potential
1060 composition. Chapter A.2 provides more detailed information on how to apply the list
1061 and its pre-defined order of precedence and summarizes the information already
1062 provided in a flow chart (see Figure 4).

1063 **Table 2: Chapters LoW**

CODE	CHAPTER DESCRIPTION	PRECEDENCE
01	WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, PHYSICAL AND CHEMICAL TREATMENT OF MINERALS	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)	B
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	C
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	A
18	WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (EXCEPT KITCHEN AND RESTAURANT WASTES NOT ARISING FROM IMMEDIATE HEALTH CARE)	

CODE	CHAPTER DESCRIPTION	PRECEDENCE
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	

1064

1065 **Types of LoW entries**

1066 Any entry marked with an asterisk (*) is considered as hazardous waste. As already
 1067 indicated in chapter 3.1.2, the overall 842 entries of the LoW can be divided into
 1068 absolute hazardous (AH), absolute non-hazardous (ANH), mirror hazardous (MH) and
 1069 mirror non-hazardous (MNH) entries (cf. Table 3). Thereby each waste is either
 1070 hazardous or non-hazardous.

1071 **Table 3: Number of entries in the LoW**

842 entries in the List of Waste			
408 Hazardous entries		434 Non-hazardous entries	
228 AH	180 MH	198 MNH	236 ANH

1072

1073 **▪ Absolute hazardous (AH) entry**

1074 Wastes which are assigned to AH entries cannot be allocated to alternative non-
 1075 hazardous entries and are hazardous without any further assessment.

1076 AH entries are marked in dark red colour in the Annotated List of Waste (cf. Table 4
 1077 in chapter A.3).

1078 *In case an AH entry is assigned, the waste will be classified as hazardous and no*
 1079 *further assessment is needed in order to decide whether the waste has to be*
 1080 *classified as hazardous. However, it will still be necessary to proceed with steps 3-5*
 1081 *(see chapter 3.2) in order to determine which hazardous properties are displayed by*
 1082 *the waste in question as this information may be required for the fulfilment of the*
 1083 *provisions laid down in Article 19 of the WFD on correct labelling of hazardous waste*
 1084 *(e.g. for filling a consignment note for waste movements).*

1085 **▪ Absolute non-hazardous (ANH) entry**

1086 Wastes which are assigned to ANH entries cannot be allocated to alternative
 1087 hazardous entries and are classified as non-hazardous without any further
 1088 assessment.

1089 ANH entries are marked in black colour in the Annotated List of Waste (cf. Table 4 in
 1090 chapter A.3).

1091 *In case an ANH entry is assigned, the waste will be classified as non-hazardous and no*
 1092 *further assessment is needed in order to decide whether the waste has to be*
 1093 *classified as non-hazardous.*

1094 **▪ Mirror entry**

1095 Mirror entries can be defined as a pair of related entries where one is hazardous and
 1096 the other is not. Sometimes a member of a mirror entry can be the pair of several
 1097 possible related alternative entries. In contrast to AH or ANH entries, if waste is to
 1098 be allocated to a group of alternative entries, further steps in the assessment for
 1099 allocation have to be undertaken. The alternative entries consist at least of the
 1100 following entries:

- 1101 ○ **Mirror hazardous (MH) entry**
 1102 MH entries are marked in orange colour in the Annotated List of Waste (cf.
 1103 Table 4 in chapter A.3).
- 1104 ○ **Mirror non-hazardous (MNH) entry**
 1105 MNH entries are marked in dark blue colour in the Annotated List of Waste
 1106 (cf. Table 4 in chapter A.3).

1107 Mirror entries can be divided into the following sub-categories:

- 1108 ○ The decision between alternative MH and MNH entry is determined by a
 1109 general reference to hazardous substances, e.g.:

10 12 09* solid wastes from gas treatment containing hazardous substances MH

10 12 10 solid wastes from gas treatment other than those mentioned in 10 12 09 MNH

- 1110 ○ The decision between alternative MH and MNH entry is determined by a
 1111 specific reference to particular hazardous substances, e.g.:

16 01 11* brake pads containing asbestos MH

16 01 12 brake pads other than those mentioned in 16 01 11 MNH

- 1112 ○ For entries with references to multiple entries, the assignment of an entry
 1113 may depend on the origin or certain properties of the waste in question as
 1114 well as its potentially contained hazardous substances, e.g.:

17 06 01* insulation materials containing asbestos MH

17 06 03* insulation materials consisting of or containing hazardous substances MH

17 06 04 Insulation materials other than those mentioned in 17 06 01 and 17 06 03 MNH

1115 Often, but not necessarily, corresponding mirror entries can be recognized via the
 1116 referencing words 'other than those mentioned in...' between MH and MNH entries.

1117

1118 *In case there is the choice to assign a MH entry or a MNH entry, it is necessary to*
 1119 *proceed with steps 3-5 (cf. chapter 3.2) of the classification process in order to*
 1120 *determine the presence and content of hazardous substances in relevant*
 1121 *concentrations, or to determine if the waste directly displays hazardous properties,*
 1122 *so as to adequately assign the MH entry or the MNH entry to the waste stream*
 1123 *under consideration.*



1124

Box 13: Remark on ANH entries displaying HPs and vice versa

1125

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A.2. Identifying the appropriate entry

Selecting the most appropriate entry for the waste from the overall available 842 entries on the LoW is a complex exercise and requires the use of sound judgement. First, the whole list must be considered entirely and the waste must fit to the finally selected entry, sub-chapter and chapter as described in the example for entry 20 01 02 in the previous chapter.

The following flow chart (cf. Figure 4) may clarify the process of identifying the most appropriate entry. The blue framed boxes describe the decisive questions for the actual execution of the step, whereas the grey boxes provide further explanatory remarks on these questions.

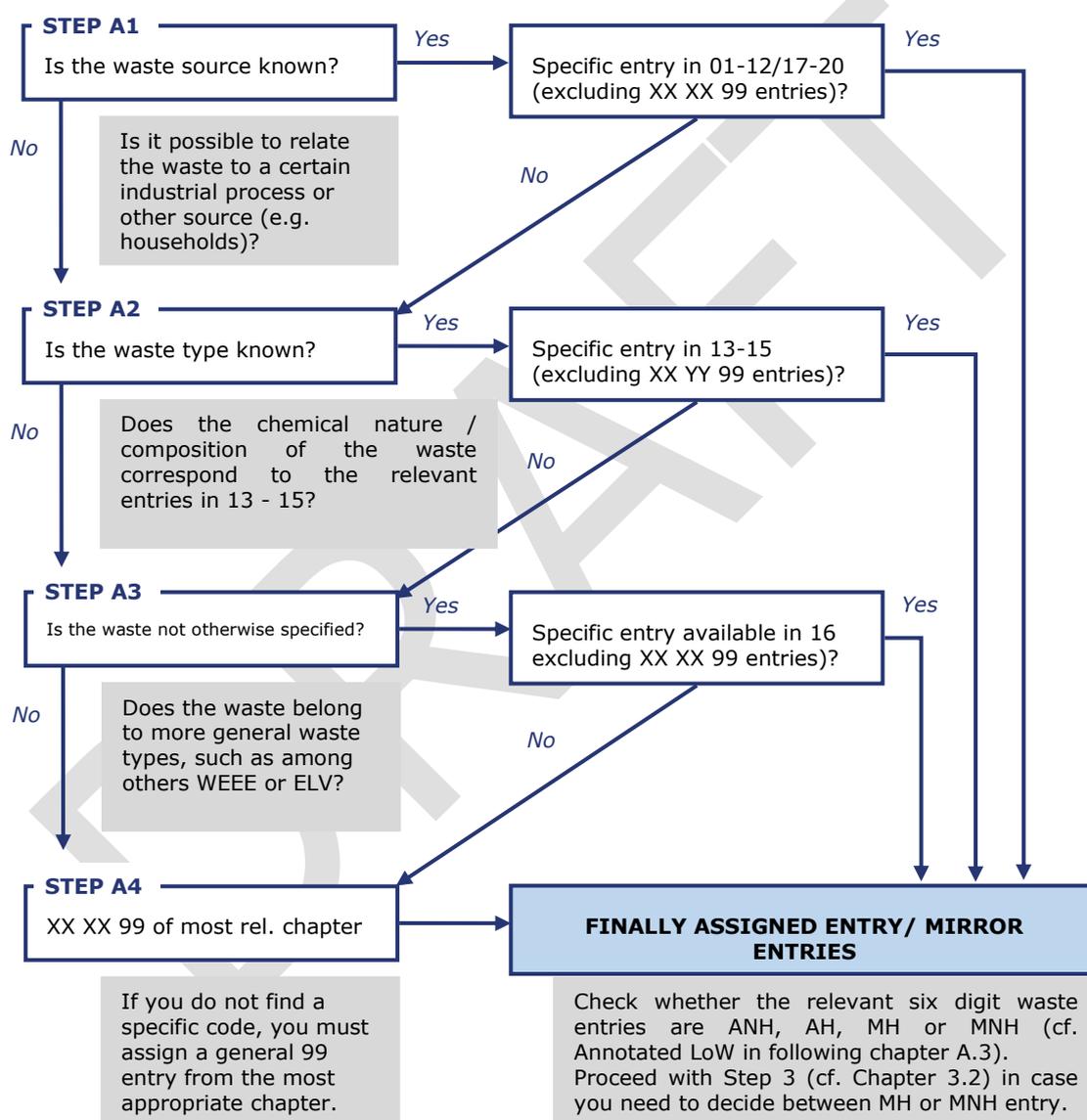


Figure 4: Process for identifying the most appropriate entry

- Within Step A1, initially chapters 01 to 12 and 17 to 20 have to be checked to identify an appropriate entry for the relevant waste according its origin / sector, e.g. according the process where the waste was generated.

1142 At this stage, the general entry XX XX 99 of the respective sub-chapters for waste
1143 not otherwise specified shall not be used. Instead, Step A2 should be taken.

- 1144 ▪ Step A2 consists of assessing whether an entry according to the waste type (as
1145 defined by the nature of its constituents or materials) can be found in chapters 13
1146 to 15. In this step, it should be checked whether the waste in question exclusively
1147 contains packaging waste (for an example see A.4.1). In this case the only
1148 possibility is to choose an entry out of chapter 15.
- 1149 ▪ If the appropriate entry can still not be found, the general chapter 16 within Step A3
1150 for wastes not otherwise specified (cf. chapter A.4.2 and A.4.3) should be consulted.
- 1151 ▪ If the appropriate waste entry could still not be identified, a general XX XX 99 entry
1152 from the most appropriate chapters and sub-chapters must be chosen from the
1153 chapters already screened (cf. step A4). The assignment of such a general XX XX
1154 99 code have to be the last resort and should be avoided as far as possible.

1155
1156 When completing the steps A1 to A4, either an AH or ANH entry or the most
1157 appropriate mirror entries should be assigned to the waste in question. In the latter
1158 case it is necessary proceeding with step 3 (cf. chapter 3.2) of the classification
1159 procedure in order to finally decide whether to assign the MH or the MNH entry.

1160 The flow chart provided in Figure 4 is only meant to give support in assigning the most
1161 appropriate entry or mirror entry pair to a given waste stream, it should be noted that
1162 the process of classification should be seen as a step wise process that may require
1163 several iterations.

1164 The following chapters aim at providing further assistance in this context:

- 1165 ▪ in chapter A.3, an annotated version of the LoW is enclosed;
- 1166 ▪ chapter A.4 contains specific examples of complex entries that serve to illustrate the
1167 classification procedure;
- 1168 ▪ chapter A.5 shows examples of the classification of specific constituents of certain
1169 waste types.

1172 A.3. Annotated List of Waste

1173 The following chapter consists of Table 4 which comprises all entries of the LoW clearly
1174 stating which entries are ANH, AH, MNH and MH entries.

1175 Please note that the interpretation of the entry types in the following annotated List of
1176 Waste is one possible interpretation balancing the views from different MS. There are
1177 different interpretations on MS level which may be checked as well.

1178 **Table 4: Annotated List of Waste**

CODE	CHAPTER DESCRIPTION	ENTRY TYPE
1	WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS	
01 01	wastes from mineral excavation	
01 01 01	wastes from mineral metalliferous excavation	ANH
01 01 02	wastes from mineral non-metalliferous excavation	ANH
01 03	wastes from physical and chemical processing of metalliferous minerals	
01 03 04*	acid-generating tailings from processing of sulphide ore	MH^B
01 03 05*	other tailings containing hazardous substances	MH
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05	MNH
01 03 07*	other wastes containing hazardous substances from physical and chemical processing of metalliferous minerals	MH
01 03 08	dusty and powdery wastes other than those mentioned in 01 03 07	MNH
01 03 09 ⁴	red mud from alumina production other than the wastes mentioned in 01 03 10	MNH
01 03 10* ⁵	red mud from alumina production containing hazardous substances other than the wastes mentioned in 01 03 07	MH^A
01 03 99	wastes not otherwise specified	MNH
01 04	wastes from physical and chemical processing of non-metalliferous minerals	
01 04 07*	wastes containing hazardous substances from physical and chemical processing of non-metalliferous minerals	MH
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07	MNH
01 04 09	waste sand and clays	ANH
01 04 10	dusty and powdery wastes other than those mentioned in 01 04 07	MNH
01 04 11	wastes from potash and rock salt processing other than those mentioned in 01 04 07	MNH
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11	MNH
01 04 13	wastes from stone cutting and sawing other than those mentioned in 01 04 07	MNH
01 04 99	wastes not otherwise specified	MNH
01 05	drilling muds and other drilling wastes	
01 05 04	freshwater drilling muds and wastes	ANH
01 05 05*	oil-containing drilling muds and wastes	MH^B
01 05 06*	drilling muds and other drilling wastes containing hazardous substances	MH
01 05 07	barite-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06	MNH

⁴ Entry newly added by Decision 2014/955/EU

⁵ Entry newly added by Decision 2014/955/EU

01 05 08	chloride-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06	MNH
01 05 99	wastes not otherwise specified	MNH
2	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING	
02 01	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing	
02 01 01	sludges from washing and cleaning	ANH
02 01 02	animal-tissue waste	ANH
02 01 03	plant-tissue waste	ANH
02 01 04	waste plastics (except packaging)	ANH
02 01 06	animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site	ANH
02 01 07	wastes from forestry	ANH
02 01 08*	agrochemical waste containing hazardous substances	MH
02 01 09	agrochemical waste other than those mentioned in 02 01 08	MNH
02 01 10	waste metal	ANH
02 01 99	wastes not otherwise specified	ANH
02 02	wastes from the preparation and processing of meat, fish and other foods of animal origin	
02 02 01	sludges from washing and cleaning	ANH
02 02 02	animal-tissue waste	ANH
02 02 03	materials unsuitable for consumption or processing	ANH
02 02 04	sludges from on-site effluent treatment	ANH
02 02 99	wastes not otherwise specified	ANH
02 03	wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation	
02 03 01	sludges from washing, cleaning, peeling, centrifuging and separation	ANH
02 03 02	wastes from preserving agents	ANH
02 03 03	wastes from solvent extraction	ANH
02 03 04	materials unsuitable for consumption or processing	ANH
02 03 05	sludges from on-site effluent treatment	ANH
02 03 99	wastes not otherwise specified	ANH
02 04	wastes from sugar processing	
02 04 01	soil from cleaning and washing beet	ANH
02 04 02	off-specification calcium carbonate	ANH
02 04 03	sludges from on-site effluent treatment	ANH
02 04 99	wastes not otherwise specified	ANH
02 05	wastes from the dairy products industry	
02 05 01	materials unsuitable for consumption or processing	ANH
02 05 02	sludges from on-site effluent treatment	ANH
02 05 99	wastes not otherwise specified	ANH
02 06	wastes from the baking and confectionery industry	
02 06 01	materials unsuitable for consumption or processing	ANH
02 06 02	wastes from preserving agents	ANH
02 06 03	sludges from on-site effluent treatment	ANH
02 06 99	wastes not otherwise specified	ANH
02 07	wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)	
02 07 01	wastes from washing, cleaning and mechanical reduction of raw	ANH

	materials	
02 07 02	wastes from spirits distillation	ANH
02 07 03	wastes from chemical treatment	ANH
02 07 04	materials unsuitable for consumption or processing	ANH
02 07 05	sludges from on-site effluent treatment	ANH
02 07 99	wastes not otherwise specified	ANH
3	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD	
03 01	wastes from wood processing and the production of panels and furniture	
03 01 01	waste bark and cork	ANH
03 01 04*	sawdust, shavings, cuttings, wood, particle board and veneer containing hazardous substances	MH
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04	MNH
03 01 99	wastes not otherwise specified	ANH
03 02	wastes from wood preservation	
03 02 01*	non-halogenated organic wood preservatives	AH
03 02 02*	organochlorinated wood preservatives	AH
03 02 03*	organometallic wood preservatives	AH
03 02 04*	inorganic wood preservatives	AH
03 02 05*	other wood preservatives containing hazardous substances	AH^B
03 02 99	wood preservatives not otherwise specified	ANH^B
03 03	wastes from pulp, paper and cardboard production and processing	
03 03 01	waste bark and wood	ANH
03 03 02	green liquor sludge (from recovery of cooking liquor)	ANH
03 03 05	de-inking sludges from paper recycling	ANH
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard	ANH
03 03 08	wastes from sorting of paper and cardboard destined for recycling	ANH
03 03 09	lime mud waste	ANH
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation	ANH
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10	ANH
03 03 99	wastes not otherwise specified	ANH
4	WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES	
04 01	wastes from the leather and fur industry	
04 01 01	fleshings and lime split wastes	ANH
04 01 02	liming waste	ANH
04 01 03*	degreasing wastes containing solvents without a liquid phase	AH^B
04 01 04	tanning liquor containing chromium	ANH
04 01 05	tanning liquor free of chromium	ANH
04 01 06	sludges, in particular from on-site effluent treatment containing chromium	ANH
04 01 07	sludges, in particular from on-site effluent treatment free of chromium	ANH
04 01 08	waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium	ANH
04 01 09	wastes from dressing and finishing	ANH
04 01 99	wastes not otherwise specified	ANH^B
04 02	wastes from the textile industry	
04 02 09	wastes from composite materials (impregnated textile, elastomer,	ANH

	plastomer)	
04 02 10	organic matter from natural products (for example grease, wax)	ANH
04 02 14*	wastes from finishing containing organic solvents	MH
04 02 15	wastes from finishing other than those mentioned in 04 02 14	MNH
04 02 16*	dyestuffs and pigments containing hazardous substances	MH
04 02 17	dyestuffs and pigments other than those mentioned in 04 02 16	MNH
04 02 19*	sludges from on-site effluent treatment containing hazardous substances	MH
04 02 20	sludges from on-site effluent treatment other than those mentioned in 04 02 19	MNH
04 02 21	wastes from unprocessed textile fibres	ANH
04 02 22	wastes from processed textile fibres	ANH
04 02 99	wastes not otherwise specified	ANH
5	WASTES FROM PETROLEUM REFINING, NATURAL GAS PURIFICATION AND PYROLYTIC TREATMENT OF COAL	
05 01	wastes from petroleum refining	
05 01 02*	desalter sludges	AH
05 01 03*	tank bottom sludges	AH
05 01 04*	acid alkyl sludges	AH
05 01 05*	oil spills	AH
05 01 06*	oily sludges from maintenance operations of the plant or equipment	AH
05 01 07*	acid tars	AH
05 01 08*	other tars	AH
05 01 09*	sludges from on-site effluent treatment containing hazardous substances	MH
05 01 10	sludges from on-site effluent treatment other than those mentioned in 05 01 09	MNH
05 01 11*	wastes from cleaning of fuels with bases	AH
05 01 12*	oil containing acids	AH
05 01 13	boiler feedwater sludges	ANH
05 01 14	wastes from cooling columns	ANH
05 01 15*	spent filter clays	AH
05 01 16	sulphur-containing wastes from petroleum desulphurisation	ANH
05 01 17	Bitumen	ANH
05 01 99	wastes not otherwise specified	ANH
05 06	wastes from the pyrolytic treatment of coal	
05 06 01*	acid tars	AH
05 06 03*	other tars	AH
05 06 04	waste from cooling columns	ANH
05 06 99	wastes not otherwise specified	ANH
05 07	wastes from natural gas purification and transportation	
05 07 01*	wastes containing mercury	AH^B
05 07 02	wastes containing sulphur	ANH
05 07 99	wastes not otherwise specified	ANH^B
6	WASTES FROM INORGANIC CHEMICAL PROCESSES	
06 01	wastes from the manufacture, formulation, supply and use (MFSU) of acids	
06 01 01*	sulphuric acid and sulphurous acid	AH
06 01 02*	hydrochloric acid	AH
06 01 03*	hydrofluoric acid	AH
06 01 04*	phosphoric and phosphorous acid	AH
06 01 05*	nitric acid and nitrous acid	AH

06 01 06*	other acids	AH
06 01 99	wastes not otherwise specified	ANH
06 02	wastes from the MFSU of bases	
06 02 01*	calcium hydroxide	AH
06 02 03*	ammonium hydroxide	AH
06 02 04*	sodium and potassium hydroxide	AH
06 02 05*	other bases	AH
06 02 99	wastes not otherwise specified	ANH
06 03	wastes from the MFSU of salts and their solutions and metallic oxides	
06 03 11*	solid salts and solutions containing cyanides	MH
06 03 13*	solid salts and solutions containing heavy metals	MH
06 03 14	solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13	MNH
06 03 15*	metallic oxides containing heavy metals	MH
06 03 16	metallic oxides other than those mentioned in 06 03 15	MNH
06 03 99	wastes not otherwise specified	ANH
06 04	metal-containing wastes other than those mentioned in 06 03	
06 04 03*	wastes containing arsenic	AH ^B
06 04 04*	wastes containing mercury	AH ^B
06 04 05*	wastes containing other heavy metals	AH ^B
06 04 99	wastes not otherwise specified	ANH ^B
06 05	sludges from on-site effluent treatment	
06 05 02*	sludges from on-site effluent treatment containing hazardous substances	MH
06 05 03	sludges from on-site effluent treatment other than those mentioned in 06 05 02	MNH
06 06	wastes from the MFSU of sulphur chemicals, sulphur chemical processes and desulphurisation processes	
06 06 02*	wastes containing hazardous sulphides	MH
06 06 03	wastes containing sulphides other than those mentioned in 06 06 02	MNH
06 06 99	wastes not otherwise specified	ANH
06 07	wastes from the MFSU of halogens and halogen chemical processes	
06 07 01*	wastes containing asbestos from electrolysis	AH ^B
06 07 02*	activated carbon from chlorine production	AH
06 07 03*	barium sulphate sludge containing mercury	AH ^B
06 07 04*	solutions and acids, for example contact acid	AH
06 07 99	wastes not otherwise specified	ANH ^B
06 08	wastes from the MFSU of silicon and silicon derivatives	
06 08 02*	waste containing hazardous chlorosilanes	MH
06 08 99	wastes not otherwise specified	MNH
06 09	wastes from the MFSU of phosphorous chemicals and phosphorous chemical processes	
06 09 02	phosphorous slag	ANH
06 09 03*	calcium-based reaction wastes containing or contaminated with hazardous substances	MH
06 09 04	calcium-based reaction wastes other than those mentioned in 06 09 03	MNH
06 09 99	wastes not otherwise specified	ANH
06 10	wastes from the MFSU of nitrogen chemicals, nitrogen chemical processes and fertiliser manufacture	

06 10 02*	wastes containing hazardous substances	MH
06 10 99	wastes not otherwise specified	MNH
06 11	wastes from the manufacture of inorganic pigments and opacifiers	
06 11 01	calcium-based reaction wastes from titanium dioxide production	ANH
06 11 99	wastes not otherwise specified	ANH
06 13	wastes from inorganic chemical processes not otherwise specified	
06 13 01*	inorganic plant protection products, wood-preserving agents and other biocides.	AH
06 13 02*	spent activated carbon (except 06 07 02)	AH
06 13 03	carbon black	ANH
06 13 04*	wastes from asbestos processing	AH
06 13 05*	Soot	AH
06 13 99	wastes not otherwise specified	ANH
7	WASTES FROM ORGANIC CHEMICAL PROCESSES	
07 01	wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals	
07 01 01*	aqueous washing liquids and mother liquors	AH
07 01 03*	organic halogenated solvents, washing liquids and mother liquors	AH
07 01 04*	other organic solvents, washing liquids and mother liquors	AH
07 01 07*	halogenated still bottoms and reaction residues	AH
07 01 08*	other still bottoms and reaction residues	AH
07 01 09*	halogenated filter cakes and spent absorbents	AH
07 01 10*	other filter cakes and spent absorbents	AH
07 01 11*	sludges from on-site effluent treatment containing hazardous substances	MH
07 01 12	sludges from on-site effluent treatment other than those mentioned in 07 01 11	MNH
07 01 99	wastes not otherwise specified	ANH
07 02	wastes from the MFSU of plastics, synthetic rubber and man-made fibres	
07 02 01*	aqueous washing liquids and mother liquors	AH
07 02 03*	organic halogenated solvents, washing liquids and mother liquors	AH
07 02 04*	other organic solvents, washing liquids and mother liquors	AH
07 02 07*	halogenated still bottoms and reaction residues	AH
07 02 08*	other still bottoms and reaction residues	AH
07 02 09*	halogenated filter cakes and spent absorbents	AH
07 02 10*	other filter cakes and spent absorbents	AH
07 02 11*	sludges from on-site effluent treatment containing hazardous substances	MH
07 02 12	sludges from on-site effluent treatment other than those mentioned in 07 02 11	MNH
07 02 13	waste plastic	ANH
07 02 14*	wastes from additives containing hazardous substances	MH
07 02 15	wastes from additives other than those mentioned in 07 02 14	MNH
07 02 16*	waste containing hazardous silicones	MH
07 02 17	waste containing silicones other than those mentioned in 07 02 16	MNH
07 02 99	wastes not otherwise specified	ANH
07 03	wastes from the MFSU of organic dyes and pigments (except 06 11)	
07 03 01*	aqueous washing liquids and mother liquors	AH
07 03 03*	organic halogenated solvents, washing liquids and mother liquors	AH
07 03 04*	other organic solvents, washing liquids and mother liquors	AH

07 03 07*	halogenated still bottoms and reaction residues	AH
07 03 08*	other still bottoms and reaction residues	AH
07 03 09*	halogenated filter cakes and spent absorbents	AH
07 03 10*	other filter cakes and spent absorbents	AH
07 03 11*	sludges from on-site effluent treatment containing hazardous substances	MH
07 03 12	sludges from on-site effluent treatment other than those mentioned in 07 03 11	MNH
07 03 99	wastes not otherwise specified	ANH
07 04	wastes from the MFSU of organic plant protection products (except 02 01 08 and 02 01 09), wood preserving agents (except 03 02) and other biocides	
07 04 01*	aqueous washing liquids and mother liquors	AH
07 04 03*	organic halogenated solvents, washing liquids and mother liquors	AH
07 04 04*	other organic solvents, washing liquids and mother liquors	AH
07 04 07*	halogenated still bottoms and reaction residues	AH
07 04 08*	other still bottoms and reaction residues	AH
07 04 09*	halogenated filter cakes and spent absorbents	AH
07 04 10*	other filter cakes and spent absorbents	AH
07 04 11*	sludges from on-site effluent treatment containing hazardous substances	MH
07 04 12	sludges from on-site effluent treatment other than those mentioned in 07 04 11	MNH
07 04 13*	solid wastes containing hazardous substances	MH
07 04 99	wastes not otherwise specified	MNH
07 05	wastes from the MFSU of pharmaceuticals	
07 05 01*	aqueous washing liquids and mother liquors	AH
07 05 03*	organic halogenated solvents, washing liquids and mother liquors	AH
07 05 04*	other organic solvents, washing liquids and mother liquors	AH
07 05 07*	halogenated still bottoms and reaction residues	AH
07 05 08*	other still bottoms and reaction residues	AH
07 05 09*	halogenated filter cakes and spent absorbents	AH
07 05 10*	other filter cakes and spent absorbents	AH
07 05 11*	sludges from on-site effluent treatment containing hazardous substances	MH
07 05 12	sludges from on-site effluent treatment other than those mentioned in 07 05 11	MNH
07 05 13*	solid wastes containing hazardous substances	MH
07 05 14	solid wastes other than those mentioned in 07 05 13	MNH
07 05 99	wastes not otherwise specified	ANH
07 06	wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics	
07 06 01*	aqueous washing liquids and mother liquors	AH
07 06 03*	organic halogenated solvents, washing liquids and mother liquors	AH
07 06 04*	other organic solvents, washing liquids and mother liquors	AH
07 06 07*	halogenated still bottoms and reaction residues	AH
07 06 08*	other still bottoms and reaction residues	AH
07 06 09*	halogenated filter cakes and spent absorbents	AH
07 06 10*	other filter cakes and spent absorbents	AH
07 06 11*	sludges from on-site effluent treatment containing hazardous substances	MH
07 06 12	sludges from on-site effluent treatment other than those mentioned in 07 06 11	MNH
07 06 99	wastes not otherwise specified	ANH

07 07	wastes from the MFSU of fine chemicals and chemical products not otherwise specified	
07 07 01*	aqueous washing liquids and mother liquors	AH
07 07 03*	organic halogenated solvents, washing liquids and mother liquors	AH
07 07 04*	other organic solvents, washing liquids and mother liquors	AH
07 07 07*	halogenated still bottoms and reaction residues	AH
07 07 08*	other still bottoms and reaction residues	AH
07 07 09*	halogenated filter cakes and spent absorbents	AH
07 07 10*	other filter cakes and spent absorbents	AH
07 07 11*	sludges from on-site effluent treatment containing hazardous substances	MH
07 07 12	sludges from on-site effluent treatment other than those mentioned in 07 07 11	MNH
07 07 99	wastes not otherwise specified	ANH
8	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS	
08 01	wastes from MFSU and removal of paint and varnish	
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances	MH
08 01 12	waste paint and varnish other than those mentioned in 08 01 11	MNH
08 01 13*	sludges from paint or varnish containing organic solvents or other hazardous substances	MH
08 01 14	sludges from paint or varnish other than those mentioned in 08 01 13	MNH
08 01 15*	aqueous sludges containing paint or varnish containing organic solvents or other hazardous substances	MH
08 01 16	aqueous sludges containing paint or varnish other than those mentioned in 08 01 15	MNH
08 01 17*	wastes from paint or varnish removal containing organic solvents or other hazardous substances	MH
08 01 18	wastes from paint or varnish removal other than those mentioned in 08 01 17	MNH
08 01 19*	aqueous suspensions containing paint or varnish containing organic solvents or other hazardous substances	MH
08 01 20	aqueous suspensions containing paint or varnish other than those mentioned in 08 01 19	MNH
08 01 21*	waste paint or varnish remover	AH
08 01 99	wastes not otherwise specified	ANH
08 02	wastes from MFSU of other coatings (including ceramic materials)	
08 02 01	waste coating powders	ANH
08 02 02	aqueous sludges containing ceramic materials	ANH
08 02 03	aqueous suspensions containing ceramic materials	ANH
08 02 99	wastes not otherwise specified	ANH
08 03	wastes from MFSU of printing inks	
08 03 07	aqueous sludges containing ink	ANH
08 03 08	aqueous liquid waste containing ink	ANH
08 03 12*	waste ink containing hazardous substances	MH
08 03 13	waste ink other than those mentioned in 08 03 12	MNH
08 03 14*	ink sludges containing hazardous substances	MH
08 03 15	ink sludges other than those mentioned in 08 03 14	MNH
08 03 16*	waste etching solutions	AH
08 03 17*	waste printing toner containing hazardous substances	MH
08 03 18	waste printing toner other than those mentioned in 08 03 17	MNH

08 03 19*	disperse oil	AH
08 03 99	wastes not otherwise specified	ANH
08 04	wastes from MFSU of adhesives and sealants (including waterproofing products)	
08 04 09*	waste adhesives and sealants containing organic solvents or other hazardous substances	MH
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09	MNH
08 04 11*	adhesive and sealant sludges containing organic solvents or other hazardous substances	MH
08 04 12	adhesive and sealant sludges other than those mentioned in 08 04 11	MNH
08 04 13*	aqueous sludges containing adhesives or sealants containing organic solvents or other hazardous substances	MH
08 04 14	aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13	MNH
08 04 15*	aqueous liquid waste containing adhesives or sealants containing organic solvents or other hazardous substances	MH
08 04 16	aqueous liquid waste containing adhesives or sealants other than those mentioned in 08 04 15	MNH
08 04 17*	rosin oil	AH
08 04 99	wastes not otherwise specified	ANH
08 05	wastes not otherwise specified in 08	
08 05 01*	waste isocyanates	AH
9	WASTES FROM THE PHOTOGRAPHIC INDUSTRY	
09 01	wastes from the photographic industry	
09 01 01*	water-based developer and activator solutions	AH
09 01 02*	water-based offset plate developer solutions	AH
09 01 03*	solvent-based developer solutions	AH
09 01 04*	fixer solutions	AH
09 01 05*	bleach solutions and bleach fixer solutions	AH
09 01 06*	wastes containing silver from on-site treatment of photographic wastes	AH^B
09 01 07	photographic film and paper containing silver or silver compounds	ANH
09 01 08	photographic film and paper free of silver or silver compounds	ANH
09 01 10	single-use cameras without batteries	ANH
09 01 11*	single-use cameras containing batteries included in 16 06 01, 16 06 02 or 16 06 03	MH^B
09 01 12	single-use cameras containing batteries other than those mentioned in 09 01 11	MNH
09 01 13*	aqueous liquid waste from on-site reclamation of silver other than those mentioned in 09 01 06	AH
09 01 99	wastes not otherwise specified	MNH
10	WASTES FROM THERMAL PROCESSES	
10 01	wastes from power stations and other combustion plants (except 19)	
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)	ANH
10 01 02	coal fly ash	ANH
10 01 03	fly ash from peat and untreated wood	ANH
10 01 04*	oil fly ash and boiler dust	AH
10 01 05	calcium-based reaction wastes from flue-gas desulphurisation in solid form	ANH
10 01 07	calcium-based reaction wastes from flue-gas desulphurisation in sludge form	ANH

10 01 09*	sulphuric acid	AH
10 01 13*	fly ash from emulsified hydrocarbons used as fuel	AH
10 01 14*	bottom ash, slag and boiler dust from co-incineration containing hazardous substances	MH
10 01 15	bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14	MNH
10 01 16*	fly ash from co-incineration containing hazardous substances	MH
10 01 17	fly ash from co-incineration other than those mentioned in 10 01 16	MNH
10 01 18*	wastes from gas cleaning containing hazardous substances	MH
10 01 19	wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18	MNH
10 01 20*	sludges from on-site effluent treatment containing hazardous substances	MH
10 01 21	sludges from on-site effluent treatment other than those mentioned in 10 01 20	MNH
10 01 22*	aqueous sludges from boiler cleansing containing hazardous substances	MH
10 01 23	aqueous sludges from boiler cleansing other than those mentioned in 10 01 22	MNH
10 01 24	sands from fluidised beds	ANH
10 01 25	wastes from fuel storage and preparation of coal-fired power plants	ANH
10 01 26	wastes from cooling-water treatment	ANH
10 01 99	wastes not otherwise specified	ANH
10 02	wastes from the iron and steel industry	
10 02 01	wastes from the processing of slag	ANH
10 02 02	unprocessed slag	ANH
10 02 07*	solid wastes from gas treatment containing hazardous substances	MH
10 02 08	solid wastes from gas treatment other than those mentioned in 10 02 07	MNH
10 02 10	mill scales	ANH
10 02 11*	wastes from cooling-water treatment containing oil	MH
10 02 12	wastes from cooling-water treatment other than those mentioned in 10 02 11	MNH
10 02 13*	sludges and filter cakes from gas treatment containing hazardous substances	MH
10 02 14	sludges and filter cakes from gas treatment other than those mentioned in 10 02 13	MNH
10 02 15	other sludges and filter cakes	MNH ^A
10 02 99	wastes not otherwise specified	ANH
10 03	wastes from aluminium thermal metallurgy	
10 03 02	anode scraps	ANH
10 03 04*	primary production slags	AH
10 03 05	waste alumina	ANH
10 03 08*	salt slags from secondary production	AH
10 03 09*	black drosses from secondary production	AH
10 03 15*	skimmings that are flammable or emit, upon contact with water, flammable gases in hazardous quantities	MH ^B
10 03 16	skimmings other than those mentioned in 10 03 15	MNH ^B
10 03 17*	tar-containing wastes from anode manufacture	MH ^B
10 03 18	carbon-containing wastes from anode manufacture other than those mentioned in 10 03 17	MNH ^B
10 03 19*	flue-gas dust containing hazardous substances	MH
10 03 20	flue-gas dust other than those mentioned in 10 03 19	MNH

10 03 21*	other particulates and dust (including ball-mill dust) containing hazardous substances	MH
10 03 22	other particulates and dust (including ball-mill dust) other than those mentioned in 10 03 21	MNH
10 03 23*	solid wastes from gas treatment containing hazardous substances	MH
10 03 24	solid wastes from gas treatment other than those mentioned in 10 03 23	MNH
10 03 25*	sludges and filter cakes from gas treatment containing hazardous substances	MH
10 03 26	sludges and filter cakes from gas treatment other than those mentioned in 10 03 25	MNH
10 03 27*	wastes from cooling-water treatment containing oil	MH
10 03 28	wastes from cooling-water treatment other than those mentioned in 10 03 27	MNH
10 03 29*	wastes from treatment of salt slags and black drosses containing hazardous substances	MH
10 03 30	wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29	MNH
10 03 99	wastes not otherwise specified	ANH
10 04	wastes from lead thermal metallurgy	
10 04 01*	slags from primary and secondary production	AH
10 04 02*	dross and skimmings from primary and secondary production	AH
10 04 03*	calcium arsenate	AH
10 04 04*	flue-gas dust	AH
10 04 05*	other particulates and dust	AH
10 04 06*	solid wastes from gas treatment	AH
10 04 07*	sludges and filter cakes from gas treatment	AH
10 04 09*	wastes from cooling-water treatment containing oil	MH
10 04 10	wastes from cooling-water treatment other than those mentioned in 10 04 09	MNH
10 04 99	wastes not otherwise specified	ANH
10 05	wastes from zinc thermal metallurgy	
10 05 01	slags from primary and secondary production	ANH
10 05 03*	flue-gas dust	AH
10 05 04	other particulates and dust	ANH
10 05 05*	solid waste from gas treatment	AH
10 05 06*	sludges and filter cakes from gas treatment	AH
10 05 08*	wastes from cooling-water treatment containing oil	MH
10 05 09	wastes from cooling-water treatment other than those mentioned in 10 05 08	MNH
10 05 10*	dross and skimmings that are flammable or emit, upon contact with water, flammable gases in hazardous quantities	MH ^B
10 05 11	dross and skimmings other than those mentioned in 10 05 10	MNH ^B
10 05 99	wastes not otherwise specified	ANH
10 06	wastes from copper thermal metallurgy	
10 06 01	slags from primary and secondary production	ANH
10 06 02	dross and skimmings from primary and secondary production	ANH
10 06 03*	flue-gas dust	AH
10 06 04	other particulates and dust	ANH
10 06 06*	solid wastes from gas treatment	AH
10 06 07*	sludges and filter cakes from gas treatment	AH
10 06 09*	wastes from cooling-water treatment containing oil	MH
10 06 10	wastes from cooling-water treatment other than those mentioned in 10 06 09	MNH

10 06 99	wastes not otherwise specified	ANH
10 07	wastes from silver, gold and platinum thermal metallurgy	
10 07 01	slags from primary and secondary production	ANH
10 07 02	dross and skimmings from primary and secondary production	ANH
10 07 03	solid wastes from gas treatment	ANH
10 07 04	other particulates and dust	ANH
10 07 05	sludges and filter cakes from gas treatment	ANH
10 07 07*	wastes from cooling-water treatment containing oil	MH
10 07 08	wastes from cooling-water treatment other than those mentioned in 10 07 07	MNH
10 07 99	wastes not otherwise specified	ANH
10 08	wastes from other non-ferrous thermal metallurgy	
10 08 04	particulates and dust	ANH
10 08 08*	salt slag from primary and secondary production	AH
10 08 09	other slags	ANH
10 08 10*	dross and skimmings that are flammable or emit, upon contact with water, flammable gases in hazardous quantities	MH ^B
10 08 11	dross and skimmings other than those mentioned in 10 08 10	MNH ^B
10 08 12*	tar-containing wastes from anode manufacture	MH ^B
10 08 13	carbon-containing wastes from anode manufacture other than those mentioned in 10 08 12	MNH ^B
10 08 14	anode scrap	ANH
10 08 15*	flue-gas dust containing hazardous substances	MH
10 08 16	flue-gas dust other than those mentioned in 10 08 15	MNH
10 08 17*	sludges and filter cakes from flue-gas treatment containing hazardous substances	MH
10 08 18	sludges and filter cakes from flue-gas treatment other than those mentioned in 10 08 17	MNH
10 08 19*	wastes from cooling-water treatment containing oil	MH
10 08 20	wastes from cooling-water treatment other than those mentioned in 10 08 19	MNH
10 08 99	wastes not otherwise specified	ANH
10 09	wastes from casting of ferrous pieces	
10 09 03	furnace slag	ANH
10 09 05*	casting cores and moulds which have not undergone pouring containing hazardous substances	MH
10 09 06	casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05	MNH
10 09 07*	casting cores and moulds which have undergone pouring containing hazardous substances	MH
10 09 08	casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07	MNH
10 09 09*	flue-gas dust containing hazardous substances	MH
10 09 10	flue-gas dust other than those mentioned in 10 09 09	MNH
10 09 11*	other particulates containing hazardous substances	MH
10 09 12	other particulates other than those mentioned in 10 09 11	MNH
10 09 13*	waste binders containing hazardous substances	MH
10 09 14	waste binders other than those mentioned in 10 09 13	MNH
10 09 15*	waste crack-indicating agent containing hazardous substances	MH
10 09 16	waste crack-indicating agent other than those mentioned in 10 09 15	MNH
10 09 99	wastes not otherwise specified	ANH
10 10	wastes from casting of non-ferrous pieces	
10 10 03	furnace slag	ANH

10 10 05*	casting cores and moulds which have not undergone pouring, containing hazardous substances	MH
10 10 06	casting cores and moulds which have not undergone pouring, other than those mentioned in 10 10 05	MNH
10 10 07*	casting cores and moulds which have undergone pouring, containing hazardous substances	MH
10 10 08	casting cores and moulds which have undergone pouring, other than those mentioned in 10 10 07	MNH
10 10 09*	flue-gas dust containing hazardous substances	MH
10 10 10	flue-gas dust other than those mentioned in 10 10 09	MNH
10 10 11*	other particulates containing hazardous substances	MH
10 10 12	other particulates other than those mentioned in 10 10 11	MNH
10 10 13*	waste binders containing hazardous substances	MH
10 10 14	waste binders other than those mentioned in 10 10 13	MNH
10 10 15*	waste crack-indicating agent containing hazardous substances	MH
10 10 16	waste crack-indicating agent other than those mentioned in 10 10 15	MNH
10 10 99	wastes not otherwise specified	ANH
10 11	wastes from manufacture of glass and glass products	
10 11 03	waste glass-based fibrous materials	ANH
10 11 05	particulates and dust	ANH
10 11 09*	waste preparation mixture before thermal processing, containing hazardous substances	MH
10 11 10	waste preparation mixture before thermal processing, other than those mentioned in 10 11 09	MNH
10 11 11*	waste glass in small particles and glass powder containing heavy metals (for example from cathode ray tubes)	MH
10 11 12	waste glass other than those mentioned in 10 11 11	MNH
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
10 11 15*	solid wastes from flue-gas treatment containing hazardous substances	MH
10 11 16	solid wastes from flue-gas treatment other than those mentioned in 10 11 15	MNH
10 11 17*	sludges and filter cakes from flue-gas treatment containing hazardous substances	MH
10 11 18	sludges and filter cakes from flue-gas treatment other than those mentioned in 10 11 17	MNH
10 11 19*	solid wastes from on-site effluent treatment containing hazardous substances	MH
10 11 20	solid wastes from on-site effluent treatment other than those mentioned in 10 11 19	MNH
10 11 99	wastes not otherwise specified	ANH
10 12	wastes from manufacture of ceramic goods, bricks, tiles and construction products	
10 12 01	waste preparation mixture before thermal processing	ANH
10 12 03	particulates and dust	ANH
10 12 05	sludges and filter cakes from gas treatment	ANH
10 12 06	discarded moulds	ANH
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)	ANH
10 12 09*	solid wastes from gas treatment containing hazardous substances	MH
10 12 10	solid wastes from gas treatment other than those mentioned in 10 12 09	MNH

10 12 11*	wastes from glazing containing heavy metals	MH
10 12 12	wastes from glazing other than those mentioned in 10 12 11	MNH
10 12 13	sludge from on-site effluent treatment	ANH
10 12 99	wastes not otherwise specified	ANH
10 13	wastes from manufacture of cement, lime and plaster and articles and products made from them	
10 13 01	waste preparation mixture before thermal processing	ANH
10 13 04	wastes from calcination and hydration of lime	ANH
10 13 06	particulates and dust (except 10 13 12 and 10 13 13)	MNH
10 13 07	sludges and filter cakes from gas treatment	ANH
10 13 09*	wastes from asbestos-cement manufacture containing asbestos	MH
10 13 10	wastes from asbestos-cement manufacture other than those mentioned in 10 13 09	MNH
10 13 11	wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10	MNH
10 13 12*	solid wastes from gas treatment containing hazardous substances	MH
10 13 13	solid wastes from gas treatment other than those mentioned in 10 13 12	MNH
10 13 14	waste concrete and concrete sludge	ANH
10 13 99	wastes not otherwise specified	ANH
10 14	waste from crematoria	
10 14 01*	waste from gas cleaning containing mercury	AH ^B
11	WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY	
11 01	wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)	
11 01 05*	pickling acids	AH
11 01 06*	acids not otherwise specified	AH
11 01 07*	pickling bases	AH
11 01 08*	phosphatising sludges	AH
11 01 09*	sludges and filter cakes containing hazardous substances	MH
11 01 10	sludges and filter cakes other than those mentioned in 11 01 09	MNH
11 01 11*	aqueous rinsing liquids containing hazardous substances	MH
11 01 12	aqueous rinsing liquids other than those mentioned in 11 01 11	MNH
11 01 13*	degreasing wastes containing hazardous substances	MH
11 01 14	degreasing wastes other than those mentioned in 11 01 13	MNH
11 01 15*	eluate and sludges from membrane systems or ion exchange systems containing hazardous substances	AH ^B
11 01 16*	saturated or spent ion exchange resins	AH
11 01 98*	other wastes containing hazardous substances	MH ^A
11 01 99	wastes not otherwise specified	MNH
11 02	wastes from non-ferrous hydrometallurgical processes	
11 02 02*	sludges from zinc hydrometallurgy (including jarosite, goethite)	AH
11 02 03	wastes from the production of anodes for aqueous electrolytical processes	ANH
11 02 05*	wastes from copper hydrometallurgical processes containing hazardous substances	MH
11 02 06	wastes from copper hydrometallurgical processes other than those mentioned in 11 02 05	MNH
11 02 07*	other wastes containing hazardous substances	MH ^A
11 02 99	wastes not otherwise specified	MNH

11 03	sludges and solids from tempering processes	
11 03 01*	wastes containing cyanide	AH ^B
11 03 02*	other wastes	AH
11 05	wastes from hot galvanising processes	
11 05 01	hard zinc	ANH
11 05 02	zinc ash	ANH
11 05 03*	solid wastes from gas treatment	AH
11 05 04*	spent flux	AH
11 05 99	wastes not otherwise specified	ANH
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 01	ferrous metal filings and turnings	ANH
12 01 02	ferrous metal dust and particles	ANH
12 01 03	non-ferrous metal filings and turnings	ANH
12 01 04	non-ferrous metal dust and particles	ANH
12 01 05	plastics shavings and turnings	ANH
12 01 06*	mineral-based machining oils containing halogens (except emulsions and solutions)	AH
12 01 07*	mineral-based machining oils free of halogens (except emulsions and solutions)	AH
12 01 08*	machining emulsions and solutions containing halogens	AH
12 01 09*	machining emulsions and solutions free of halogens	AH
12 01 10*	synthetic machining oils	AH
12 01 12*	spent waxes and fats	AH
12 01 13	welding wastes	ANH
12 01 14*	machining sludges containing hazardous substances	MH
12 01 15	machining sludges other than those mentioned in 12 01 14	MNH
12 01 16*	waste blasting material containing hazardous substances	MH
12 01 17	waste blasting material other than those mentioned in 12 01 16	MNH
12 01 18*	metal sludge (grinding, honing and lapping sludge) containing oil	AH ^B
12 01 19*	readily biodegradable machining oil	AH
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
12 01 99	wastes not otherwise specified	ANH ^B
12 03	wastes from water and steam degreasing processes (except 11)	
12 03 01*	aqueous washing liquids	AH
12 03 02*	steam degreasing wastes	AH
13	OIL WASTES AND WASTES OF LIQUID FUELS (except edible oils, and those in chapters 05, 12 and 19)	
13 01	waste hydraulic oils	
13 01 01*	hydraulic oils, containing PCBs	AH ^B
13 01 04*	chlorinated emulsions	AH
13 01 05*	non-chlorinated emulsions	AH
13 01 09*	mineral-based chlorinated hydraulic oils	AH
13 01 10*	mineral based non-chlorinated hydraulic oils	AH
13 01 11*	synthetic hydraulic oils	AH
13 01 12*	readily biodegradable hydraulic oils	AH
13 01 13*	other hydraulic oils	AH

13 02	waste engine, gear and lubricating oils	
13 02 04*	mineral-based chlorinated engine, gear and lubricating oils	AH
13 02 05*	mineral-based non-chlorinated engine, gear and lubricating oils	AH
13 02 06*	synthetic engine, gear and lubricating oils	AH
13 02 07*	readily biodegradable engine, gear and lubricating oils	AH
13 02 08*	other engine, gear and lubricating oils	AH
13 03	waste insulating and heat transmission oils	
13 03 01*	insulating or heat transmission oils containing PCBs	AH^B
13 03 06*	mineral-based chlorinated insulating and heat transmission oils other than those mentioned in 13 03 01	AH
13 03 07*	mineral-based non-chlorinated insulating and heat transmission oils	AH
13 03 08*	synthetic insulating and heat transmission oils	AH
13 03 09*	readily biodegradable insulating and heat transmission oils	AH
13 03 10*	other insulating and heat transmission oils	AH
13 04	bilge oils	
13 04 01*	bilge oils from inland navigation	AH
13 04 02*	bilge oils from jetty sewers	AH
13 04 03*	bilge oils from other navigation	AH
13 05	oil/water separator contents	
13 05 01*	solids from grit chambers and oil/water separators	AH
13 05 02*	sludges from oil/water separators	AH
13 05 03*	interceptor sludges	AH
13 05 06*	oil from oil/water separators	AH
13 05 07*	oily water from oil/water separators	AH
13 05 08*	mixtures of wastes from grit chambers and oil/water separators	AH
13 07	wastes of liquid fuels	
13 07 01*	fuel oil and diesel	AH
13 07 02*	Petrol	AH
13 07 03*	other fuels (including mixtures)	AH
13 08	oil wastes not otherwise specified	
13 08 01*	desalter sludges or emulsions	AH
13 08 02*	other emulsions	AH
13 08 99*	wastes not otherwise specified	AH
14	WASTE ORGANIC SOLVENTS, REFRIGERANTS AND PROPELLANTS (except 07 and 08)	
14 06	waste organic solvents, refrigerants and foam/aerosol propellants	
14 06 01*	chlorofluorocarbons, HCFC, HFC	AH
14 06 02*	other halogenated solvents and solvent mixtures	AH
14 06 03*	other solvents and solvent mixtures	AH
14 06 04*	sludges or solid wastes containing halogenated solvents	AH^B
14 06 05*	sludges or solid wastes containing other solvents	AH^B
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED	
15 01	packaging (including separately collected municipal packaging waste)	
15 01 01	paper and cardboard packaging	MNH^B
15 01 02	plastic packaging	MNH^B
15 01 03	wooden packaging	MNH^B
15 01 04	metallic packaging	MNH^B
15 01 05	composite packaging	MNH^B

15 01 06	mixed packaging	MNH ^B
15 01 07	glass packaging	MNH ^B
15 01 09	textile packaging	MNH ^B
15 01 10*	packaging containing residues of or contaminated by hazardous substances	MH ^B
15 01 11*	metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers	MH ^B
15 02	absorbents, filter materials, wiping cloths and protective clothing	
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
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST	
16 01	end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)	
16 01 03	end-of-life tyres	ANH
16 01 04*	end-of-life vehicles	AH ^A
16 01 06	end-of-life vehicles, containing neither liquids nor other hazardous components	ANH ^A
16 01 07*	oil filters	AH
16 01 08*	components containing mercury	MH ^A
16 01 09*	components containing PCBs	MH ^A
16 01 10*	explosive components (for example air bags)	AH
16 01 11*	brake pads containing asbestos	MH
16 01 12	brake pads other than those mentioned in 16 01 11	MNH
16 01 13*	brake fluids	AH
16 01 14*	antifreeze fluids containing hazardous substances	MH
16 01 15	antifreeze fluids other than those mentioned in 16 01 14	MNH
16 01 16	tanks for liquefied gas	ANH
16 01 17	ferrous metal	ANH
16 01 18	non-ferrous metal	ANH
16 01 19	Plastic	ANH
16 01 20	Glass	ANH
16 01 21*	hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14	AH
16 01 22	components not otherwise specified	MNH
16 01 99	wastes not otherwise specified	ANH
16 02	wastes from electrical and electronic equipment	
16 02 09*	transformers and capacitors containing PCBs	MH ^B
16 02 10*	discarded equipment containing or contaminated by PCBs other than those mentioned in 16 02 09	MH ^B
16 02 11*	discarded equipment containing chlorofluorocarbons, HCFC, HFC	MH ^B
16 02 12*	discarded equipment containing free asbestos	MH ^B
16 02 13*	discarded equipment containing hazardous components (3) other than those mentioned in 16 02 09 to 16 02 12	MH ^B
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	MNH ^B
16 02 15*	hazardous components removed from discarded equipment	MH ^B
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15	MNH ^B
16 03	off-specification batches and unused products	

16 03 03*	inorganic wastes containing hazardous substances	MH
16 03 04	inorganic wastes other than those mentioned in 16 03 03	MNH
16 03 05*	organic wastes containing hazardous substances	MH
16 03 06	organic wastes other than those mentioned in 16 03 05	MNH
16 03 07* ⁶	metallic mercury	AH
16 04	waste explosives	
16 04 01*	waste ammunition	AH
16 04 02*	fireworks wastes	AH
16 04 03*	other waste explosives	AH
16 05	gases in pressure containers and discarded chemicals	
16 05 04*	gases in pressure containers (including halons) containing hazardous substances	MH
16 05 05	gases in pressure containers other than those mentioned in 16 05 04	MNH
16 05 06*	laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals	MH
16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances	MH
16 05 08*	discarded organic chemicals consisting of or containing hazardous substances	MH
16 05 09	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08	MNH
16 06	batteries and accumulators	
16 06 01*	lead batteries	AH
16 06 02*	Ni-Cd batteries	AH
16 06 03*	mercury-containing batteries	AH
16 06 04	alkaline batteries (except 16 06 03)	ANH
16 06 05	other batteries and accumulators	ANH
16 06 06*	separately collected electrolyte from batteries and accumulators	AH
16 07	wastes from transport tank, storage tank and barrel cleaning (except 05 and 13)	
16 07 08*	wastes containing oil	AH ^B
16 07 09*	wastes containing other hazardous substances	AH ^B
16 07 99	wastes not otherwise specified	ANH ^B
16 08	spent catalysts	
16 08 01	spent catalysts containing gold, silver, rhenium, rhodium, palladium, iridium or platinum (except 16 08 07)	MNH
16 08 02*	spent catalysts containing hazardous transition metals or hazardous transition metal compounds	MH
16 08 03	spent catalysts containing transition metals or transition metal compounds not otherwise specified	MNH
16 08 04	spent fluid catalytic cracking catalysts (except 16 08 07)	MNH
16 08 05*	spent catalysts containing phosphoric acid	AH ^B
16 08 06*	spent liquids used as catalysts	AH
16 08 07*	spent catalysts contaminated with hazardous substances	MH
16 09	oxidising substances	
16 09 01*	permanganates, for example potassium permanganate	AH
16 09 02*	chromates, for example potassium chromate, potassium or sodium dichromate	AH
16 09 03*	peroxides, for example hydrogen peroxide	AH
16 09 04*	oxidising substances, not otherwise specified	AH

⁶ Entry newly added by Decision 2014/955/EU

16 10	aqueous liquid wastes destined for off-site treatment	
16 10 01*	aqueous liquid wastes containing hazardous substances	MH
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01	MNH
16 10 03*	aqueous concentrates containing hazardous substances	MH
16 10 04	aqueous concentrates other than those mentioned in 16 10 03	MNH
16 11	waste linings and refractories	
16 11 01*	carbon-based linings and refractories from metallurgical processes containing hazardous substances	MH
16 11 02	carbon-based linings and refractories from metallurgical processes others than those mentioned in 16 11 01	MNH
16 11 03*	other linings and refractories from metallurgical processes containing hazardous substances	MH
16 11 04	other linings and refractories from metallurgical processes other than those mentioned in 16 11 03	MNH
16 11 05*	linings and refractories from non-metallurgical processes containing hazardous substances	MH
16 11 06	linings and refractories from non-metallurgical processes others than those mentioned in 16 11 05	MNH
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	
17 01	concrete, bricks, tiles and ceramics	
17 01 01	Concrete	MNH^A
17 01 02	Bricks	MNH^A
17 01 03	tiles and ceramics	MNH^A
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances	MH
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	MNH
17 02	wood, glass and plastic	
17 02 01	Wood	MNH
17 02 02	Glass	MNH
17 02 03	Plastic	MNH
17 02 04*	glass, plastic and wood containing or contaminated with hazardous substances	MH
17 03	bituminous mixtures, coal tar and tarred products	
17 03 01*	bituminous mixtures containing coal tar	MH
17 03 02	bituminous mixtures other than those mentioned in 17 03 01	MNH
17 03 03*	coal tar and tarred products	AH
17 04	metals (including their alloys)	
17 04 01	copper, bronze, brass	MNH^A
17 04 02	Aluminium	MNH^A
17 04 03	Lead	MNH^A
17 04 04	Zinc	MNH^A
17 04 05	iron and steel	MNH^A
17 04 06	Tin	MNH^A
17 04 07	mixed metals	MNH^A
17 04 09*	metal waste contaminated with hazardous substances	MH^A
17 04 10*	cables containing oil, coal tar and other hazardous substances	MH
17 04 11	cables other than those mentioned in 17 04 10	MNH
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 03*	soil and stones containing hazardous substances	MH
17 05 04	soil and stones other than those mentioned in 17 05 03	MNH
17 05 05*	dredging spoil containing hazardous substances	MH

17 05 06	dredging spoil other than those mentioned in 17 05 05	MNH
17 05 07*	track ballast containing hazardous substances	MH
17 05 08	track ballast other than those mentioned in 17 05 07	MNH
17 06	insulation materials and asbestos-containing construction materials	
17 06 01*	insulation materials containing asbestos	MH
17 06 03*	other insulation materials consisting of or containing hazardous substances	MH
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03	MNH
17 06 05*	construction materials containing asbestos	AH^B
17 08	gypsum-based construction material	
17 08 01*	gypsum-based construction materials contaminated with hazardous substances	MH
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01	MNH
17 09	other construction and demolition wastes	
17 09 01*	construction and demolition wastes containing mercury	MH
17 09 02*	construction and demolition wastes containing PCB (for example PCB-containing sealants, PCB-containing resin-based floorings, PCB-containing sealed glazing units, PCB-containing capacitors)	MH
17 09 03*	other construction and demolition wastes (including mixed wastes) containing hazardous substances	MH
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	MNH
18	WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)	
18 01	wastes from natal care, diagnosis, treatment or prevention of disease in humans	
18 01 01	sharps (except 18 01 03)	MNH^B
18 01 02	body parts and organs including blood bags and blood preserves (except 18 01 03)	MNH^B
18 01 03*	wastes whose collection and disposal is subject to special requirements in order to prevent infection	MH^B
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)	MNH^B
18 01 06*	chemicals consisting of or containing hazardous substances	MH
18 01 07	chemicals other than those mentioned in 18 01 06	MNH
18 01 08*	cytotoxic and cytostatic medicines	MH^B
18 01 09	medicines other than those mentioned in 18 01 08	MNH^B
18 01 10*	amalgam waste from dental care	AH
18 02	wastes from research, diagnosis, treatment or prevention of disease involving animals	
18 02 01	sharps (except 18 02 02)	MNH^B
18 02 02*	wastes whose collection and disposal is subject to special requirements in order to prevent infection	MH^B
18 02 03	wastes whose collection and disposal is not subject to special requirements in order to prevent infection	MNH^B
18 02 05*	chemicals consisting of or containing hazardous substances	MH
18 02 06	chemicals other than those mentioned in 18 02 05	MNH
18 02 07*	cytotoxic and cytostatic medicines	MH^B
18 02 08	medicines other than those mentioned in 18 02 07	MNH^B
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	
19 01	wastes from incineration or pyrolysis of waste	
19 01 02	ferrous materials removed from bottom ash	ANH
19 01 05*	filter cake from gas treatment	AH
19 01 06*	aqueous liquid wastes from gas treatment and other aqueous liquid wastes	AH
19 01 07*	solid wastes from gas treatment	AH
19 01 10*	spent activated carbon from flue-gas treatment	AH
19 01 11*	bottom ash and slag containing hazardous substances	MH
19 01 12	bottom ash and slag other than those mentioned in 19 01 11	MNH
19 01 13*	fly ash containing hazardous substances	MH
19 01 14	fly ash other than those mentioned in 19 01 13	MNH
19 01 15*	boiler dust containing hazardous substances	MH
19 01 16	boiler dust other than those mentioned in 19 01 15	MNH
19 01 17*	pyrolysis wastes containing hazardous substances	MH
19 01 18	pyrolysis wastes other than those mentioned in 19 01 17	MNH
19 01 19	sands from fluidised beds	ANH
19 01 99	wastes not otherwise specified	ANH
19 02	wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)	
19 02 03	premixed wastes composed only of non-hazardous wastes	ANH
19 02 04*	premixed wastes composed of at least one hazardous waste	AH
19 02 05*	sludges from physico/chemical treatment containing hazardous substances	MH
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05	MNH
19 02 07*	oil and concentrates from separation	AH
19 02 08*	liquid combustible wastes containing hazardous substances	MH
19 02 09*	solid combustible wastes containing hazardous substances	MH
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09	MNH
19 02 11*	other wastes containing hazardous substances	AH^B
19 02 99	wastes not otherwise specified	ANH
19 03	stabilised/solidified wastes	
19 03 04*	wastes marked as hazardous, partly stabilised other than 19 03 08	MH^B
19 03 05	stabilised wastes other than those mentioned in 19 03 04	MNH^B
19 03 06*	wastes marked as hazardous, solidified	MH^B
19 03 07	solidified wastes other than those mentioned in 19 03 06	MNH^B
19 03 08* ⁷	partly stabilised mercury	AH
19 04	vitriified waste and wastes from vitrification	
19 04 01	vitriified waste	ANH
19 04 02*	fly ash and other flue-gas treatment wastes	AH
19 04 03*	non-vitriified solid phase	AH
19 04 04	aqueous liquid wastes from vitriified waste tempering	ANH
19 05	wastes from aerobic treatment of solid wastes	
19 05 01	non-composted fraction of municipal and similar wastes	ANH
19 05 02	non-composted fraction of animal and vegetable waste	ANH
19 05 03	off-specification compost	ANH
19 05 99	wastes not otherwise specified	ANH

⁷ Entry newly added by Decision 2014/955/EU

19 06	wastes from anaerobic treatment of waste	
19 06 03	liquor from anaerobic treatment of municipal waste	ANH
19 06 04	digestate from anaerobic treatment of municipal waste	ANH
19 06 05	liquor from anaerobic treatment of animal and vegetable waste	ANH
19 06 06	digestate from anaerobic treatment of animal and vegetable waste	ANH
19 06 99	wastes not otherwise specified	ANH
19 07	landfill leachate	
19 07 02*	landfill leachate containing hazardous substances	MH
19 07 03	landfill leachate other than those mentioned in 19 07 02	MNH
19 08	wastes from waste water treatment plants not otherwise specified	
19 08 01	Screenings	ANH
19 08 02	waste from desanding	ANH
19 08 05	sludges from treatment of urban waste water	ANH
19 08 06*	saturated or spent ion exchange resins	AH
19 08 07*	solutions and sludges from regeneration of ion exchangers	AH
19 08 08*	membrane system waste containing heavy metals	MH
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats	MNH^B
19 08 10*	grease and oil mixture from oil/water separation other than those mentioned in 19 08 09	MH^B
19 08 11*	sludges containing hazardous substances from biological treatment of industrial waste water	MH
19 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11	MNH
19 08 13*	sludges containing hazardous substances from other treatment of industrial waste water	MH
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13	MNH
19 08 99	wastes not otherwise specified	MNH
19 09	wastes from the preparation of water intended for human consumption or water for industrial use	
19 09 01	solid waste from primary filtration and screenings	ANH
19 09 02	sludges from water clarification	ANH
19 09 03	sludges from decarbonation	ANH
19 09 04	spent activated carbon	ANH
19 09 05	saturated or spent ion exchange resins	ANH
19 09 06	solutions and sludges from regeneration of ion exchangers	ANH
19 09 99	wastes not otherwise specified	ANH
19 10	wastes from shredding of metal-containing wastes	
19 10 01	iron and steel waste	ANH
19 10 02	non-ferrous waste	ANH
19 10 03*	fluff-light fraction and dust containing hazardous substances	MH
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03	MNH
19 10 05*	other fractions containing hazardous substances	MH
19 10 06	other fractions other than those mentioned in 19 10 05	MNH
19 11	wastes from oil regeneration	
19 11 01*	spent filter clays	AH
19 11 02*	acid tars	AH
19 11 03*	aqueous liquid wastes	AH
19 11 04*	wastes from cleaning of fuel with bases	AH
19 11 05*	sludges from on-site effluent treatment containing hazardous substances	MH

19 11 06	sludges from on-site effluent treatment other than those mentioned in 19 11 05	MNH
19 11 07*	wastes from flue-gas cleaning	AH
19 11 99	wastes not otherwise specified	ANH
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified	
19 12 01	paper and cardboard	ANH
19 12 02	ferrous metal	ANH
19 12 03	non-ferrous metal	ANH
19 12 04	plastic and rubber	ANH
19 12 05	Glass	ANH
19 12 06*	wood containing hazardous substances	MH
19 12 07	wood other than that mentioned in 19 12 06	MNH
19 12 08	Textiles	ANH
19 12 09	minerals (for example sand, stones)	ANH
19 12 10	combustible waste (refuse derived fuel)	ANH
19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances	MH
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	MNH
19 13	wastes from soil and groundwater remediation	
19 13 01*	solid wastes from soil remediation containing hazardous substances	MH
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01	MNH
19 13 03*	sludges from soil remediation containing hazardous substances	MH
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03	MNH
19 13 05*	sludges from groundwater remediation containing hazardous substances	MH
19 13 06	sludges from groundwater remediation other than those mentioned in 19 13 05	MNH
19 13 07*	aqueous liquid wastes and aqueous concentrates from groundwater remediation containing hazardous substances	MH
19 13 08	aqueous liquid wastes and aqueous concentrates from groundwater remediation other than those mentioned in 19 13 07	MNH
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS	
20 01	separately collected fractions (except 15 01)	
20 01 01	paper and cardboard	ANH
20 01 02	Glass	ANH
20 01 08	biodegradable kitchen and canteen waste	ANH
20 01 10	Clothes	ANH
20 01 11	Textiles	ANH
20 01 13*	Solvents	AH
20 01 14*	Acids	AH
20 01 15*	Alkalines	AH
20 01 17*	Photochemicals	AH
20 01 19*	Pesticides	AH
20 01 21*	fluorescent tubes and other mercury-containing waste	AH^A
20 01 23*	discarded equipment containing chlorofluorocarbons	AH^A
20 01 25	edible oil and fat	MNH^B
20 01 26*	oil and fat other than those mentioned in 20 01 25	MH^B

20 01 27*	paint, inks, adhesives and resins containing hazardous substances	MH
20 01 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27	MNH
20 01 29*	detergents containing hazardous substances	MH
20 01 30	detergents other than those mentioned in 20 01 29	MNH
20 01 31*	cytotoxic and cytostatic medicines	MH
20 01 32	medicines other than those mentioned in 20 01 31	MNH ^B
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	MH ^B
20 01 34	batteries and accumulators other than those mentioned in 20 01 33	MNH ^B
20 01 35*	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components (3)	MH ^B
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	MNH ^B
20 01 37*	wood containing hazardous substances	MH
20 01 38	wood other than that mentioned in 20 01 37	MNH
20 01 39	Plastics	ANH
20 01 40	Metals	ANH
20 01 41	wastes from chimney sweeping	ANH
20 01 99	other fractions not otherwise specified	ANH
20 02	garden and park wastes (including cemetery waste)	
20 02 01	biodegradable waste	ANH
20 02 02	soil and stones	ANH
20 02 03	other non-biodegradable wastes	ANH
20 03	other municipal wastes	
20 03 01	mixed municipal waste	ANH
20 03 02	waste from markets	ANH
20 03 03	street-cleaning residues	ANH
20 03 04	septic tank sludge	ANH
20 03 06	waste from sewage cleaning	ANH
20 03 07	bulky waste	ANH
20 03 99	municipal wastes not otherwise specified	ANH

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A: For these entries the interpretation in [BMU 2005] differs from the above presented interpretation.

B: For these entries the interpretation in [UK EA 2015] differs from the above presented interpretation.

1185 **A.4. Examples of the classification of complex entries**

1186 This chapter presents additional information and examples providing guidance on
1187 characterisation approaches to be followed for some of the more problematic and
1188 complex entries, in particular packaging waste, waste from electrical and electronic
1189 equipment (WEEE) and end of life vehicles (ELV).

1190 **A.4.1. Packaging waste and contents**

1191 Separately collected packaging waste is to be allocated under sub-chapter 15 01. Such
1192 waste must not be classified under sub-chapter 20 01, as the heading of sub-chapter
1193 20 01 explicitly excludes sub-chapter 15 01. Under sub-chapter 15 01 the following
1194 MNH entries are contained:

15 01 01	paper and cardboard packaging	MNH
15 01 02	plastic packaging	MNH
15 01 03	wooden packaging	MNH
15 01 04	metallic packaging	MNH
15 01 05	composite packaging	MNH
15 01 06	mixed packaging	MNH
15 01 07	glass packaging	MNH
15 01 09	textile packaging	MNH

1195 The following MH entries are provided:

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

1196 Before it is decided which entry for packaging waste is most suitable, one has to
1197 assess whether the waste actually should be classified as packaging waste at all, or
1198 rather be classified according its content. Figure 5 provides a flow chart supporting
1199 this decision. Please note that derogations from the flow chart presented in Figure 5
1200 may be possible, e.g. for mixed packaging from households after considering Member
1201 State specific conventions and approaches. [OVAM 2015] for example states that
1202 mixed packaging waste which is cleaned at a licensed company and thus can be
1203 assumed that no hazardous residues are contained by the packaging waste, can be
1204 classified as non-hazardous.

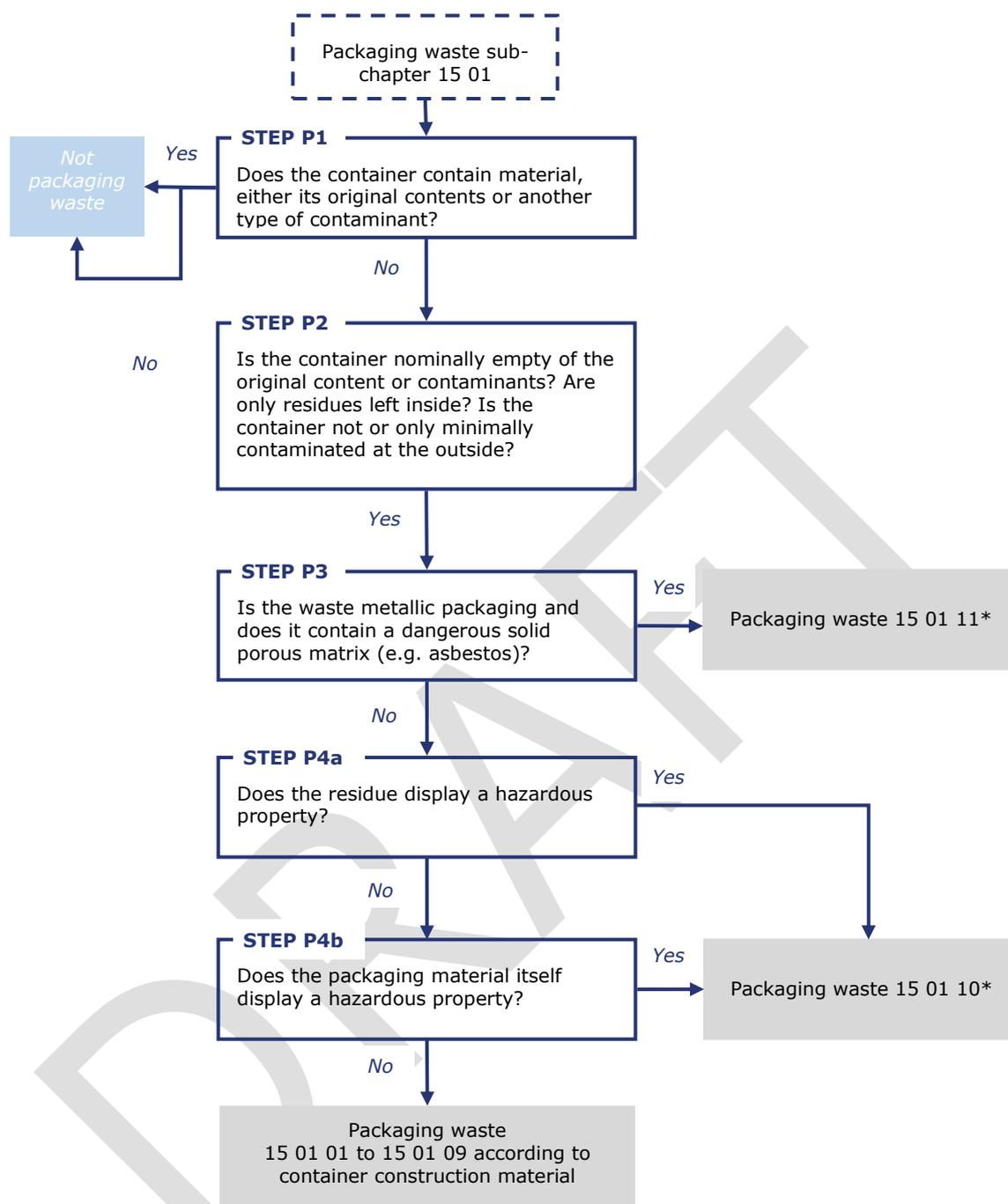


Figure 5: Flow chart for classification of packaging waste based on [UK EA 2015]

In order to allocate the sub-chapter 15 01 it is necessary to determine whether the packaging/container is nominally empty (cf. Step P1 and P2 in Figure 5). It is suggested to understand 'nominally empty' in the sense that the product's contents were 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 to qualify as "nominally empty" and does not prohibit the packaging waste from falling under subchapter 15 01 packaging waste.

1214 To decide upon the question whether packaging is nominally empty, practical
1215 approaches applied in individual Member States can be used. For example in Austria
1216 related to packaging "completely emptying" means proper emptying ("free of trickles"
1217 such as leftover powder, sludge and drops; brush clean, spatula clean) except for
1218 unavoidable residues, without applying additional measures (such as heating). The
1219 term does not include cleaning of containers. A container has been emptied
1220 completely, if in the case of a renewed attempt of emptying, such as inverting the
1221 container no longer drops or solid remains are released.

1222 When the packaging contains residual material that cannot be removed by normal
1223 standards (e.g. due to size of aperture or nature of material), then the waste should
1224 not be classified as packaging waste but as the residual material waste (e.g. half
1225 empty tin of solidified varnish might be classified as 08 01 11*).

1226 In the case that waste containers are washed to remove the contents, further
1227 considerations should be taken to ensure an environmentally sound method is used.

1228 If the packaging is nominally empty, it should be checked if it is metallic packaging
1229 which contains a dangerous solid porous matrix (e.g. asbestos in old fireproof
1230 packaging material), including empty pressure containers (Step P3 in Figure 5). Such
1231 metallic packaging needs to be assigned to code 15 01 11*.

1232 With respect to steps P4a and P4b in Figure 5 it has to be noted that packaging which
1233 is nominally empty but which still can contain small quantities of residues can be
1234 either hazardous because (1) it displays hazardous properties because of the
1235 remaining residues OR because (2) it displays hazardous properties because of the
1236 packaging material itself (of which the packaging is manufactured) because it is
1237 contaminated with hazardous substances from the manufacturing process (e.g. with
1238 impregnating agents, stabilisers, flame retardants, plasticisers, pigments, ...) or the
1239 use phase.

1240 Accordingly, it has to be assessed in Step P4a whether the waste displays hazardous
1241 properties due to the remaining residues and in Step 4b whether the packaging
1242 material itself displays hazardous properties. Calculations whether threshold limits
1243 defined in Annex III to the WFD, based on hazard statement codes, are exceeded,
1244 should be based on the weight of the waste as it is when the classification of the waste
1245 is undertaken (i.e. a comparison would be made between the amount of contained
1246 hazardous substances against the total weight of the nominally empty packaging plus
1247 the leftover residue). If hazardous properties can be related to the residue or to the
1248 packaging material itself, entry 15 01 10* will apply. Otherwise a non-hazardous entry
1249 according the packaging's material needs to be assigned (codes 15 01 01 to 15 01 09)
1250 [UK EA 2015].

1251

1252 **A.4.2. Waste from electrical and electronic equipment (WEEE)**

1253 In the LoW, there are two existing chapters explicitly referring to WEEE:

- 1254 16 wastes not otherwise specified in the list
- 1255 20 municipal wastes (household waste and similar commercial, industrial and
- 1256 institutional wastes) including separately collected fractions

1257 According to the structure presented in paragraph A.1 of this document, chapter 20

1258 takes precedence over chapter 16. In sub-chapter 20 01, separately collected WEEE

1259 from municipal waste can be allocated to the following hazardous entries:

- 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 MH
those mentioned 20 01 21 and 20 01 23 containing
hazardous components

1260 MNH entries are the following ones:

- 20 01 36 discarded electrical and electronic equipment other than MNH
those mentioned in 20 01 21, 20 01 23 and 20 01 35.

1261 If WEEE arises from a commercial/ industrial source and cannot be seen as 'similar

1262 commercial, industrial and institutional waste', it thus cannot be allocated to an entry

1263 of chapter 20. Instead the following MH entries exist in chapter 16:

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

1264 MNH entries are the following ones:

- 16 02 14 discarded equipment other than those mentioned in 16 MNH
02 09 to 16 02 13
- 16 02 16 components removed from discarded equipment other MNH
than those mentioned in 16 02 15

1265 If there are more specific entries for the characterisation of certain fractions of WEEE

1266 in the LoW, those entries shall be used for classification, e.g. batteries and

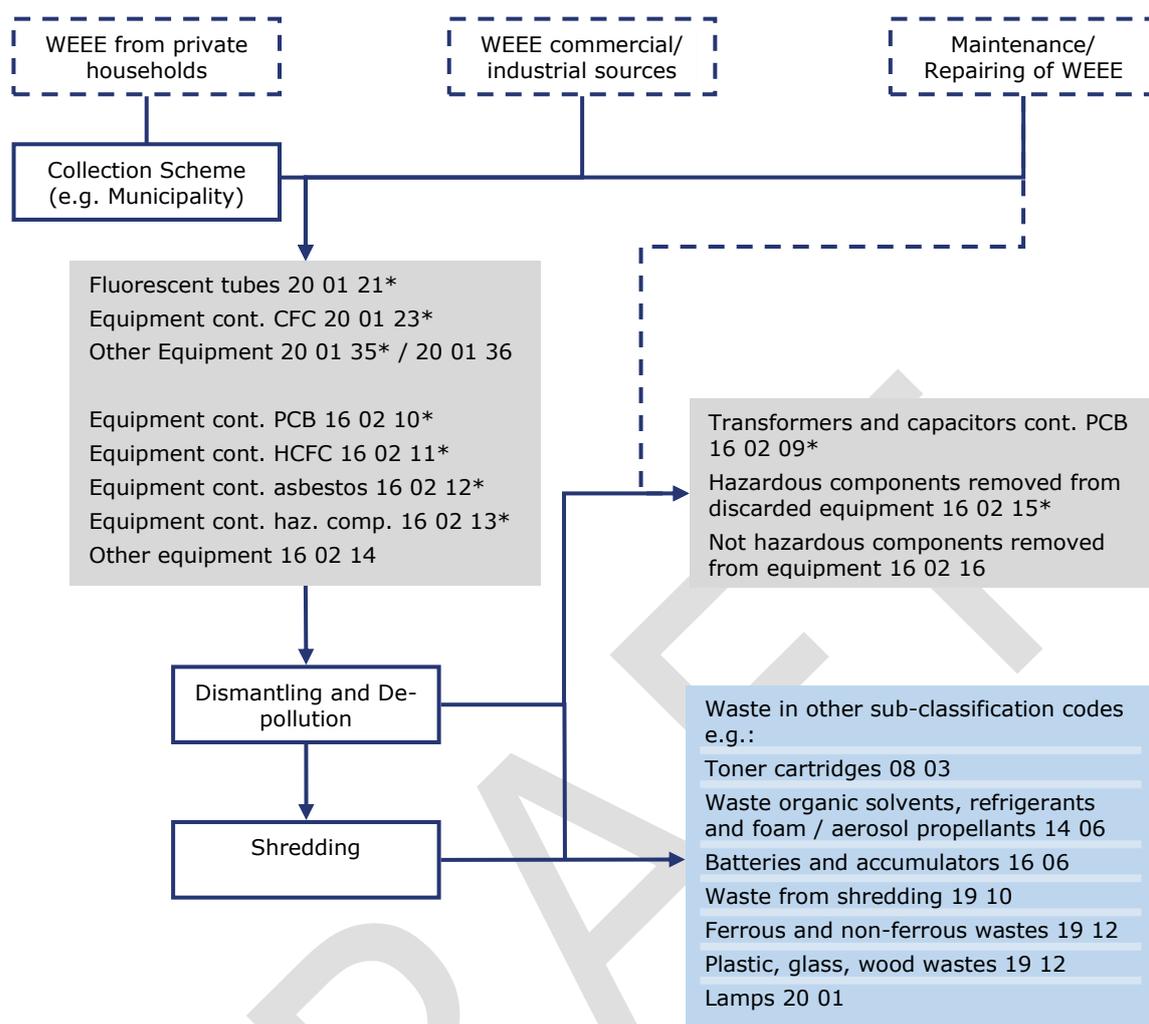
1267 accumulators stemming from WEEE may be allocated to sub-chapter 16 06 (batteries

1268 and accumulators). Additionally, different entries apart from chapters 16 and 20 of the

1269 LoW will have to be used for fractions generated during the treatment process of

1270 WEEE. Further information on treatment steps and resulting fractions thereof can be

1271 found in [BW 2003]. A graphical overview is displayed in Figure 6.



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Figure 6: LoW entries from WEEE treatment adjusted from [IPA 2015] and [BW 2003]

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Please note that the threshold values based on hazard statement codes refer to the state of the waste as it is when the classification of the waste is undertaken (i.e. the state in which it is usually transferred and subsequently managed). For the case of WEEE this might imply that if whole appliances are to be classified, the weight of the appliance has to be considered as basis for the applied concentration limits of hazardous substance. If separated fractions have to be classified (e.g. after selective treatment) the weight of the separated fractions are to be considered as basis for the applied concentration limits. Please refer also to MS specific approaches and conventions.

Labelling and record keeping of WEEE and batteries

Please note that labelling and record keeping obligations stemming from WFD do not apply to separate fractions of hazardous waste produced by households until they are accepted for collection, disposal or recovery by an establishment or an undertaking which has obtained a permit or has been registered in accordance with the WFD. Since collection points established under the WEEE or the Batteries Directive, in accordance with and under the preconditions of the two Directives, are not subject to the registration or permit requirements, the said obligations do not apply to these collection points but only once WEEE or waste batteries are accepted for collection, disposal or recovery at a waste treatment facility.

1284

1285

Box 14: Remark on labelling and record keeping requirements for WEEE and batteries

DRAFT

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A.4.3. End-of-life vehicles (ELV)

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End-of-life vehicles are covered within the LoW in chapter 16 and in particular in sub-chapter 16 01. For whole vehicles two entries are mainly relevant:

1288

16 01 04* end-of-life vehicles AH

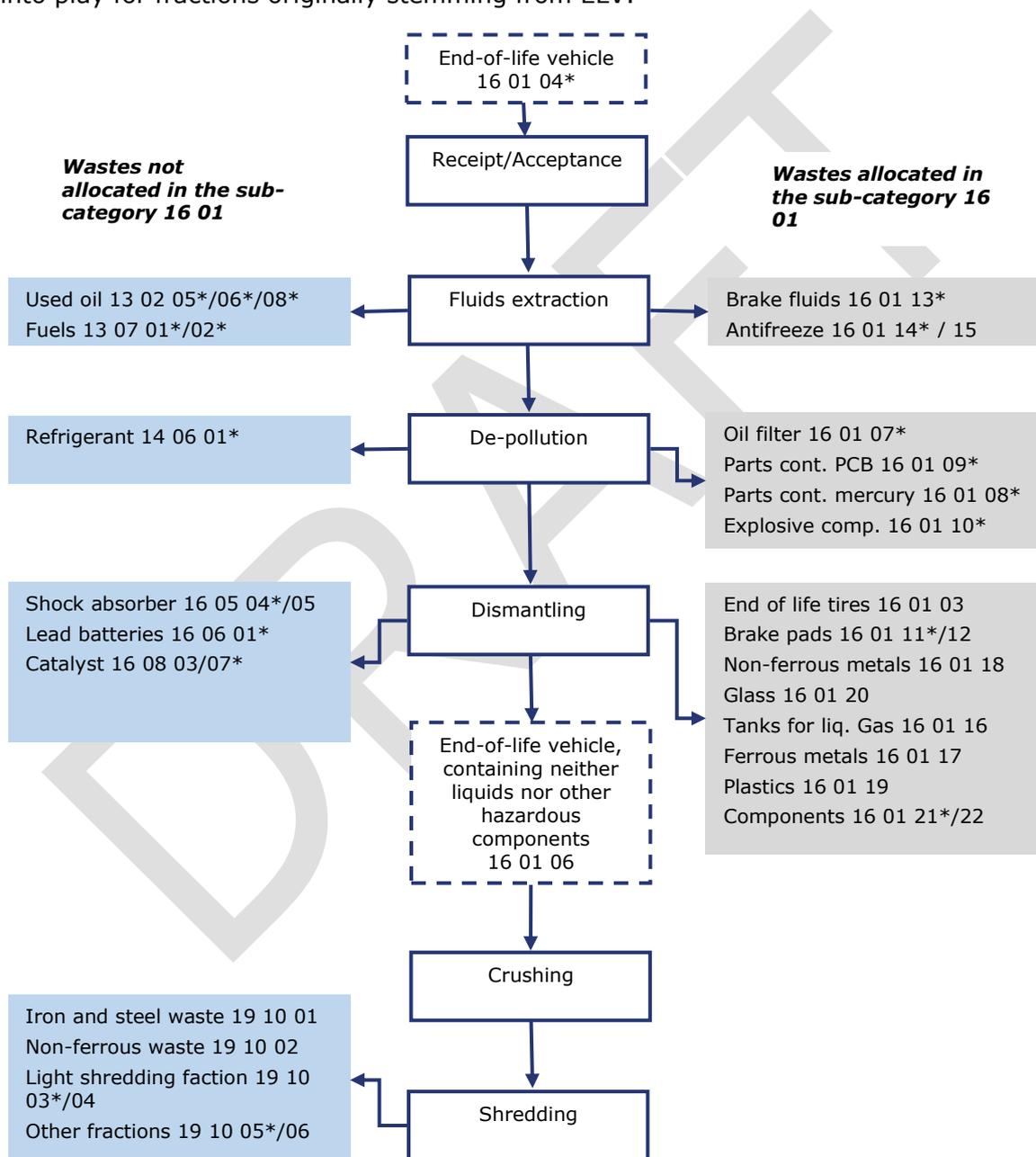
16 01 06 end-of-life vehicles, containing neither liquids nor other hazardous components ANH

1289

Treatment processes within a facility for ELV are described in Figure 7. Depending on the treatment steps, different entries of the LoW (not from sub-chapter 16 01) come into play for fractions originally stemming from ELV.

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Figure 7: LoW entries from ELV treatment adjusted from [IPA 2015]

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A.5. Examples for the assessment of specific constituents of specific waste types

This chapter presents additional information and examples for the assessment of specific constituents of specific waste types. In the following, certain waste types or pollutants will be investigated and difficulties with classification encountered will be explained. Main entries of the LoW used for the classification will be presented. Please note that the described applicable entries will not be exclusive.

Reference can also be made to guidance documents on MS level which may contain further examples, e.g. [UK EA 2015] and [OVAM 2015] present further examples on waste oils and contaminated soils.

A.5.1. Organic constituents and specific chemical compounds

The following example provides general guidance on the classification of waste containing organic ingredients and specific chemical compounds such as PAH (Polycyclic Aromatic Hydrocarbons), BTEX (Benzene, Toluene, Ethylbenzene and Xylene) or other hydrocarbons.

General information

Polycyclic aromatic hydrocarbons (PAH) describe substances (exemplary components: Acenaphtene, Anthracene, Flourene, Pyrene, etc.) that are often found together in groups of two or more [US EPA 2008].

BTEX (acronym for Benzene, Toluene, Ethylbenzene and Xylene) is a group of related volatile organic compounds [ETSA 2015]. In some definitions found in literature it is only referred to BTX, where ethylbenzene is not included.

Hydrocarbons are compounds of hydrogen and carbon in various combinations that are present in petroleum products and natural gas. Some hydrocarbons are major air pollutants, some may be carcinogenic and others contribute to photochemical smog [ETSA 2015].

Main origin

PAHs are created when products like coal, oil, gas, and waste are burned but the combustion process is not complete. Examples are fumes from vehicle exhaust, coal production plants or other facilities burning coal, petroleum, oil or wood. Most PAHs are used to conduct research. However, some PAHs are used to make dyes, plastics, and pesticides. Some are used in medicines [US EPA 2008].

BTEX are made up of naturally-occurring chemicals that are found mainly in petroleum products such as gasolines or naphtha. BTEX can enter the environment from leaking underground storage tanks (UST's), overfills of storage tanks, fuel spills from auto accidents and from landfills.

Benzene can be found in gasoline and in products such as synthetic rubber, plastics, nylon, insecticides, paints, dyes, resins-glues, furniture wax, detergents and cosmetics. Other sources are auto exhaust, industrial emissions and cigarette smoke. Toluene occurs naturally as a component of many petroleum products. Toluene is used as a solvent for paints, coatings, gums, oils and resins. Xylenes are used in gasoline and as a solvent in printing, rubber and leather industries [ATSDR 2014].

Origins of waste containing hydrocarbons are industrial sites and combustion plants, motor vehicles and other gasoline-powered equipment, e.g. aircrafts or construction equipment [ETSA 2015].

Aspects to be considered for waste classification

1341 Table 5 contains hazard statement code(s), hazard class and category codes for
1342 benzene, toluene and xylene-

1343 **Table 5: Hazard Statement Code(s), Hazard Class and Category Code(s) for**
1344 **BTEX according Table 3.1 of Part 3 of Annex VI to the CLP**
1345 **Regulation**

International Chemical Identification	CAS No.	Hazard Statement Code(s)	Hazard Class and Category Code(s)
Benzene	71-43-2	H225 H350 H340 H372 ** H304 H319 H315	Flam. Liq. 2 Carc. 1A Mua. 1B STOT RE 1 Asp. Tox. 1 Eye Irrit. 2 Skin Irrit. 2
Toluene	108-88-3	H225 H361d *** H304 H373 ** H315 H336	Flam. Liq. 2 Repr. 2 Asp. Tox. 1 STOT RE 2 * Skin Irrit. 2 STOT SE 3
Ethylbenzene	100-41-4	H225 H304 H332 H373 (hearing organs)	Flam. Liq. 2 Asp. Tox. 1 Acute Tox. 4 * STOT RE 2
<i>o</i> -xylene	95-47-6	H226	Flam. Liq. 3
<i>p</i> -xylene	106-42-3	H332	Acute Tox. 4 *
<i>m</i> -xylene	108-38-3	H312	Acute Tox. 4 *
Xylene	1330-20-7	H315	Skin Irrit. 2
"According to CLP: An asterisk (*) indicates a minimum classification. Classification can be further refined based on new information. Two asterisks (**) indicate that information about the route of exposure is not conclusive Three asterisks (***) indicate that information for classification for fertility and developmental effects under Directive 67/548/EEC, has been translated only for those effects classified under that Directive."			

1346

1347 Regarding organic compounds, sum parameters like PAH, BTEX and hydrocarbons (the
1348 latter sometimes referred also as "mineral oils" or total petroleum hydrocarbons (TPH)
1349 are often applied in practical waste analysis. The CLP Regulation does not recognise
1350 these as group entries for which a classification could be assigned. However, MS level,

1351 specific conventions may exist for the classification of waste as hazardous by using the
1352 above presented sum parameters.

1353 The LoW specifies that "where applicable the following notes included in Annex VI to
1354 Regulation (EC) No 1272/2008 may be taken into account when establishing the
1355 hazardous properties of wastes: 1.1.3.1. Notes relating to the identification,
1356 classification and labelling of substances: Notes B, D, F, J, L, M, P, Q, R, and U."
1357 Relevant to this respect are notes M and L. Therefore benzo[a]pyrene can be used as
1358 a marker compound representing PAH for carcinogenicity for certain coal tar entries.
1359 For hazard statement code(s), hazard class and category code(s) of benzo[a]pyrene
1360 please refer to Table 6. More information on the usage of PAH and benzo[a]pyrene for
1361 the example of coal tar can be found in chapter A.5.5.

1362 **Table 6: Hazard Statement Code(s), Hazard Class and Category Code(s) for**
1363 **benzo[a]pyrene according Table 3.1 of Part 3 of Annex VI to the**
1364 **CLP Regulation**

International Chemical Identification	CAS No.	Hazard Statement Code(s)	Hazard Class and Category Code(s)
Benzo[a]pyrene	50-32-8	H350	Carc. 1B
Benzo[def]chrysene		H340	Muta. 1B
		H360FD	Repr. 1B
		H317	Skin Sens. 1
		H400	Aquatic Acute 1
		H410	Aquatic Chronic 1

1365

1366 **A.5.2. Substances that deplete the ozone layer**

1367 The following section provides general guidance on the classification of waste
1368 containing substances that deplete the ozone layer (ODS).

1369 **General information**

1370 Ozone-depleting substances generally contain chlorine, fluorine, bromine, carbon, and
1371 hydrogen in varying proportions and are often described by the general term
1372 halocarbons. Chlorofluorocarbons (CFCs), carbon tetrachloride, and methyl chloroform
1373 are important human-produced ozone-depleting gases. Another important group of
1374 human-produced halocarbons are the halons, which contain carbon, bromine, fluorine,
1375 and (in some cases) chlorine. Most known substances with a significant ozone
1376 depleting potential are covered by the Montreal Protocol which aims to phase out ODS.
1377 The corresponding EU legislation is Regulation EC/1005/2009 (see paragraph below).

1378 These substances have a significant potential to harm the ozone layer for two reasons.
1379 The first is that they do not break down in the lower atmosphere - they can remain in
1380 the atmosphere for long time periods. The second is that they contain chlorine and/or
1381 bromine and thus help the natural reactions that destroy ozone [EEA 2014].

1382 **Main origin**

1383 Ozone depleting substances were, and still are used in many applications including
1384 refrigeration, air conditioning, foam blowing, cleaning of electronics components,
1385 manufacture of solvents and as components of fire extinguishers.

1386 Main sources for waste containing ODS which in practice cause problems in their
 1387 classification are foams from disposed refrigerators and construction and demolition
 1388 wastes (e.g. waste containing PCB).

1389 **Applicable entries of the LoW**

1390 A non-exhaustive list of main entries applicable for wastes containing ODS is
 1391 presented below:

14 06 01*	chlorofluorocarbons, HCFC, HFC	AH
14 06 02*	other halogenated solvents and solvent mixtures	AH
16 02 11*	discarded equipment containing chlorofluorocarbons, HCFC, HFC	MH
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	MNH
16 05 04*	gases in pressure containers (including halons) containing hazardous substances	MH
16 05 05	Gases in pressure containers other than those mentioned in 16 05 04	MNH
17 06 03*	Other insulation materials consisting of or containing hazardous substances	MH
17 06 04	Insulation materials other than those mentioned in 17 06 01 and 17 06 03	MNH
20 01 23*	discarded equipment containing chlorofluorocarbons, HCFC, HFC	AH

1392

1393 Further entries may be applicable, e.g. 15 01 10* (packaging containing residues of or
 1394 contaminated by hazardous substances) in case the packaging contains residues of
 1395 ODS, e.g. old spray cans.

1396 **Aspects to be considered for waste classification**

1397 Annex I (controlled substances) and II (new substances) of Regulation EC/1005/2009
 1398 on substances that deplete the ozone layer provides a list of substances to be
 1399 classified as ODS and their respective ozone-depleting potential.

1400 Aforementioned mainly relevant entries 14 06 01* and 14 06 02* are AH entries. As a
 1401 consequence, wastes assigned with these entries are classified as hazardous without
 1402 further assessment (even if they would not display hazardous properties). However,
 1403 the hazardous properties will have to be assessed e.g. for filling a consignment note.

1404 In case of old insulation foams as used in construction that might contain ODS, a
 1405 decision between the MH entry (17 06 03*) and the MNH entry (17 06 04) needs to be
 1406 made. For this decision between a MH or a MNH entry, the relevant hazardous
 1407 property is HP 14 'Ecotoxic' (cf. chapter C.14). As there is no harmonised classification
 1408 approach for HP 14 currently available on EU level (see chapter C.14), the current MS
 1409 approaches need to be considered for the assessment of waste containing ODS.

1410 As a provisional measure, some MS apply a concentration limit of 0.1 %, stemming
 1411 from the former EU chemical legislation (DSD or respectively DPD). The latter directive
 1412 laid down, that the generic concentration limit for substances (in a preparation),
 1413 classified as hazardous to the ozone layer (N, R59), that trigger classification of the
 1414 mixture as hazardous to the ozone layer, lies at 0.1 %. For the decision between a MH
 1415 and a MNH entry, this means that waste containing 0.1 % or more of ODS will have to

1416 be classified as hazardous by HP14. Thereby the concentration limit of 0.1 % is related
1417 to an individual ODS not to the total of such substances.

1418 **A.5.3. Asbestos**

1419 The following example provides general guidance on the classification of waste
1420 containing asbestos.

1421 **General information**

1422 Asbestos is a mineralogical name which describes certain fibrous silicates belonging to
1423 the mineralogical group of the serpentine and the amphibole minerals and those are
1424 crystallized in the so-called asbestiform form. The minerals that fall under this
1425 definition are: amosite, crocidolite, anthophyllite, chrysotile, fibre-shaped actinolite
1426 and tremolite [OVAM 2015].

1427 **Main origin**

1428 The use of asbestos including chrysotile is in practice completely banned in the EU
1429 since 2005 (see restriction entry 6 in Annex XVII to the REACH Regulation). However,
1430 asbestos is still a substance of concern as there were numerous recorded uses of
1431 asbestos and it still can be found inter alia in insulation, as a constituent of cement, in
1432 industrial buildings, plants, private homes, ships, heating and cooling systems and
1433 work equipment [OSHA Unknown].

1434 **Applicable entries of the LoW**

1435 A non-exhaustive list of main entries applicable for wastes containing asbestos is
1436 presented below:

06 07 01*	wastes containing asbestos from electrolysis	MH
06 13 04*	wastes from asbestos processing ⁸	AH
10 13 09*	wastes from asbestos-cement manufacture containing asbestos ⁸	MH
10 13 10	wastes from asbestos-cement manufacture other than those mentioned in 10 13 09 ⁸	MNH
15 01 11*	metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers	MH
16 01 11*	brake pads containing asbestos	MH
16 02 12*	discarded equipment containing free asbestos	MH
17 06 01*	insulation materials containing asbestos	MH
17 06 05*	construction materials containing asbestos	AH

1437

1438 Please note that the aforementioned list is just exemplary. There are further
1439 applicable LoW entries not literally mentioning asbestos, e.g. for contaminated soils
1440 containing asbestos fibres and demolition waste containing asbestos cement (17 05
1441 03* and 17 05 04).

1442 **Aspects to be considered for waste classification**

⁸ These activities are prohibited in Europe. Hence the entry no longer has much meaning for the classification of waste.

1443 For a decision between a MH or a MNH entry, the relevant hazardous property is HP 7
1444 'Carcinogenic'. Asbestos is classified according to the CLP Regulation with hazard class
1445 'Carc. 1A' and category code 'STOT RE 1' corresponding to hazard statement codes
1446 H350 and H372. Following Annex III of the WFD (cf. chapter C.7) the concentration
1447 limit for H350 is 0.1 %.

1448 As a consequence, waste containing 0.1 % or more of asbestos will have to be
1449 classified as hazardous by HP7. Please note that the identification of asbestos waste
1450 usually is done on the basis of knowledge on the material and expert judgement.
1451 However, there might be methods for determination on MS level, e.g. the official
1452 method for the determination of asbestos in Italy is DM 06/09/1994 GU n° 288
1453 10/12/1994 with the technique DRX, SEM or FT-IR where DRX is considered to be
1454 most suitable for bulky material and waste.

1455 Materials containing asbestos, for example a sheet of insulation material, is classified
1456 under the appropriate code for that asbestos waste. Member States may provide
1457 additional guidance on this, and require that the asbestos is assessed/classified
1458 separately from the waste it is mixed with.

1459 **A.5.4. Wastes containing CaO and Ca(OH)₂**

1460 The following example provides general guidance on the classification of waste
1461 containing calcium oxide CaO and calcium hydroxide Ca(OH)₂.

1462 **General information**

1463 CaO (also called lime or quicklime) may take the form of odourless crystals, white or
1464 greyish- white lumps, or granular powder. The commercial material may have a
1465 yellowish or brownish tint because of its iron content.

1466 Ca(OH)₂ (also called hydrated lime) is a soft white, powder or granule and non-
1467 combustible.

1468 **Main origin**

1469 Calcium oxide and calcium hydroxide are used in similar industries and applications:

- 1470 ▪ Use as raw material in the preparation of chlorinated lime, bleaching powder, and
1471 calcium salts. Also used as a binding agent for the manufacture of several products
1472 such as cement, and other building and paving materials.
- 1473 ▪ Used for water treatment and for the treatment of waste effluents from different
1474 industries.
- 1475 ▪ Used as a scrubbing and neutralizing agents in the chemical and petrochemical
1476 industry.
- 1477 ▪ Large volumes of calcium oxide and calcium hydroxide are generated in combustion
1478 processes and can be found in the leftover ash.
- 1479 ▪ Involved in different operations in the following industries: iron and steel
1480 manufacturing (as well as other metals), ammonia synthesis, metal ores refining,
1481 manufacture of fine chemicals (e.g. pharmaceuticals, lubricants), pulp and paper
1482 industry, leather manufacturing, etc.

1483 **Applicable entries of the LoW**

1484 There are many entries where wastes containing CaO/Ca(OH)₂ could be allocated. A
1485 non-exhaustive list of applicable entries is presented below. According to [UBA 2013],
1486 relevant entries for wastes containing CaO/Ca(OH)₂ can mainly be found in the
1487 following sub-chapters:

1488 10 01 wastes from power stations and other combustion plants (except 19)

1532 In accordance with the first indent of the Annex to the LoW, if a testing of the waste
 1533 applying (non-vertebrate animal) methods provided in the Test Methods Regulation
 1534 reveals that the waste in question does not display these hazardous properties, the
 1535 results of the test shall prevail.

1536 Please refer to chapter C.4 and C.5 for further information.

1537 **Table 7: Hazard statement codes and concentration limits for CaO and**
 1538 **Ca(OH)₂**

	Hazard Class and Category Code(s)	Hazard Statement Code(s) from self-classification	Concentration limit (total of substances)
CaO	Eye Dam. 1	H318	≥ 10 %
	STOT SE 3	H335	≥ 20 %
Ca(OH) ₂	Eye Dam. 1	H318	≥ 10 %
	STOT SE 3	H335	≥ 20 %

1539

1540 **A.5.5. Wastes containing coal tar and bitumen**

1541 The following example provides general guidance on the classification of waste
 1542 containing coal tar.

1543 **General information**

1544 Coal tar is a viscous material composed of complex, high-molecular-weight,
 1545 compounds e.g. derived from the destructive distillation of wood or coal [ETSA 2015].

1546 Bitumen is a generic term applied to natural inflammable substances of variable
 1547 colour, hardness, and volatility, composed principally of a mixture of hydrocarbons
 1548 substantially free from oxygenated bodies [ETSA 2015]. Bitumen is manufactured
 1549 from the distillation of crude oil during petroleum refining [Asphalte Institute &
 1550 Eurobitume 2015].

1551

1552 [Asphalte Institute & Eurobitume 2015] further explain the terminology of bitumen:
 1553 "Petroleum bitumen is known by different names throughout the world. For example
 1554 the term 'bitumen' is typically used in Europe and is synonymous with the term
 1555 'asphalt', or 'asphalt binder' used in North America. Outside North America, the term
 1556 'asphalt' is used to describe mixtures of bitumen with mineral materials. [...]"

1557 *Coal derived products such as coal tar or coal-tar pitches are very different from*
 1558 *bitumen. These are manufactured by the high-temperature pyrolysis (>800°C) of*
 1559 *bituminous coals and differ from bitumen substantially in composition, physical*
 1560 *characteristics, and potential health risks."*

1561 **Main origin**

1562 The majority of coal tar is distilled to produce refined products, including creosote,
 1563 coal-tar pitch, crude naphthalene, and anthracene oils. Some crude coal tar is used as
 1564 fuel for blast furnaces in the steel industry, because of its high availability and heating
 1565 value. In the industry of alumina and aluminium production and processing, coal tar is
 1566 used in several process steps, particularly in the manufacturing of anodes. Further
 1567 applications are in the broad sectors of construction and in various coal related
 1568 industries.

1569 According to [Asphalte Institute & Eurobitume 2015] the current world production of
 1570 bitumen is approximately 87 million tons per year and more than 250 known

1571 applications of bitumen exist. The majority of bitumen is used in the construction
1572 sector, in particular in paving and roofing applications.

1573 **Applicable entries of the LoW**

1574 A non-exhaustive list of main entries applicable for wastes containing coal tar is
1575 presented below:

17 03 01*	bituminous mixtures containing coal tar	MH
17 03 02	bituminous mixtures other than those mentioned in 17 03 01	MNH
17 03 03*	coal tar and tarred products	AH

1576

1577 **Aspects to be considered for waste classification**

1578 Potential hazards of wastes containing coal tar depend on their level of PAHs, which
1579 are known to have carcinogenic effects (high for coal tar, rather low in bitumen)
1580 [CUMBRIA 2011]. Thus, please refer also to chapter A.5.1.

1581 Indicator tests exist to identify whether the waste containing coal tar contains a
1582 significant concentration of PAH components. Tests will indicate presence of PAH but
1583 *not* give a measurement. Examples are [OVAM 2015, CUMBRIA 2011]:

- 1584 ▪ use of PAH marker in combination with use of a UV lamp;
- 1585 ▪ white spray paint;
- 1586 ▪ adding a drop of methylene chloride.

1587 When the test gives positive results it is assumed that the material contains tar and
1588 therefore is dangerous. Unless the holder of the waste stream is able to demonstrate
1589 that the concentration of PAHs is below the thresholds levels in Annex III to the WFD
1590 and thus can be classified as non-hazardous. However the classification as non-
1591 hazardous must not be done exclusively by the presence of PAHs but from all the
1592 substances present in the waste stream. The spray test is only indicative [OVAM
1593 2015].

1594 Coal tar and its distillates (e.g. tar oils) potentially display carcinogenic properties. If
1595 the concentration of such materials is at or above 0.1 % the waste would possess the
1596 hazardous property HP 7 carcinogenic (cf. chapter C.7).

1597 Determining the coal tar content is usually not conducted in the testing of waste.
1598 Instead, Table 3.1 of Part 3 of Annex VI to the CLP Regulation uses benzo[a]pyrene as
1599 a marker compound for carcinogenicity for certain coal tar entries. Where the
1600 concentration of benzo[a]pyrene is at or above 50 ppm (mg/kg) e.g. in the asphalt
1601 concrete alone (excluding other material) then the amount of coal tar should be
1602 considered to be sufficient for the material to be hazardous and thus coded 17 03 01*.

1603 Any sampling of asphalt concrete would need to ensure that layers with different
1604 concentrations of benzo[a]pyrene are properly and representatively assessed [UK EA
1605 2015].

1606 **A.5.6. Metals and alloys**

1607 The following example provides general guidance on the classification of waste
1608 containing metals and alloys.

1609 **General information**

1610 The term metals comprises a number of chemical elements in the periodic table that
1611 form a metallic bond with other metal atoms. In most cases they appear shiny, are

1612 malleable and hard and are able to conduct heat and electricity. Materials with similar
1613 physical properties, resulting from the mixture of several metals (i.e alloys) are also
1614 often commonly referred to as "metal".

1615 **Main origin**

1616 Metal wastes arise in various sectors such as WEEE, ELV, construction and demolition
1617 and several industrial uses.

1618 **Applicable entries of the LoW**

1619 Although entries 17 04 01 – 17 04 09* specifically refer to separate metals, only
1620 construction and demolition wastes shall be assigned with those entries. As long as
1621 the respective metal wastes are not contaminated with any hazardous substances
1622 (external contamination, e.g. paint, not associated to the metal or alloy itself), MNH
1623 entries 17 04 01 – 17 04 07 can be assigned according to the metallic composition of the
1624 waste. Otherwise the hazardous mirror entry 17 04 09* is applicable.

1625 If the waste in question does not stem from construction and demolition, other
1626 chapters of the LoW are applicable, e.g. in the case of metal waste from surface
1627 treatment, sub-chapter 12 01 (wastes from shaping and physical and mechanical
1628 surface treatment of metals and plastic).

1629 In any case the most suitable LoW entry needs to be assigned according to the order of
1630 precedence as described in chapter A.2.

1631 As a consequence, metal wastes from waste management facilities cannot be assigned
1632 to entries of chapter 17 but can be assigned among others to the following exemplary
1633 entries:

1634	19 10	waste from shredding of metal-containing wastes	
	19 10 01	iron and steel waste	ANH
	19 10 02	non-ferrous waste	ANH
	19 10 05*	other fractions containing hazardous substances	MH
1635	19 12	wastes from the mechanical treatment of waste (for example sorting, 1636 crushing, compacting, pelletising) not otherwise specified	
	19 12 02	ferrous metal	ANH
	19 12 03	non-ferrous metal	ANH
	19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of wastes containing hazardous substances	MH

1637 Additionally, specific non-hazardous entries for metals exist in chapter 15 (waste
1638 packaging) and 20 (municipal waste).

1639 A detailed reference to heavy metals is not included in this example.

1640 **Aspects to be considered for waste classification**

1641 In the LoW pure metal alloys are specifically exempt of the classification as hazardous:

1642 *'The concentration limits defined in Annex III to Directive 2008/98/EC do not*
1643 *apply to pure metal alloys in their massive form (not contaminated with*
1644 *hazardous substances). Those waste alloys that are considered as hazardous*
1645 *waste are specifically enumerated in this list and marked with an asterisk (*)'*

1646 As the legislation does not define 'massive form', some Member States use a particle
1647 size (diameter) > 1 mm as a threshold to indicate the classification of metals as
1648 'massive form' in contrast to powders/dust [BMLFUW AT 2015].

1649 Additionally, special care should be taken in order to avoid misclassification of scrap
1650 metals as waste. Council Regulation (EU) No 333/2011 establishes criteria determining
1651 when certain types of scrap metal (iron, steel and aluminium scrap) cease to be
1652 waste. Similar legislation exists for copper scrap (Commission Regulation (EU) No
1653 715/2013). Operators may decide voluntarily whether to make use of this end-of
1654 waste status for metal scrap that fulfils the respective criteria. If fulfilling the relevant
1655 criteria, metals/alloys may not be considered waste as defined according the WFD,
1656 and the classification according this guidance document is not applicable.

1657 In the case of massive metals, hazardous entries are unlikely to be used, unless a
1658 substantial indication exists that metal fractions have been contaminated with non-
1659 metal hazardous substances during the treatment process in a way that the waste
1660 displays hazardous properties.

1661 Only alloys in their massive form that are specifically listed as hazardous, or
1662 contaminated by non-metal hazardous substances, should be treated as hazardous.
1663 According to [UK EA 2015], the only 'alloy' specifically listed in the LoW and assigned
1664 to an AH entry is:

18 01 10* amalgam waste from dental care AH

1665 Please note that the flow charts for the assessment of hazardous properties as
1666 displayed in Annex C do not specifically recall that the concentration limits defined in
1667 Annex III to the WFD do not apply to pure metal alloys in their massive form.

1668 **A.5.7. Organic peroxides**

1669 The following example provides general guidance on the classification of waste
1670 containing organic peroxides.

1671 **General information**

1672 The CLP Regulation defines organic peroxides in Annex I, Section 2.15:

1673 *'Organic peroxides means liquid or solid organic substances which contain the*
1674 *bivalent -O-O- structure and may be considered derivatives of hydrogen*
1675 *peroxide, where one or both of the hydrogen atoms have been replaced by*
1676 *organic radicals. The term organic peroxide includes organic peroxide mixtures*
1677 *(formulations) containing at least one organic peroxide. Organic peroxides are*
1678 *thermally unstable substances or mixtures, which can undergo exothermic self-*
1679 *accelerating decomposition. In addition, they can have one or more of the*
1680 *following properties:*

- 1681 ▪ *be liable to explosive decomposition;*
- 1682 ▪ *burn rapidly;*
- 1683 ▪ *be sensitive to impact or friction;*
- 1684 ▪ *react dangerously with other substances.'*

1685 **Main origin**

1686 The plastics and rubber industries are important users of organic peroxides. Organic
1687 peroxides and mixtures containing organic peroxides are used as e.g. accelerators,
1688 activators, catalysts, cross-linking agents, curing agents, hardeners, initiators and

1689 promoters. Other applications may be the use as bleaching agents (e.g. flour
1690 bleaching), as active pharmaceutical ingredients and as flame retardant synergists.

1691 **Applicable entries of the LoW**

1692 There are many entries where wastes containing organic peroxides could be allocated.
1693 A non-exhaustive list of applicable entries is presented below:

1694	16 09 03*	peroxides, for example hydrogen peroxide	AH
	16 09 04*	oxidising substances, not otherwise specified	AH

1694

1695 All above mentioned entries are absolute hazardous entries, which means no
1696 assessment on hazardous properties is necessary in order to determine whether the
1697 waste is to be classified as hazardous if one of these entries is assigned to wastes
1698 containing organic epoxides. However, the assessment of hazardous properties will
1699 still be necessary, e.g. for filling a consignment note.

1700 **Aspects to be considered for waste classification**

1701 For a decision between the MH and the MNH entry in the field of organic peroxides,
1702 hazardous properties HP1 and HP3 are most relevant.

1703 In the determination of HP1 'Explosive' (cf. chapter C.1), cut-off values for organic
1704 peroxides need to be considered. A waste containing organic peroxides classified with
1705 hazard statement class H240 or H241 needs to be assessed for HP1, unless the
1706 following statements hold true:

- 1707 ▪ No other hazardous substances assigned hazard statement codes listed in Table 9
1708 (see chapter C.1) are present, and
- 1709 ▪ One of the following two criteria is met:
 - 1710 ○ the waste contains >1 % but ≤ 7 % hydrogen peroxide, and the
1711 available oxygen content (O_i) of the organic peroxide(s) is ≤ 0.5 %;
 - 1712 ○ the waste contains ≤ 1 % hydrogen peroxide, and the available oxygen
1713 content (O_i) of the organic peroxide(s) is ≤ 1 %.

1714 The available oxygen content, O_i (%) for any given organic peroxides has to be
1715 calculated according chapter 2.15 of the CLP Regulation:

$$1716 O_i (\%) = \sum (16x (n_i \times c_i / m_i))$$

1717 where:

1718 n_i : number of peroxide groups per molecule of organic peroxide i .

1719 c_i : concentration (mass %) of organic peroxide i in the waste.

1720 m_i : gram molecular mass of organic peroxide i

1721 'Σ' means that if a waste contains more than one organic peroxide the available
1722 oxygen from each is added together. This includes all organic peroxides, and is not
1723 restricted to those classified as H240 or H241.

1724 [UK EA 2015] provides an example calculation for methyl ethyl peroxide which is
1725 presented in the following. A waste contains 2.9 % methyl ethyl peroxide (C_2H_5-O-O-
1726 CH_3) and 3 % hydrogen peroxide. The concentration of hydrogen peroxide is > 1%
1727 and ≤ 7 % hydrogen peroxide (see criteria above). Methyl ethyl peroxide has a
1728 molecular mass of 76g (so ' m_i ' is 76) and one peroxide functional group present (so n_i
1729 is 1). When applying these values in the the formula ' $O_i (\%) = \sum (16x (n_i \times c_i / m_i))$ '
1730 for a concentration (' c_i ') of 2.9% in the waste, methyl ethyl peroxide has an available

1731 oxygen content (O_i) of 0.61% ($16 \times 1 \times 2.9 / 76$). This is above the available oxygen
1732 threshold of 0.5 % for criteria (i), so HP1 must be assessed.

1733 Organic peroxides have specifically to be considered in determining HP 3 'Flammable'.
1734 A waste containing self-reactive substances or organic peroxides classified as H240 or
1735 H241 may possess the hazardous property HP 3 Flammable as a result of the
1736 assessment of HP 1 Explosive classifying the waste as a whole as H242. Please refer to
1737 chapter C.3 for additional information.

1738 Further guidance on organic peroxides according the CLP Regulation can be found
1739 directly in the CLP Regulation or in its corresponding guidance document (cf. pages
1740 234ff of [ECHA 2013]).

1741 **A.5.8. Rubber wastes**

1742 The following example provides general guidance on the classification of rubber
1743 wastes.

1744 **General information**

1745 Rubber wastes are mainly end of life products from the use of tyres and general
1746 rubber goods.

1747 **Main origin**

1748 The annual production in 2013 of tyres and general rubber goods amounted to ~4.67
1749 million tonnes and ~2.57 million tonnes respectively. Rubber waste arises in relevant
1750 quantities from tyres and general rubber goods. In 2012 the quantity of end-of-life
1751 tyres amounted to 2,765 kt. There is no specific information available for general
1752 rubber goods [ETRMA 2015].

1753 **Applicable entries of the LoW**

1754 A non-exhaustive list of main entries applicable for wastes containing rubber and tyres
1755 (and also other organic waste) is presented below:

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	ANH

1756

1757 **Aspects to be considered for waste classification**

1758 The majority of rubber waste is allocated to ANH entries. Waste code 16 03 06 is a
1759 MNH entry to the MH entry 16 03 05* (organic wastes containing hazardous
1760 substances) under chapter 16 (wastes not otherwise specified in the list) sub-chapter
1761 16 03 (off-specification batches and unused products). This hazardous entry can be
1762 used for unused rubber products with oils or solvents or for contaminated off-
1763 specification rubber batches which are contaminated e.g. with oils or solvents. As a
1764 last resort, rubber wastes from the MFSU of plastics, synthetic rubber and man-made
1765 fibres can be allocated to waste code 07 02 99.

1766 **A.5.9. Plastic wastes**

1767 The following example provides general guidance on the classification of plastic
1768 wastes.

1769 **General information**

1770 A plastic material is an organic solid, essentially composed by a mixture of a polymer
 1771 or combination of polymers of high molecular mass with other substances such as
 1772 additives, stabilisers, fillers, etc. A polymer is a chain of many repeating molecular
 1773 units of monomers. The monomers of plastic are either natural or synthetic organic
 1774 compounds. The term resin is sometimes used as synonym of a commercial polymer
 1775 [EC JRC 2014].

1776 **Main origin**

1777 The EU is one of the world's crucial players in plastic manufacturing and in 2012
 1778 produced about 57 million tons of plastic. EU Converter demand in 2012 was about 46
 1779 million tons and the quantity of post-consumer plastic waste was approximately 25
 1780 million tons [Plastics Europe Facts 2013].

1781 Plastic wastes arise from end of life plastic products from industrial or household
 1782 applications. The generation of post-consumer plastics waste is dominated by plastic
 1783 packaging waste. Other relevant sectors in particular are: building and construction,
 1784 automotive, WEEE and agriculture [EC JRC 2014].

1785 **Applicable entries of the LoW**

1786 A non-exhaustive list of main entries applicable for wastes containing plastics is
 1787 presented below:

1788 Plastic packaging

15 01 02	plastic packaging	MNH
15 01 05	composite packaging	MNH
15 01 06	mixed packaging	MNH
15 01 10*	packaging containing residues of or contaminated by hazardous substances	MH

1789 Plastic waste from construction and demolition

17 02 03	plastic	MNH
17 02 04*	glass, plastic and wood containing or contaminated with hazardous substances	MH

1790 Entries which (can) contain plastic but do not explicitly refer to plastic, such as:

17 04 10*	cables containing oil, coal tar and other hazardous substances	MH
17 04 11	cables other than those mentioned in 17 04 10	MNH
17 06 03*	other insulation materials consisting of or containing hazardous substances	MH
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03	MNH
17 09 03*	other construction and demolition wastes (including mixed wastes) containing hazardous substances	MH
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	MNH

1791 Plastic waste from automotive applications

16 01 19	plastic	ANH
19 10 03*	fluff-light fraction and dust containing hazardous	MH

		substances	
	19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03	MNH
1792	<u>Plastic WEEE</u>		
	19 12 04	plastic and rubber	ANH
1793	Entries which (can) contain plastic but do not explicitly refer to plastic, such as:		
	16 02 15*	hazardous components removed from discarded equipment	
	16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15	
	19 10 03*	fluff-light fraction and dust containing hazardous substances	MH
	19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03	MNH
	19 10 05*	other fractions containing hazardous substances	MH
	19 10 06	other fractions other than those mentioned in 19 10 05	MNH
	19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances	MH
	19 12 04	plastic and rubber	MNH
	19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	MNH
1794	<u>Agriculture</u>		
	02 01 04	waste plastics (except packaging)	ANH
1795	Apart from the aforementioned sectors, further entries for plastics can be found		
1796	throughout different chapters of the LoW. Examples are:		
	07 02 13	waste plastic	ANH
	07 02 16*	Wastes containing hazardous silicones	MH
	07 02 17	Waste containing silicones other than those mentioned in 07 02 16	MNH
	12 01 05	plastics shavings and turnings	ANH
	12 01 16*	waste blasting material containing hazardous substances	MH
	12 01 17	waste blasting material other than those mentioned in 12 01 16	MNH
	20 01 39	plastics	ANH
1797	Aspects to be considered for waste classification		
1798	Plastic materials usually contain not only plastic polymers but a variety of different		
1799	additives in the plastic matrix to improve performance and use application or		
1800	processing properties of the final product. Additives are a different group of special		
1801	chemicals which are either incorporated into the plastic matrix prior or during		
1802	processing or applied to the final products' surface after the processing [Bart 2005].		

1803 A specific plastic waste which can be allocated to a mirror entry can be hazardous
1804 either because of the additives it contains or because the waste is contaminated with
1805 hazardous substances e.g. oils or solvents.

1806 Typically relevant additives in plastic waste are for example stabilisers or pigments
1807 (e.g. cadmium, chromium, lead or tin compounds, BPA, nonylphenol compounds)
1808 flame retardants (SCCPs, MCCPs, PBDEs, HBCD, etc.), plasticisers (phthalates, SCCPs,
1809 MCCPs, etc.) and a variety of other possibly contained additives (for details see [BiPRO
1810 2015]).

1811 Note that waste code 15 01 10* can be either hazardous because (1) the packaging is
1812 hazardous if it contains (usually non-plastic) residues of hazardous substances OR
1813 because (2) the plastic material itself (of which the packaging is manufactured)
1814 contains hazardous substances (see also example on packaging waste in chapter
1815 A.4.1).

1816 **A.5.10. POP wastes**

1817 The following example provides general guidance on the classification of waste
1818 containing POPs.

1819 **General information**

1820 Persistent Organic Pollutants (POPs) are organic chemical substances. They possess a
1821 particular combination of physical and chemical properties such that, once released
1822 into the environment, they persist for long periods of time, they become widely
1823 distributed throughout the environment, accumulate in the fatty tissue of living
1824 organisms including humans, and are toxic to both humans and wildlife.

1825 **Main origin**

1826 POPs are a group of different substances or substance groups with different origin.
1827 Many POPs are or were intentionally produced pesticides or industrial chemicals which
1828 have been used for manifold technical or agricultural applications. Other POPs are
1829 produced unintentionally as a by-product e.g. during manufacturing or incineration
1830 processes.

1831 **Aspects to be considered for waste classification**

1832 The Stockholm Convention on POPs and the Protocol to the regional UNECE
1833 Convention on Long-Range Transboundary Air Pollution (CLRTAP) are international
1834 instruments, whose POP substance lists are amended continuously. As soon as new
1835 substances/substance groups are classified in the Convention as POPs, they are
1836 subsequently included in the POP Regulation.

1837 Specific waste related provisions for POPs are established under the aforementioned
1838 POP Regulation. Following Article 7, wastes consisting of POPs, containing or
1839 contaminated with them above specific limit values (concentration limit referred to in
1840 Article 7(4)(a) – the so called 'low POP-content limit value'), must be disposed of or
1841 recovered, without undue delay and in accordance with the provisions laid down in the
1842 POP Regulation in such a way as to ensure that the POP content is destroyed or
1843 irreversibly transformed so that the remaining waste and releases do not exhibit the
1844 characteristics of POPs. Disposal or recovery operations that may lead to recovery,
1845 recycling, reclamation or re-use of the POPs are prohibited.

1846 According to the LoW, the following applies in case of mirror entries:

1847 *Wastes containing polychlorinated dibenzo-p-dioxins and dibenzofurans*
1848 *(PCDD/PCDF), DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane),*
1849 *chlordane, hexachlorocyclohexanes (including lindane), dieldrin, endrin,*
1850 *heptachlor, hexachlorobenzene, chlordecone, aldrine, pentachlorobenzene,*

mirex, toxaphene hexabromobiphenyl and/or PCB exceeding the concentration limits indicated in Annex IV to Regulation (EC) No 850/2004 of the European Parliament and of the Council (1) shall be classified as hazardous.'

It is not foreseen to add further POPs to the LoW.

Thus, waste containing specific POPs in concentrations which exceed the limit values established in the POP Regulation (cf. Table 8) shall be classified as hazardous. For wastes containing other POPs, the concentration limit values resulting from Annex III to the WFD apply.

Table 8: Limit values established in the POP Regulation for those POPs which are listed in the LoW

Substance	CAS No.	EC No.	Concentration limit referred to in Article 7(4)(a)
Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)			15 µg/kg ⁽¹⁾
DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane)	50-29-3	200-024-3	50 mg/kg
Chlordane	57-74-9	200-349-0	50 mg/kg
Hexachlorocyclohexanes, including lindane	58-89-9	210-168-9	50 mg/kg
	319-84-6	200-401-2	
	319-85-7	206-270-8	
	608-73-1	206-271-3	
Dieldrin	60-57-1	200-484-5	50 mg/kg
Endrin	72-20-8	200-775-7	50 mg/kg
Heptachlor	76-44-8	200-962-3	50 mg/kg
Hexachlorobenzene	118-74-1	200-273-9	50 mg/kg
Chlordecone	143-50-0	205-601-3	50 mg/kg
Aldrin	309-00-2	206-215-8	50 mg/kg
Pentachlorobenzene	608-93-5	210-172-5	50 mg/kg
Polychlorinated Biphenyls (PCB)	1336-36-3 and others	215-648-1	50 mg/kg ⁽²⁾
Mirex	2385-85-5	219-196-6	50 mg/kg
Toxaphene	8001-35-2	232-283-3	50 mg/kg
Hexabromobiphenyl	36355-01-8	252-994-2	50 mg/kg

⁽¹⁾ The limit is calculated as PCDD and PCDF according to the toxic equivalency factors (TEFs) as indicated in Regulation (EC) No 850/2004

⁽²⁾ Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

1861

1862 Waste which falls under the obligations of Article 7 of the POP Regulation because it
1863 contains POPs in concentrations which exceed the low POP content limit value is not
1864 necessarily a hazardous waste. For example a waste containing pentaBDE (main
1865 historic use in flexible PUR foams for automotive and upholstery applications) in a
1866 concentration of 5 % shall be treated according to Article 7 of the POP Regulation
1867 (concentration limit for the sum of POP-BDEs 0.1 %) but is not a hazardous waste
1868 (limit value for pentaBDE 10 %). Note that all obligations for producers or holders of
1869 waste stemming from POPs Regulation have to be fulfilled independently whether the
1870 classification of waste in line with the LoW leads to the waste to be considered as
1871 hazardous or not.

1872 Please note that for wastes which are only classified as hazardous due to their POP
1873 content it may be difficult to complete the consignment notes as usually the hazardous
1874 properties HP 1 to 15 have to be recorded and reported.

1875

DRAFT

Annex B: 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 substances and how their chemical classification is determined. Annex B provides guidance on both, the examination whether identified substances are hazardous substances and their chemical classification. It further describes data sources providing relevant information for this purpose. The major data sources are displayed in Figure 8. Reference is made to the respective chapter of this document (grey box) and to the official source (blue box). Further explanations on the data sources including information on their precedence are given in the respective paragraphs below.

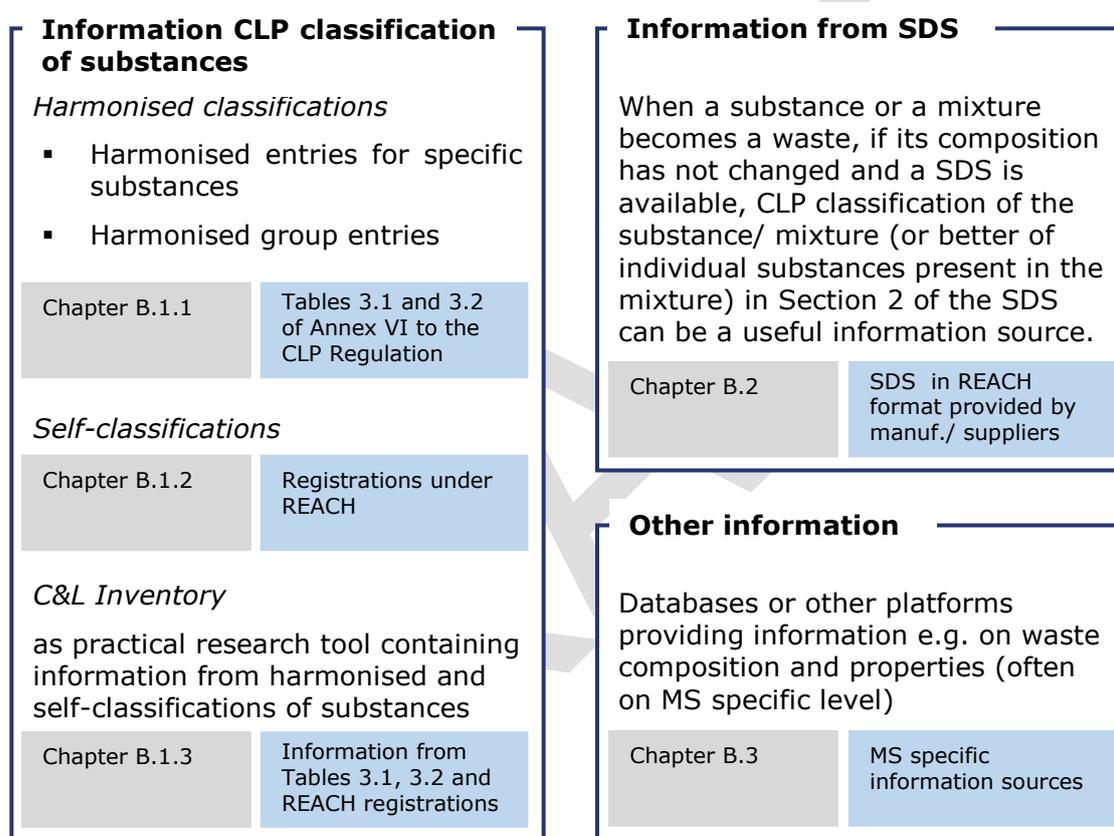


Figure 8: Data sources for information on hazardous substances

B.1 Classification of substances as hazardous according the CLP Regulation

On many occasions, the decisive criterion for the assignment of MH or MNH entries is the presence of 'hazardous substances', in line with the HP-criteria and related thresholds contained in Annex III to the WFD (consult in detail Annex C of this document). The EU CLP Regulation provides the criteria to assess the physical, human health and environmental hazards of substances. A hazardous substance is a substance that is assigned a hazard statement code when classified using the CLP Regulation. Information about which hazard statement codes are assigned to which substances can be derived from harmonised classifications and when not available partly also from self-classifications as described in the following sections.

1900 **B.1.1 Harmonised classification of substances**

1901 Some substances are 'officially' classified by means of a formal decision at the EU
1902 level. These are referred to as 'harmonised classifications' and listed in Table 3.1 of
1903 Part 3 of Annex VI to the CLP Regulation.

1904 A harmonised classification provides information on the chemical classification and
1905 labelling of a substance:

1906 Hazard statement code The code assigned to the hazard class and category. For
1907 example a carcinogen could be 'H350' or 'H351'.

1908 Hazard Class The nature of the hazard. For example a carcinogenic is
1909 'Carc.'

1910 Hazard Category A sub-category of the hazard class that describes the
1911 severity of the hazard. For example a carcinogen could be
1912 '1A', '1B' or '2'.

1913 The hazard classes and categories presented in Table 3.1 of Part 3 of Annex VI to the
1914 CLP Regulation take legal precedence over all other sources of information on those
1915 hazard classes and categories, and they must be used for classification. Note that a
1916 harmonised classification may be incomplete where it only covers the hazard classes
1917 and categories listed. For information on terminology please refer to the Glossary of
1918 this document or to [ECHA 2013].

1919 Table 3.1 of Part 3 of Annex VI to the CLP Regulation is regularly updated by
1920 adaptations to technical progress (ATPs). It contains two types of harmonised
1921 classifications:

- 1922 ▪ harmonised classifications for specific substances (such as e.g. 'lead chromate'),
1923 and
- 1924 ▪ harmonised group classifications (such as e.g. 'lead compounds').

1925 Harmonised classifications can be found in the Classification and Labelling (C&L)
1926 Inventory maintained by the European Chemical Agency (ECHA) (cf. chapter B.1.3). In
1927 case a harmonised classification for a specific substance is existent, information of this
1928 classification shall prevail over information from harmonised group classifications.

1929 **B.1.2 Self-classifications**

1930 Manufacturers, importers and downstream users of substances are obliged to perform
1931 a self-classification under the CLP Regulation (in the framework of registration of
1932 substances under REACH), determined through the application of the CLP classification
1933 criteria.

1934 There can be multiple classifications for the same substance due to:

- 1935 ▪ the different composition, form or physical state of the substance placed on the
1936 market;
- 1937 ▪ a manufacturer or producer identifying insufficient information to assess that hazard
1938 class or category (which they will report as 'data lacking', 'inconclusive', or
1939 'conclusive but not sufficient for classification');
- 1940 ▪ the manufacturer, importer or downstream user has access to, or has generated,
1941 different or additional data.

1942 Self-classifications may be used to identify what hazard classes and categories have
1943 already been identified by other notifiers going beyond the harmonised classification
1944 and should serve as general information basis. It is recommended to check in
1945 particular those self-classifications showing the highest number of notifiers. There are

1946 ongoing efforts to get notifiers to agree on self-classifications. However, if no
1947 harmonised classification is available and only self-classifications for the substances in
1948 question are available, the waste holder cannot finalise the classification of the
1949 substances solely based on self-classifications. Instead it is recommended to use other
1950 information sources for the classification of the waste, such as SDS.

1951 **B.1.3 The C&L Inventory as research tool**

1952 The C&L Inventory⁹ managed by the ECHA can be used to search for the classification
1953 of substances or group of substances which are relevant in the context of waste
1954 classification (and, if applicable, for verification of that information). This inventory
1955 allows for an easy research for harmonised classifications of substances or group of
1956 substances as it contains information from Table 3.1 and Table 3.2 of Part 3 of Annex
1957 VI to the CLP Regulation. It also contains self-classifications provided in the framework
1958 of registration of substances under REACH and notifications of unregistered
1959 substances (e.g. low volume importers who are not obliged to register). When no
1960 harmonised classification and more than one self-classification is reported in the C&L
1961 Inventory, the ECHA database on registered substances¹⁰ can help supporting
1962 information obtained from the C&L Inventory.

1963 Furthermore the C&L Inventory is translated into all EU languages.

1964 However, it should be noted that the C&L Inventory is subject to regular changes in
1965 content and the content should be considered with caution (e.g. the convergence of
1966 classifications per substance is a steady work in progress in the C&L Inventory).

1967 Please find below the exemplary harmonised entry of 'lead chromate' (CAS Number
1968 7758-97-6) as it is displayed in the C&L Inventory.

⁹ <http://echa.europa.eu/regulations/clp/cl-inventory>

¹⁰ <http://echa.europa.eu/de/information-on-chemicals/registered-substances>

1969

▼ **Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)**

General Information

Index Number	EC Number	CAS Number	International Chemical Identification
082-004-00-2	231-846-0	7758-97-6	lead chromate

ATP Inserted / Updated: CLP00/ATP01

CLP Classification (Table 3.1)

Classification		Labelling			Specific Concentration limits, M-Factors	Notes
Hazard Class and Category Code(s)	Hazard Statement Code (s)	Hazard Statement Code (s)	Supplementary Hazard Statement Code(s)	Pictograms, Signal Word Code(s)		
Carc. 1B	H350	H350		GHS09 GHS08 Dgr		Note 1
Repr. 1A	H360Df	H360Df				
STOT RE 2	H373 **	H373 **				
Aquatic Acute 1	H400					
Aquatic Chronic 1	H410	H410				

Signal Words	Pictograms	
Danger		
	Environment	Health hazard

1970

1971 **Figure 9: Exemplary harmonised entry for 'lead chromate' as displayed in**
 1972 **the C&L Inventory**

1973 As displayed in Figure 9, 'lead chromate' is classified as:

- 1974 • Carc. 1B H350
- 1975 • Repr. 1A H360Df
- 1976 • STOT RE 2 H373**
- 1977 • Aquatic Acute 1 H400
- 1978 • Aquatic Chronic 1 H410

1979 In order to assess if the waste in question displays hazardous properties (see chapter
 1980 3.2.2 and Annex C) due to its content of the hazardous substance 'lead chromate', the
 1981 information on hazard class, hazard category and hazard statement codes of 'lead
 1982 chromate' needs to be considered.

1983 B.2 Information on composition, properties and waste 1984 management of substances/ mixtures becoming waste

1985 For substances and mixtures that are classified as hazardous according to CLP, as also
 1986 for non-classified mixtures containing hazardous substances above certain thresholds,
 1987 a SDS need to be provided by the supplier. SDS have to fulfil certain requirements and
 1988 comply with a format defined in Article 31 of the REACH Regulation, and must include
 1989 information:

- 1990
- 1991
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- 2019
- on the classification of the substance or mixture in accordance with Title II of CLP Regulation (section 2 of the SDS); this may be a harmonised classification or a self-classification (see chapter B.1);
 - 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 useful information tool for the further assessment steps that have to be carried out during classification according to the LoW once a particular product has become waste.
- Note that in case 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 and secondly the classifications of the individual component substances must be used, rather than the overall chemical classification of the mixture. Section 3 of a SDS for mixtures provides the classifications according CLP for the individual hazardous constituents of the mixture. This information may be validated or complemented by means of a search at the C&L inventory (cf. chapter B.1.3).
- Note that for substances and mixtures for which a SDS is not mandatory as well as also in the case of articles, voluntary product information sheets may be available that are not conforming to SDS but provide information on composition and recommended disposal practices.
- Additional checks 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 are not covered by SDS.

B.3 Other information sources

2020
2021 Apart from the information sources presented in the previous chapters, there may
2022 exist further useful literature on the presence and content of substances potentially
2023 present in waste. Which source can be consulted must be decided on a case-by-case
2024 basis. In general, potential examples are:

- 2025 ▪ BREF documents;
- 2026 ▪ Industrial process handbooks;
- 2027 ▪ Sector notebooks of the US Environmental Protection Agency;
- 2028 ▪ Process and substance information from the producer of the waste (process
2029 descriptions);
- 2030 ▪ Databases on typical composition of certain wastes.

2031 Especially regarding the later aspects it should be noted that in some Member States,
2032 databases specifically referring to composition, physical-chemical properties and
2033 classification of waste streams are publicly available. These databases further provide
2034 waste-specific guidance for producers or holders of waste and/or competent
2035 authorities. An example of such a relevant data base is ABANDA¹¹, managed by
2036 German regional authority LANUV. In addition there is software available to facilitate
2037 waste classification, such as HazWasteOnline^{tm12} from the UK.

2038
2039 Further/ additional information may be available on data bases and tools managed at
2040 Member States level.

2041
¹¹ <http://www.lanuv.nrw.de/abfall/bewertung/abanda.htm>

¹² <https://www.hazwasteonline.com/default.aspx?ReturnUrl=%2f>

Annex C: Specific approaches to determine hazard properties (HP1 to HP15)

C.1. Determining HP 1: Explosive

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 1 'Explosive' as:

'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. Pyrotechnic waste, explosive organic peroxide waste and explosive self-reactive waste is included.'

Regarding HP 1, to note that the scope of WFD excludes 'decommissioned waste explosives' (see chapter 3.1.1). Thus, it is recommended to check whether the relevant waste in question is subject to the rules of WFD and LoW in the first place.

The WFD further explains that:

'When a waste contains one or more substances classified by one of the hazard class and category codes and hazard statement codes shown in Table 1 [see Table 9], the waste shall be assessed for HP 1, where appropriate and proportionate, according to test methods. If the presence of a substance, a mixture or an article indicates that the waste is explosive, it shall be classified as hazardous by HP 1.'

Waste containing substances that are classified with the hazard class, category and statement codes in Table 9 can be tested to show whether it displays that hazardous property or not. Alternatively, a waste containing those substances can simply be assumed to be hazardous by HP 1.

Table 9: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents for the classification of wastes as hazardous by HP 1 Explosive

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description
Unst. Expl.	H 200	<i>Unstable explosives</i>
Expl. 1.1	H 201	<i>Explosive; mass explosion hazard.</i>
Expl. 1.2	H 202	<i>Explosive, severe projection hazard</i>
Expl. 1.3	H 203	<i>Explosive; fire, blast or projection hazard</i>
Expl. 1.4	H 204	<i>Fire or projection hazard</i>
Self-react. A	H 240	<i>Heating may cause an explosion</i>
Org. Perox. A		
Self-react. B	H 241	<i>Heating may cause a fire or explosion</i>
Org. Perox. B		

2069 Where a product that has become waste is known to be explosive, it shall also be
2070 considered as HP 1.

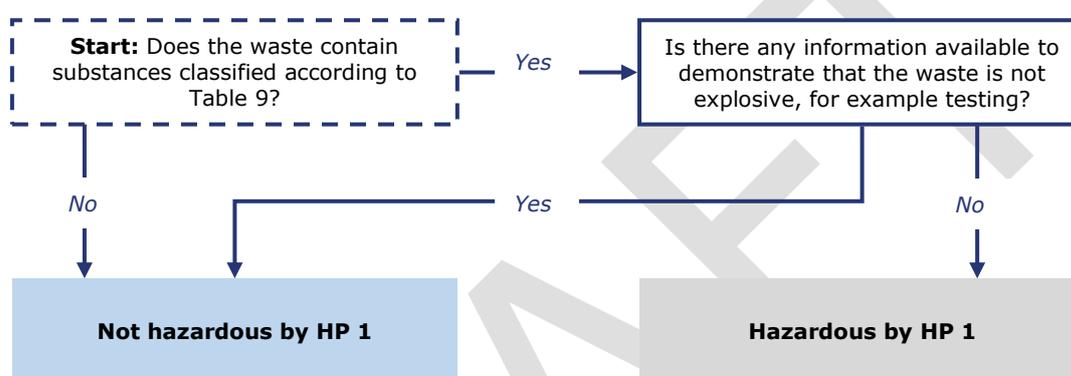
2071 Some substances may be explosive under certain conditions, e.g. those assigned
2072 Hazard statement Codes H205 *May mass explode in fire* or EUH001 *Explosive when*
2073 *dry*. These substances do not make a waste hazardous by HP 1, but their presence in
2074 a waste could make that waste exhibit hazardous property HP 15; see Section C.15 for
2075 further details.

2076 A waste containing a substance classified as H240 or H241 should be considered for
2077 HP 3 flammable where the waste is not hazardous by HP 1.

2078

2079 Flow Chart

2080 Figure 10 sets out the assessment process for HP 1.



2081

Figure 10: Flow chart for determination of HP 1 (Adjusted from [UK EA 2015])

2082

2083

2084 Test Methods

2085 Part A of the Annex to the Test Methods Regulation provides the following test method
2086 which may be regarded in the assessment of HP 1 'Explosive':

2087 ▪ A.14. Explosive Properties

2088 Wastes containing substances listed in Table 9 should be tested for explosive
2089 properties in accordance with [ECHA 2013].

2090 Separate sections are provided in [ECHA 2013] for testing of mixtures containing:

- 2091 ▪ organic peroxides (2.15)
- 2092 ▪ self-reactive substances and mixtures (2.8)
- 2093 ▪ explosives (2.1).

2094 The CLP Regulation classifies self-reactive substances and mixtures in one of the
2095 seven categories of 'types A to G' [ECHA 2013]. Waste containing an organic peroxide
2096 or a self-reacting substance, where the waste is classified by testing as Type A (H240)
2097 or Type B (H241), displays HP 1. Where this is not the case, a waste classified as Type
2098 C, D, E or F (H242) displays HP 3.

2099 A waste containing another substance listed in Table 9, where the waste is classified
2100 by testing as Unstable Explosive (H200), Division 1.1(H201), 1.2(H202), 1.3(H203) or
2101 1.4(H204), displays HP 1.

2102 A detailed example for an assessment of organic peroxides according HP 1 can be
2103 found in chapter A.5.7.

2104

DRAFT

C.2. Determining HP 2: Oxidising

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 2 'Oxidizing' as:

'waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials'

The WFD further explains that:

'When a waste contains one or more substances classified by one of the hazard class and category codes and hazard statement codes shown in Table 2, the waste shall be assessed for HP 2, where appropriate and proportionate, according to test methods. If the presence of a substance indicates that the waste is oxidising, it shall be classified as hazardous by HP 2.'

A waste containing substances that are classified with the hazard class, category and statement codes in Table 10 can be tested to show whether it displays that hazardous property or not. Alternatively a waste containing those substances can simply be assumed to be hazardous by HP 2.

Table 10: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents for the classification of wastes as hazardous by HP 2 Oxidising

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description
Ox. Gas 1	H 270	<i>May cause or intensify fire; oxidiser</i>
Ox. Liq. 1	H 271	<i>May cause fire or explosion; strong oxidiser</i>
Ox. Sol. 1		
Ox. Liq. 2	H 272	<i>May intensify fire; oxidiser</i>
Ox. Liq. 3		
Ox. Sol. 2		
Ox. Sol. 3		

Where

- the waste contains only one of these substances;
- that substance is assigned a specific concentration limit in Table 3.1 of Part 3 of Annex VI to CLP;
- that substance is present in the waste below that limit;

it can be assumed that the waste is not hazardous by HP 2.

An example is 'nitric acid' which is listed as H272, Ox. Liq. 3 with a specific concentration limit of $\geq 65\%$. Where 'nitric acid' is present in a waste above 65% that waste has to be classified as HP 2 (in addition to HP 8).

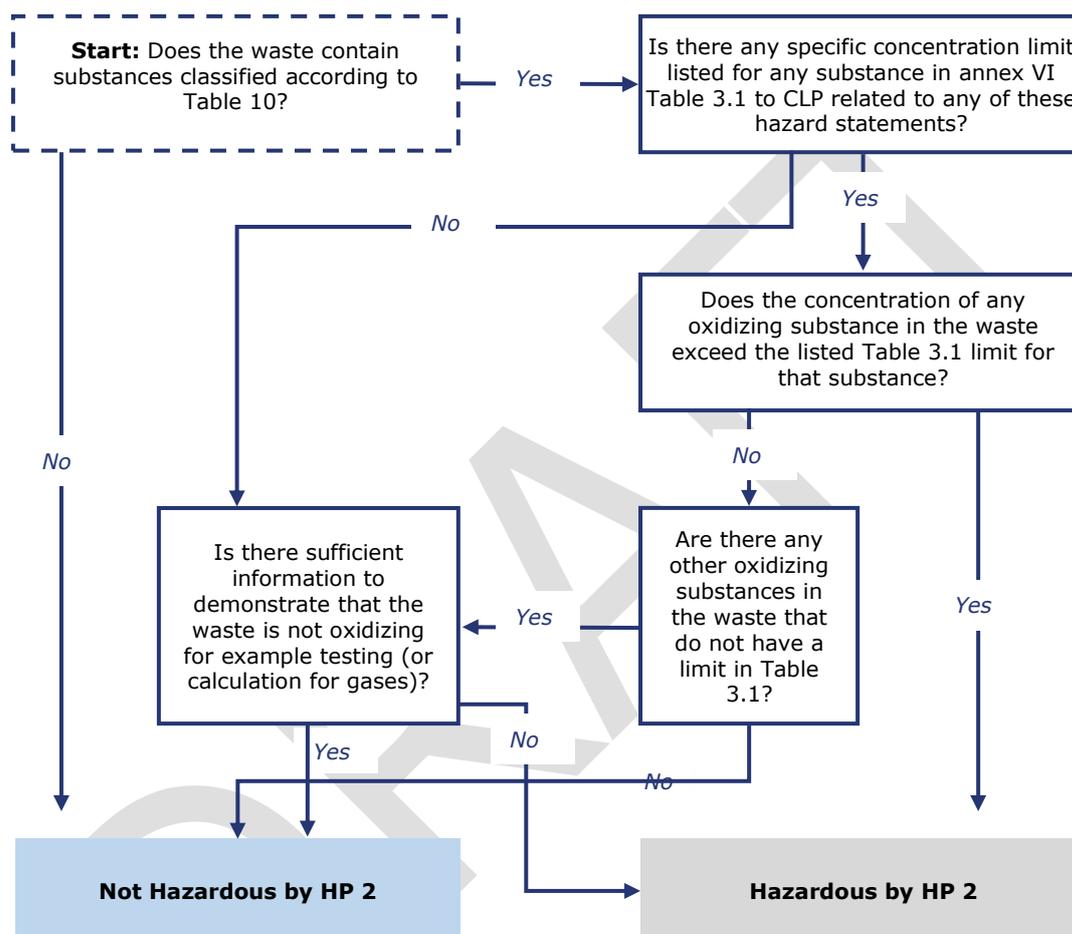
2136 **Calculation method for oxidising gases**

2137 Where a waste contains a substance assigned H270 it is possible to calculate whether
 2138 or not the waste displays HP 2. The calculation method is provided by ISO 10156 (as
 2139 amended) and should be applied in accordance with section 2.4 of [ECHA 2013].

2140

2141 **Flow chart**

2142 Figure 11 sets out the assessment process for HP 2.



2143

Figure 11: Flow chart for determination of HP 2 (Adjusted from [UK EA 2015])

2144

2145 **Test Methods**

2146 Part A of the Annex to the Test Methods Regulation provides the following test
 2147 methods which may be regarded in the assessment of HP 2 'Oxidising':

- 2148 ▪ A.17. Oxidising Properties (Solids)
- 2149 ▪ A.21. Oxidising Properties (Liquids)

2150 Wastes containing substances listed in Table 10 should be tested on oxidising
 2151 properties in accordance with [ECHA 2013]. Separate sections are provided in [ECHA
 2152 2013] for testing of mixtures containing:

- 2153 ▪ Oxidising gases (2.4)

2154 ▪ Oxidising liquids (2.13)

2155 ▪ Oxidising solids (2.14).

2156 A waste containing an oxidising substance, where the waste is classified by testing as
2157 H270, H271, or H272, displays HP 2.

2158

2159

DRAFT

C.3. Determining HP 3: Flammable

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 3 'Flammable' over 6 indents:

- *'flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C;*
- *flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;*
- *flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction;*
- *flammable gaseous waste: gaseous waste which is flammable in air at 20°C and a standard pressure of 101.3 kPa;*
- *water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities;*
- *other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.'*

The WFD further explains that:

'When a waste contains one or more substances classified by one of the following hazard class and category codes and hazard statement codes shown in Table 3 [see Table 11], the waste shall be assessed, where appropriate and proportionate, according to test methods. If the presence of a substance indicates that the waste is flammable, it shall be classified as hazardous by HP 3'

A waste containing substances that are classified with the hazard class, category and statement codes in Table 11 can be tested to show whether it displays that hazardous property or not. Alternatively a waste containing those substances, other than in trace amounts, can simply be assumed to be hazardous by HP 3.

Table 11: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents for the classification of wastes as hazardous by HP 3 Flammable

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description
Flam. Gas 1	H220	Extremely flammable gas
Flam. Gas 2	H221	Flammable gas
Aerosol 1	H222	Extremely flammable aerosol
Aerosol 2	H223	Flammable aerosol
Flam. Liq. 1	H224	Extremely flammable liquid and vapour
Flam. Liq.2	H225	Highly flammable liquid and vapour
Flam. Liq. 3	H226	Flammable liquid and vapour

Flam. Sol. 1 Flam. Sol. 2	H228	Flammable solid
Self-react. CD Self-react. EF Org. Perox. CD Org. Perox. EF	H242	Heating may cause a fire
Pyr. Liq. 1 Pyr. Sol. 1	H250	Catches fire spontaneously if exposed to air
Self-heat.1	H251	Self-heating: may catch fire
Self-heat. 2	H252	Self-heating in large quantities; may catch fire
Water-react. 1	H260	In contact with water releases flammable gases which may ignite spontaneously
Water-react. 2 Water-react. 3	H261	In contact with water releases flammable gases

2191

2192 Where a waste contains substances assigned H220 or H221 it is possible to calculate
2193 whether or not the waste displays HP 3 (fourth indent). The calculation method is
2194 provided by ISO 10156 and should be applied in accordance with section 2.2 of [ECHA
2195 2013].

2196 Where a waste contains substance assigned H260 or H261, i.e. a substance which is
2197 capable of releasing a highly flammable gas at a rate in excess of 1 litre of gas per
2198 kilogram of substance per hour when water is added, it is possible to calculate the
2199 minimum concentration of the substance in the waste that would make it hazardous
2200 by HP 3 (fifth indent). Below this concentration the waste is not considered hazardous
2201 pursuant to HP 3 (fifth indent). At or above the concentration the waste is considered
2202 to be HP 3, or tested. Examples of substances and calculation is provided by [UK EA
2203 2015] and is displayed in the following section.

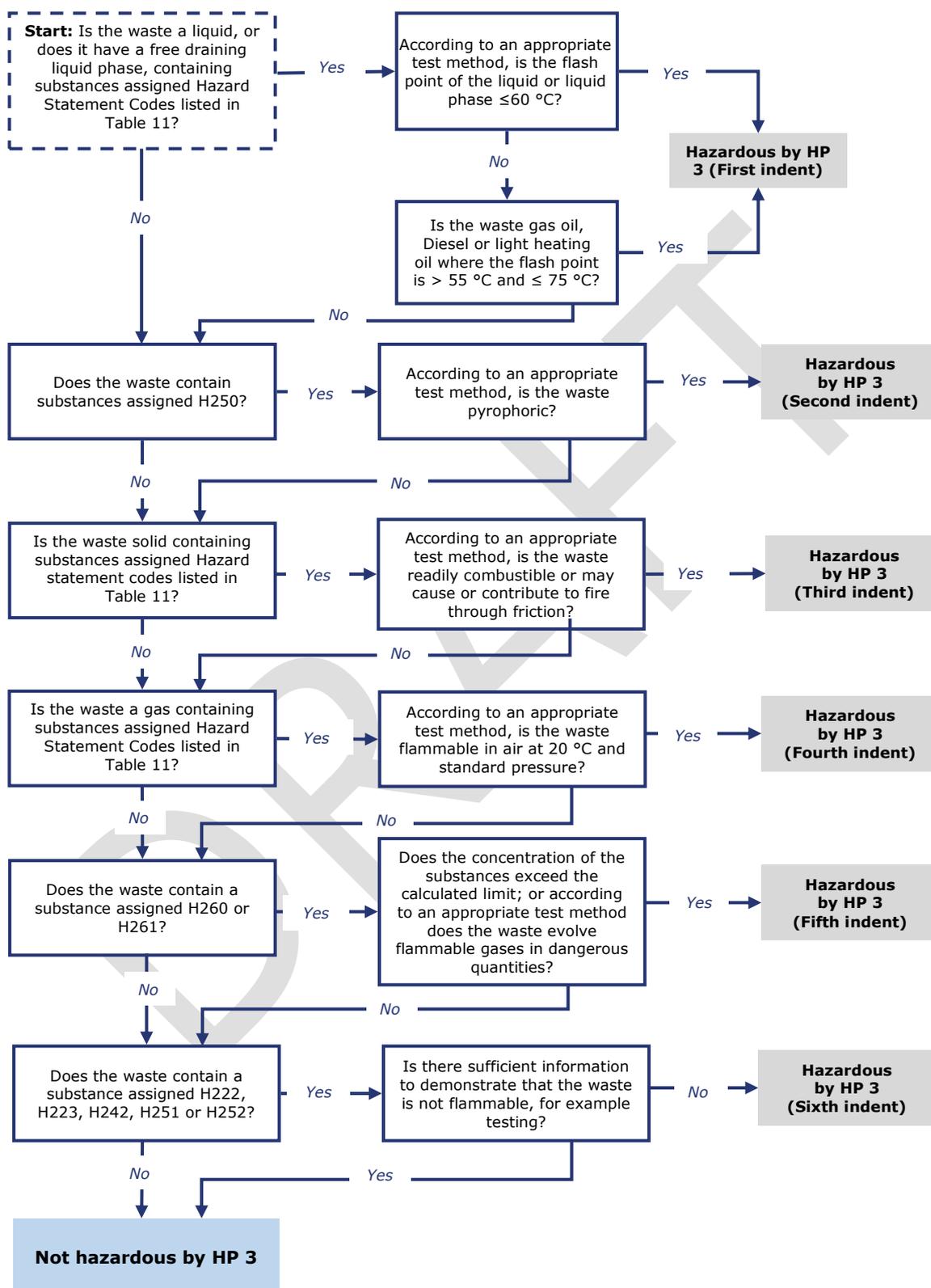
2204 A brief example for an assessment of organic peroxides according HP 3 based on
2205 assessing HP1 can be found in chapter A.5.7.

2206

2207

2208 **Flow chart**

2209 Figure 12 sets out the determination process for HP 3.



2210

2211 **Figure 12: Flow chart for determination of HP 3 (Adjusted from [UK EA 2015])**

2212 Calculation method for HP 3 (fifth indent)

2213 As already indicated, when a substance is assigned H260 or H261 if it is capable of
2214 releasing a highly flammable gas at a rate in excess of 1 litre of gas per kilogram of
2215 substance per hour when water is added.

2216 If a waste contains a substance assigned H260 or H261, it is possible to calculate the
2217 limiting concentration of the substance in the waste that would make it hazardous by
2218 HP 3 (fifth indent). The background of this calculation method is, that the amount of
2219 the reactive substance needed to generate one litre of the flammable gas is
2220 calculated, based on stoichiometry and by applying the volume of a mol of gas at
2221 standard pressure and temperature. The concentration limit of one litre is taken from
2222 test method A.12. Flammability (Contact with water) as described in Part A of the
2223 Annex to the Test Method Regulation.

2224 Below this concentration the waste will not be hazardous as a result of HP 3 (fifth
2225 indent). At or above the concentration the waste should be assumed to be HP 3, or
2226 tested. An example of how to do the calculation is taken from [UK EA 2015] and
2227 displayed below in Box 15.



2228

Box 15: Calculation method HP 3 (fifth indent) [UK EA 2015]

2229

2230 Threshold limits derived from the calculation for some H260 and H261 substances are
2231 given in Table 12.

2232
2233
2234**Table 12: Examples of substances which may cause a waste to exhibit HP 3 Flammable (fifth indent) and their threshold concentrations¹³ [UK EA 2015]**

Substance name	Hazard Statement Codes associated with HP3 (fifth indent)	Equation	Concentration limit for waste to be H3-A (fifth indent) (%) ¹
Lithium	H260	$2\text{Li} + 2\text{H}_2\text{O} \rightarrow 2\text{LiOH} + \text{H}_2$	0.1
Sodium	H260	$2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$	0.2
Magnesium powder (pyrophoric)	H261	$\text{Mg} + 2\text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2 + \text{H}_2$	0.1
Aluminium powder (pyrophoric) Aluminium powder (stabilised)	H261	$2\text{Al} + 6\text{H}_2\text{O} \rightarrow 2\text{Al}(\text{OH})_3 + 3\text{H}_2$	0.1
Potassium	H260	$2\text{K} + 2\text{H}_2\text{O} \rightarrow 2\text{KOH} + \text{H}_2$	0.4
Calcium	H261	$\text{Ca} + 2\text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + \text{H}_2$	0.2
Zinc powder / zinc dust (pyrophoric)	H260	$\text{Zn} + 2\text{H}_2\text{O} \rightarrow \text{Zn}(\text{OH})_2 + \text{H}_2$	0.3
Zirconium powder (pyrophoric)	H260	$\text{Zr} + 4\text{H}_2\text{O} \rightarrow \text{Zr}(\text{OH})_4 + 2\text{H}_2$	0.2
Aluminium carbide	H260	$\text{Al}_4\text{C}_3 + 6\text{H}_2\text{O} \rightarrow 2\text{Al}_2\text{O}_3 + 3\text{CH}_4$	0.2
Lithium aluminium hydride	H260	$\text{LiAlH}_4 + \text{H}_2\text{O} \rightarrow \text{LiAl}(\text{OH})_2 + 4\text{H}_2$	0.1
Sodium hydride	H260	$\text{NaH} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2$	0.1
Calcium hydride	H260	$\text{CaH}_2 + 2\text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + 2\text{H}_2$	0.1
Calcium carbide	H260	$\text{CaC}_2 + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + \text{C}_2\text{H}_2$	0.3
Calcium phosphide	H260	$\text{Ca}_3\text{P}_2 + 6\text{H}_2\text{O} \rightarrow 2\text{PH}_3 + 3\text{Ca}(\text{OH})_2$	0.4
Aluminium phosphide	H260	$\text{AlP} + 3\text{H}_2\text{O} \rightarrow \text{PH}_3 + \text{Al}(\text{OH})_3$	0.3
Magnesium phosphide	H260	$\text{Mg}_3\text{P}_2 + 6\text{H}_2\text{O} \rightarrow 2\text{PH}_3 + 3\text{Mg}(\text{OH})_2$	0.3

¹³ This is not a complete list of such substances.

Trizinc diphosphide	H260	$Zn_3P_2 + 6H_2O \rightarrow 2PH_3 + 3Zn(OH)_2$	0.6
Diethyl (ethyldimethyl-silanolato) aluminium	H260	$(C_2H_5)_2Si(CH_3)_2C_2H_5Al + 2H_2O \rightarrow 2C_2H_6 + Al(OH)_2Si(CH_3)_2C_2H_5$	0.4

2235 Notes:

2236 ¹ Rounded to one decimal place.

2237

2238 Test Methods

2239 Part A of the Annex to the Test Methods Regulation provides the following test
2240 methods which may be regarded in the assessment of HP 3 'Flammable':

- 2241 ▪ A.10. Flammability (Solids)
- 2242 ▪ A.11. Flammability (Gases)
- 2243 ▪ A.12. Flammability (Contact with water)

2244 Wastes containing substances listed in Table 11 should be tested for flammable
2245 properties in accordance with [ECHA 2013]. Separate sections are provided in [ECHA
2246 2013] for testing of mixtures containing:

- 2247 ▪ flammable gases (2.2)
- 2248 ▪ aerosols (2.3)
- 2249 ▪ flammable liquids (2.6)
- 2250 ▪ flammable solids (2.7)
- 2251 ▪ self-reactive substances and mixtures (2.8)
- 2252 ▪ pyrophoric liquids (2.9)
- 2253 ▪ pyrophoric solids (2.10)
- 2254 ▪ self-heating substances and mixtures (2.11)
- 2255 ▪ water reactive substances (2.12)
- 2256 ▪ organic peroxides (2.15).

2257

C.4. Determining HP 4: Irritant – skin irritation and eye damage

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 4 'Irritant' as:

'waste which on application can cause skin irritation or damage to the eye'

HP 4 is linked to HP 8 'Corrosive', since both HPs refer to the potential for harm or damage to tissue at different levels of severity. Regarding HP 8, consult chapter C.8 for further details.

Note that:

- Hazardous waste containing irritant substances can display irritant properties (depending on concentration);
- Hazardous wastes containing corrosive substances can display either corrosive or irritant properties dependent upon concentration.

Mechanical irritation produced by some substances is not included within the definition of HP 4.

The WFD further explains that:

When a waste contains one or more substances in concentrations above the cut-off value, that are classified by one of the following hazard class and category codes and hazard statement codes and one or more of the following concentration limits is exceeded or equalled, the waste shall be classified as hazardous by HP 4.

The cut-off value for consideration in an assessment for Skin corr. 1A (H314), Skin irrit. 2 (H315), Eye dam. 1 (H318) and Eye irrit. 2 (H319) is 1 %.

If the sum of the concentrations of all substances classified as Skin corr. 1A (H314) exceeds or equals 1 %, the waste shall be classified as hazardous according to HP 4.

If the sum of the concentrations of all substances classified as H318 exceeds or equals 10 %, the waste shall be classified as hazardous according to HP 4.

If the sum of the concentrations of all substances classified H315 and H319 exceeds or equals 20 %, the waste shall be classified as hazardous according to HP 4.

Note that wastes containing substances classified as H314 (Skin corr.1A, 1B or 1C) in amounts greater than or equal to 5 % will be classified as hazardous by HP 8. HP 4 will not apply if the waste is classified as HP 8.

Table 13: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 4

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description	Concentration limit (total of substances)
Skin Corr. 1A	H314	Causes severe skin burns and eye damage	≥1 % and <5 %

Eye Dam. 1	H318	Causes serious eye damage	≥ 10 %
Skin irrit. 2 and Eye irrit. 2	H315 and H319	Causes skin irritation and Causes serious eye irritation	≥ 20 % ¹⁴

2297

2298 An example for the assessment of wastes containing CaO and Ca(OH)₂ according HP 4
2299 can be found in chapter A.5.4.

2300 Where a waste contains a substance that is H314 Skin Corr.1A, 1B or 1C at a
2301 concentration ≥ 5 % see also HP 8 Corrosive (chapter C.8 of this document) as this
2302 waste shall be classified as hazardous by HP 8 and not by HP 4.

2303 Above mentioned concentration limits are applied to the known components of a
2304 waste. It may be difficult to identify all specific substances present in certain wastes.
2305 Where the waste is not 'Irritant' as a result of the known substances and some
2306 substances are still unknown, the pH value of the waste should be used for
2307 assessment (see Figure 13).

2308 A waste with a pH ≤ 2 or ≥ 11.5 should be considered HP 8 Corrosive unless both:

- 2309 ▪ an acid or alkali reserve test suggests that the classification as 'Corrosive' is not
2310 warranted, and
- 2311 ▪ further in vitro testing has confirmed that classification (as 'Irritant' or neither
2312 'Irritant'/'Corrosive')

2313 The acid/ alkali reserve test measures the buffering capacity of the waste. More
2314 information on acid/alkali reserve test can be found in 'Test No. 122: Determination of
2315 pH, Acidity and Alkalinity' within the OECD Guidelines for the Testing of Chemicals¹⁵ or
2316 in [Young et al. 1988].

2317

2318 **Cut-off values**

2319 The following cut-off values apply to the assessment:

- 2320 ▪ for H314, H315, H318 and H319 the cut off value is 1 %.

2321 An individual substance present at a concentration below this cut off value is not
2322 included in the total concentrations given in Table 13 and Figure 13.

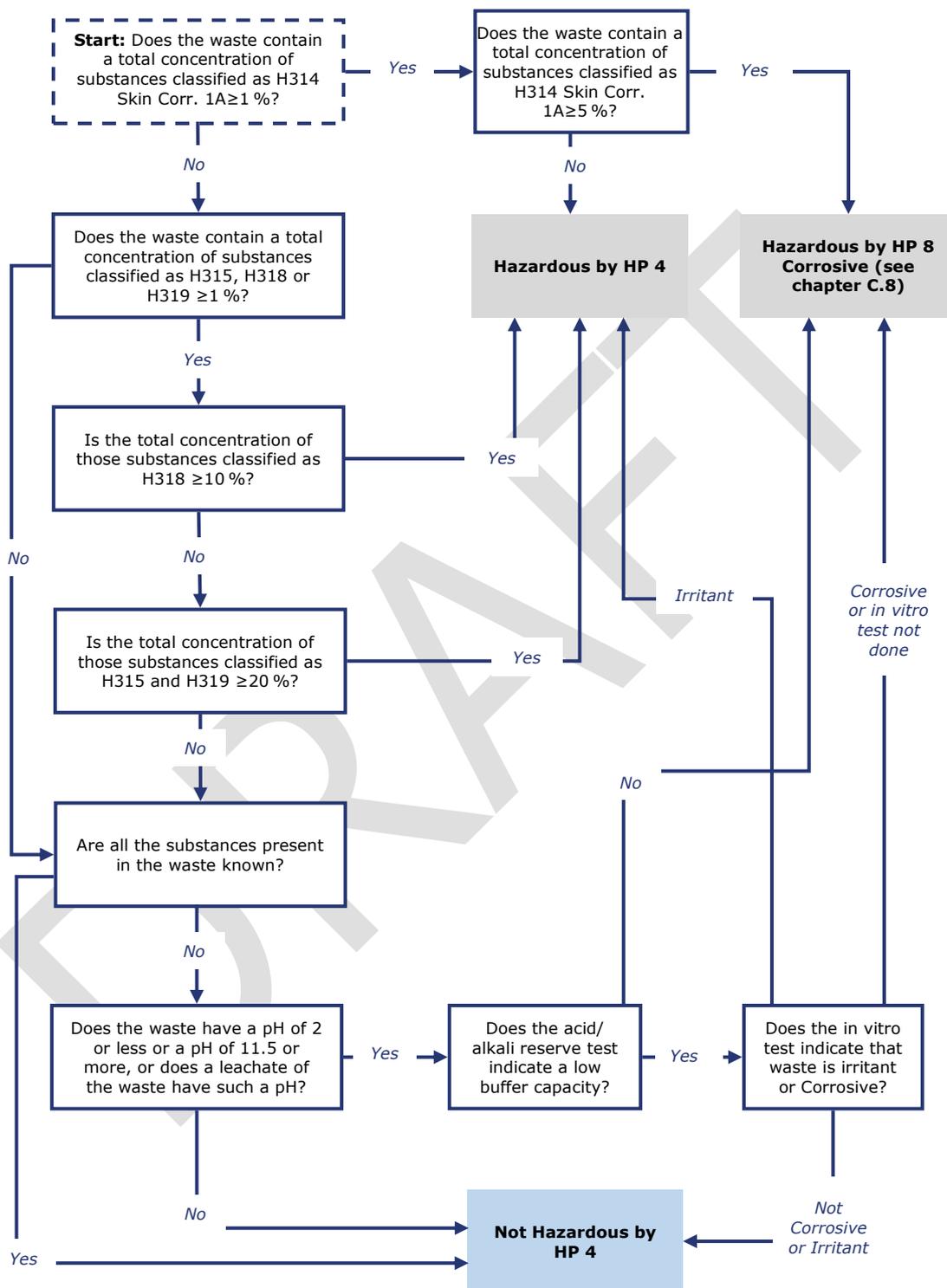
2323

¹⁴ Please be aware that the criteria of 20% for H315 and H319 may only be applied if the compound is classified as H315 and H319 [OVAM 2015]. If the compound is only classified as H315 or only as H319 the waste will not fall under HP4. For example sulphur is only classified as H315, not as H319. Therefore the presence of sulphur will not make a waste hazardous.

¹⁵ http://www.oecd-ilibrary.org/environment/test-no-122-determination-of-ph-acidity-and-alkalinity_9789264203686-en

2324 **Flow chart**

2325 Figure 13 sets out the assessment process for HP 4.



2326

Figure 13: Flow chart for the determination of HP 4 (Adjusted from [UK EA 2015])

2327

2328

2329 **Test Methods**

2330 A HP 4 assessment of a waste is to be done on the basis of

- 2331 ▪ identification of the individual substances in the waste;
- 2332 ▪ their classification;
- 2333 ▪ reference to concentration limits in Annex III to the WFD.

2334 If testing is considered to determine this hazard property, waste containing
2335 substances listed in Table 13 should be tested for irritant properties in accordance with
2336 the section 3.2 of [ECHA 2013]. A mixture assigned H315, H318 or H319 by this
2337 assessment is considered HP 4.

2338 If testing is considered, a combination of acid/ alkali reserve test and in-vitro testing is
2339 recommended. An example on how to integrate the acid/ alkali reserve and in-vitro
2340 testing into a general testing setting can be found in [UK EA 2015].

2341 As already described above, the acid/ alkali reserve test measures the buffering
2342 capacity of the waste. More information on acid/alkali reserve test can be found in
2343 'Test No. 122: Determination of pH, Acidity and Alkalinity' within the OECD Guidelines
2344 for the Testing of Chemicals or in [Young et al. 1988].

2345 Part B of the Annex to the Test Methods Regulation provides the following test method
2346 which may be regarded in the assessment of HP 4 'Irritant':

- 2347 ▪ B.46 In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method

2348 Test methods given in the Test Methods Regulation that rely on animal testing are not
2349 appropriate.¹⁶

2350 Further in-vitro methods may be available from other sources, such as the European
2351 Union Reference Laboratory for alternatives to animal testing.¹⁷

2352 Where a hazardous property of a waste has been assessed by a test and by using the
2353 concentrations of hazardous substances as indicated in Annex III to the WFD, the
2354 results of the test shall prevail.

2355

2356

¹⁶ See Annex to the LoW (point 2, indent 2): "A hazardous property can be assessed by using the concentration of substances in the waste as specified in Annex III to Directive 2008/98/EC or, unless otherwise specified in Regulation (EC) No 1272/2008, by performing a test in accordance with Regulation (EC) No 440/2008 or other internationally recognised test methods and guidelines, taking into account Article 7 of Regulation (EC) No 1272/2008 as regards animal and human testing."

¹⁷ <https://eurl-ecvam.jrc.ec.europa.eu/>

C.5. Determining HP 5: Specific Target Organ Toxicity (STOT) / Aspiration Toxicity

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 5 'Specific Target Organ Toxicity (STOT)/ Aspiration Toxicity' as:

'waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration'

The WFD further explains that:

'When a waste contains one or more substances classified by one or more of the following hazard class and category codes and hazard statement codes shown in Table 4 [see Table 14 of this document], and one or more of the concentration limits in Table 4 [see Table 14 of this document] is exceeded or equalled, the waste shall be classified as hazardous according to HP 5. When substances classified as STOT are present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 5.'

'When a waste contains one or more substances classified as Asp. Tox. 1 and the sum of those substances exceeds or equals the concentration limit, the waste shall be classified as hazardous by HP 5 only where the overall kinematic viscosity (at 40°C) does not exceed 20.5 mm²/s.[Footnote: The kinematic viscosity shall only be determined for fluids]'

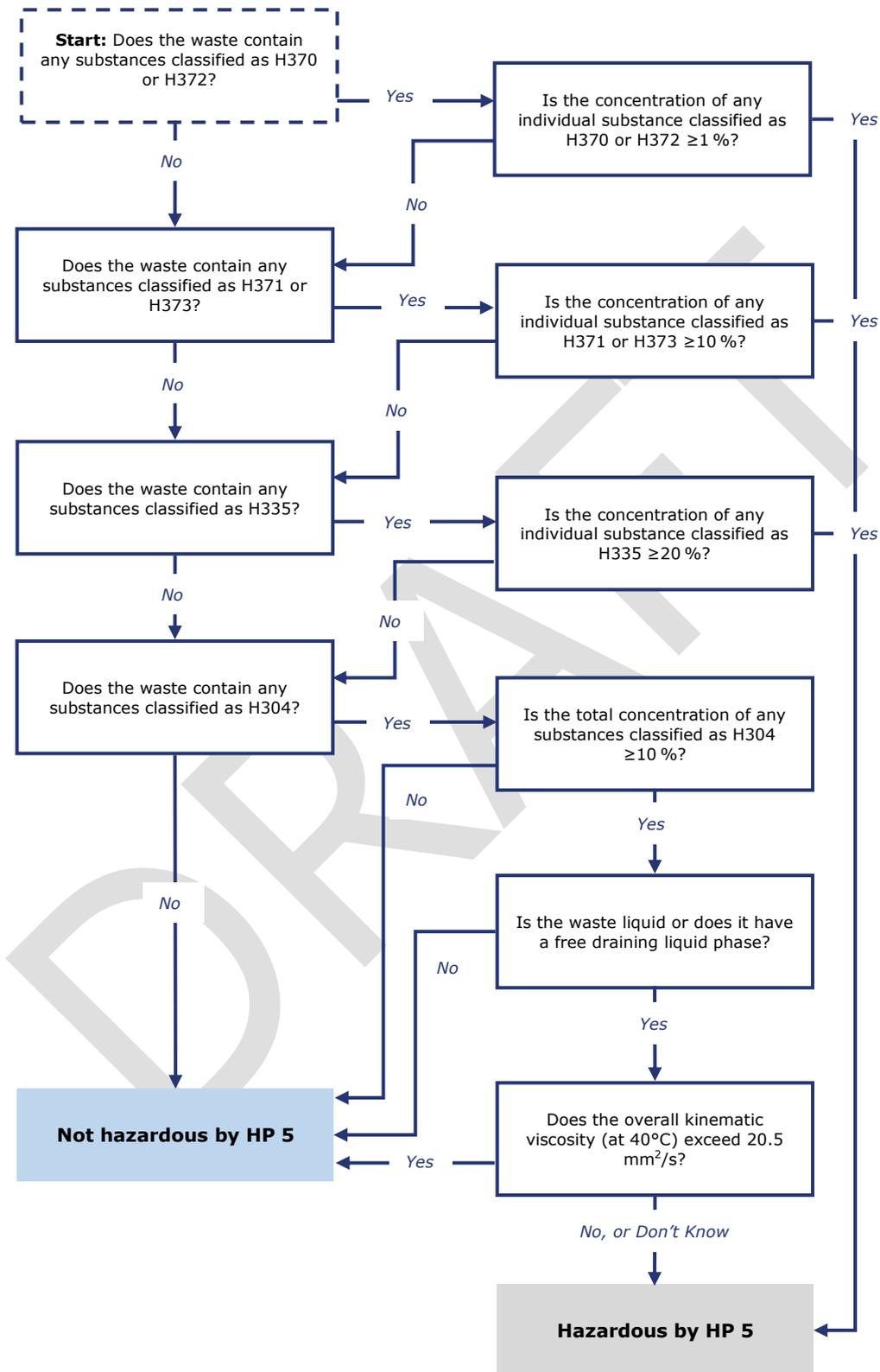
Table 14: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 5

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description	Concentration limit
STOT SE 1	H370	Causes damage to organs	≥ 1 % (Indiv.)
STOT SE 2	H371	May cause damage to organs	≥ 10 % (Indiv.)
STOT SE 3	H335	May cause respiratory irritation	≥ 20 % (Indiv.)
STOT RE 1	H372	Causes damage to organs through prolonged or repeated exposure	≥ 1 % (Indiv.)
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure	≥ 10 % (Indiv.)
Asp. Tox. 1	H304	May be fatal if swallowed and enters airways	≥ 10 %(total)

An example for the assessment of wastes containing CaO and Ca(OH)₂ according HP 5 can be found in chapter A.5.4.

2387 **Flow chart**

2388 Figure 14 sets out the determination process for the HP 5.



2389

Figure 14: Flow chart for the assessment of HP5 (Adjusted from [UK EA 2015])

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2391

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Test Methods

2393

A HP 5 assessment of a waste is made based

2394

- on the identification of the individual substances in the waste;

2395

- their classification;

2396

- reference to concentration limits.

2397

If testing is considered when determining this hazard property, waste containing substances listed in Table 14 should be assessed for specific target organ toxicity and aspiration toxicity properties in accordance with the section 3.8 of [ECHA 2013].

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Test methods given in the Test Methods Regulation that rely on animal testing are not appropriate.¹⁸ Further in-vitro methods may be available from other sources, such as the European Union Reference Laboratory for alternatives to animal testing.¹⁹

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Where a hazardous property of a waste has been assessed by a test and by using the concentrations of hazardous substances as indicated in Annex III to the WFD, the results of the test shall prevail.

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¹⁸ See Annex to the LoW (point 2, indent 2): "A hazardous property can be assessed by using the concentration of substances in the waste as specified in Annex III to Directive 2008/98/EC or, unless otherwise specified in Regulation (EC) No 1272/2008, by performing a test in accordance with Regulation (EC) No 440/2008 or other internationally recognised test methods and guidelines, taking into account Article 7 of Regulation (EC) No 1272/2008 as regards animal and human testing."

¹⁹ <https://eurl-ecvam.jrc.ec.europa.eu/>

C.6. Determining HP 6: Acute Toxicity

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 6 'Acute Toxicity' as:

'waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure'.

The WFD further explains that:

If the sum of the concentrations of all substances contained in a waste, classified with an acute toxic hazard class and category code and hazard statement code given in Table 5 [see Table 15 of this document], exceeds or equals the threshold given in that table, the waste shall be classified as hazardous by HP 6. When more than one substance classified as acute toxic is present in a waste, the sum of the concentrations is required only for substances within the same hazard category.

Cut-off values

The following cut-off values apply to the assessment:

- for H300, H310, H330, H301, H311, and H331 : 0.1 %
- for H302, H312, H332): 1 %.

An individual substances present at a concentration below the cut off, for a hazard statement code assigned to it, is not included in the sum of the concentrations for that hazard class and category code.

Table 15: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 6

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description	Concentration limit (sum of substances)
Acute Tox.1 (Oral)	H300	Fatal if swallowed	≥ 0.1 %
Acute Tox. 2 (Oral)	H300	Fatal if swallowed	≥ 0.25 %
Acute Tox. 3 (Oral)	H301	Toxic if swallowed	≥ 5 %
Acute Tox.4 (Oral)	H302	Harmful if swallowed	≥ 25 %
Acute Tox.1 (Dermal)	H310	Fatal in contact with skin	≥ 0.25 %
Acute Tox.2 (Dermal)	H310	Fatal in contact with skin	≥ 2.5 %

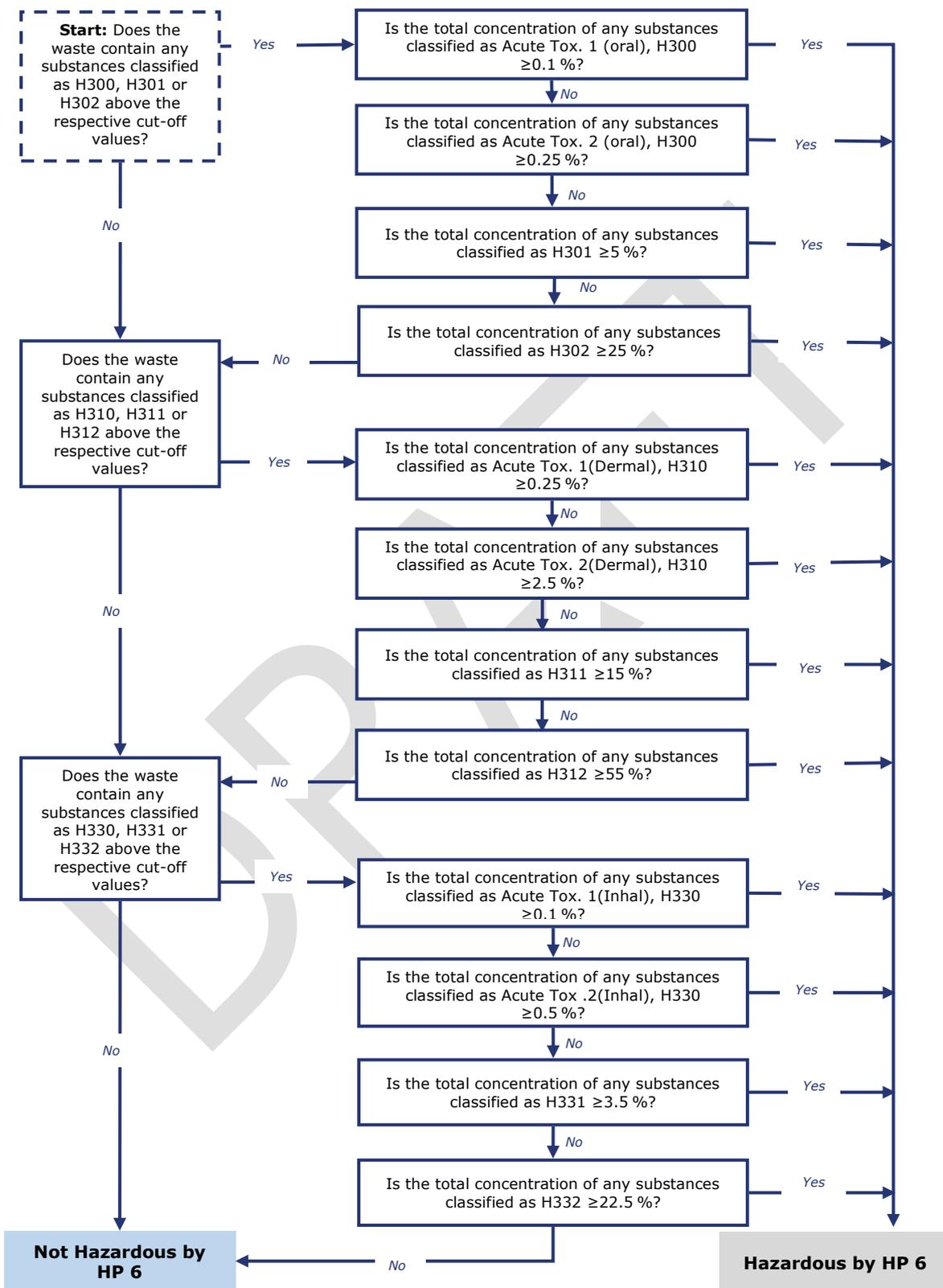
Acute Tox.3 (Dermal)	H311	Toxic in contact with skin	$\geq 15\%$
Acute Tox. 4 (Dermal)	H312	Harmful in contact with skin	$\geq 55\%$
Acute Tox.1 (Inhal.)	H330	Fatal if inhaled	$\geq 0.1\%$
Acute Tox.2 (Inhal.)	H330	Fatal if inhaled	$\geq 0.5\%$
Acute Tox. 3 (Inhal.)	H331	Toxic if inhaled	$\geq 3.5\%$
Acute Tox. 4 (Inhal.)	H332	Harmful if inhaled	$\geq 22.5\%$

2434

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2435 **Flow chart**

2436 Figure 15 sets out the determination process for HP 6.



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2438

Figure 15: Flow chart for the determination of HP 6 (Adjusted from [UK EA 2015])

2439

2440 Test Methods

2441 A HP 6 assessment of a waste is to be made on the basis of

- 2442 ▪ the identification of the individual substances in the waste;
- 2443 ▪ their classification;
- 2444 ▪ reference to concentration limits.

2445 If testing is considered to determining this hazard property, waste containing
2446 substances listed in Table 15 should be assessed for acute toxicity properties in
2447 accordance with the section 3.1 of [ECHA 2013].

2448 Test methods given in the Test Methods Regulation that rely on animal testing are not
2449 appropriate.²⁰ Further in-vitro methods may be available from other sources, such as
2450 the European Union Reference Laboratory for alternatives to animal testing.²¹

2451 Where a hazardous property of a waste has been assessed by a test and by using the
2452 concentrations of hazardous substances as indicated in Annex III to the WFD, the
2453 results of the test shall prevail.

2454

2455

²⁰ See Annex to the LoW (point 2, indent 2): "A hazardous property can be assessed by using the concentration of substances in the waste as specified in Annex III to Directive 2008/98/EC or, unless otherwise specified in Regulation (EC) No 1272/2008, by performing a test in accordance with Regulation (EC) No 440/2008 or other internationally recognised test methods and guidelines, taking into account Article 7 of Regulation (EC) No 1272/2008 as regards animal and human testing."

²¹ <https://eurl-ecvam.jrc.ec.europa.eu/>

C.7. Determining HP 7: Carcinogenic

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 7 'Carcinogenic' as:

'waste which induces cancer or increases its incidence'

The WFD further explains that:

'When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 6 [see Table 16 of this document], the waste shall be classified as hazardous by HP 7. When more than one substance classified as carcinogenic is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 7.'

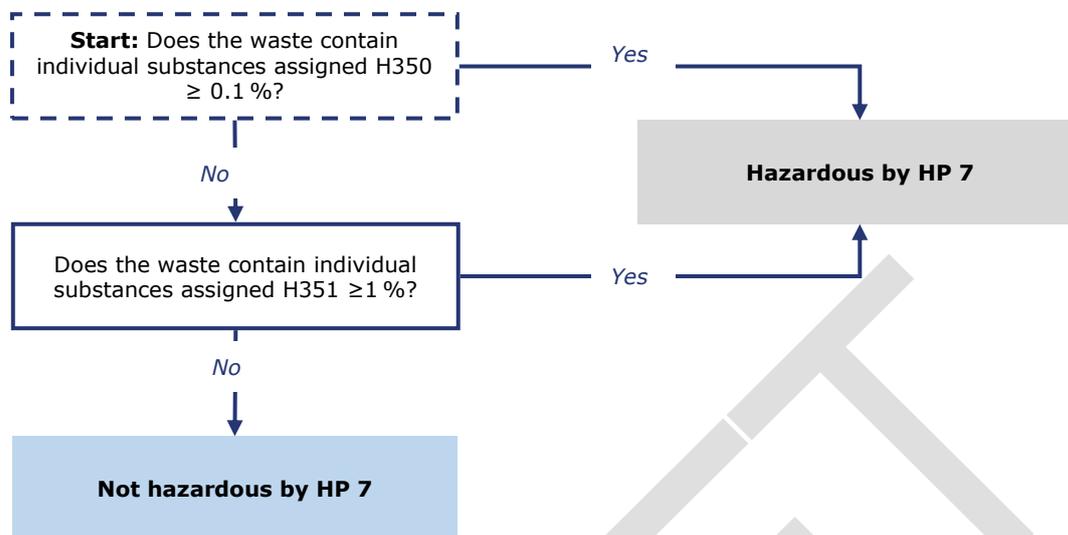
Table 16: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 7

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description	Concentration limit (Individual substance)
Carc. 1A	H350	May cause cancer	≥ 0.1 %
Carc. 1B			
Carc. 2	H351	Suspected of causing cancer	≥ 1.0 %

An example for the assessment of asbestos according HP 7 can be found in chapter A.5.3

2477 **Flow chart**

2478 Figure 16 sets out the determination process for HP 7.



2479

Figure 16: Flow chart for the determination of HP 7 (Adjusted from [UK EA 2015])

2480

2481 **Test Methods**

2482 A HP 7 assessment of a waste is to be done based on

- 2483 ▪ the identification of the individual substances in the waste;
- 2484 ▪ their classification;
- 2485 ▪ reference to concentration limits.

2486 If testing is considered to determining this hazard property, waste containing
 2487 substances listed in Table 16 should be assessed for carcinogenic properties in
 2488 accordance with the section 3.6 of [ECHA 2013].

2489 Please note that testing to determine carcinogenicity is neither envisaged for waste
 2490 nor for mixtures in the CLP Regulation. Mutagenicity tests (see chapter C.11) are
 2491 considered in many cases to be a suitable indicator of potential carcinogenicity.

2492

2493

C.8. Determining HP 8: Corrosive

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 8 'Corrosive' as:

'waste which on application can cause skin corrosion'

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. See C.4 for further details.

The WFD further explains that:

'When a waste contains one or more substances classified as Skin corr.1A, 1B or 1C (H314) and the sum of their concentrations exceeds or equals 5 %, the waste shall be classified as hazardous by HP 8.'

Table 17: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 8

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description	Concentration limit (Sum of substances)
Skin corr. 1A, 1B, or 1C	H314	Causes severe skin burns and eye damage	≥ 5 %

For cases where a waste contains

- a substance to be classified as H314 Skin Corr.1A
- at a concentration $\geq 1\%$ and $\leq 5\%$

see also HP 4 Irritant (chapter C.4 of this document).

Cut-off values

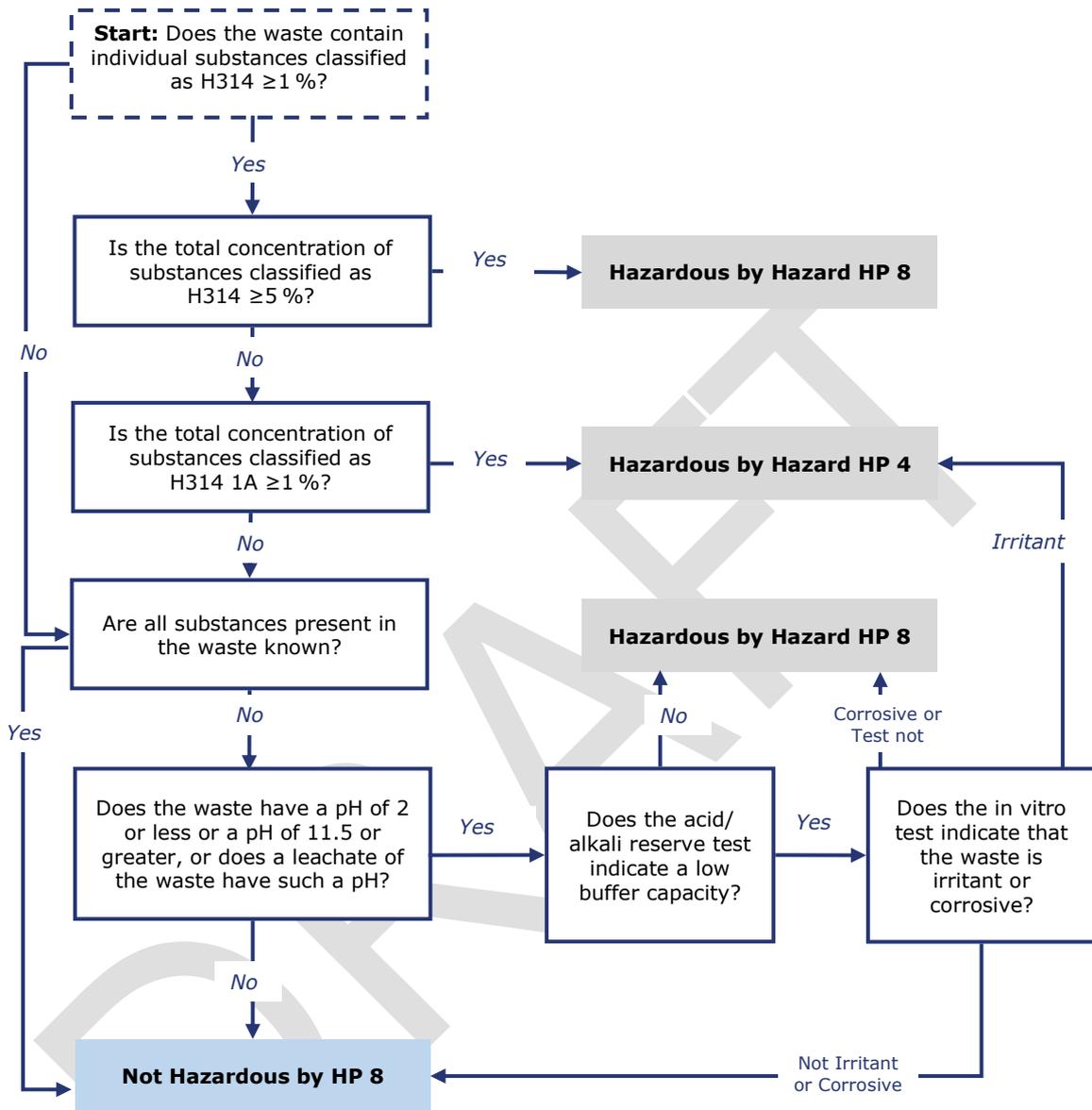
The following cut-off values apply to the assessment:

- For H314 : 1 %.

An individual substance present at a concentration below this cut off value is not included in the sum of the concentrations for H314.

2522 **Flow chart**

2523 Figure 17 sets out the determination process for HP 8.



2524

Figure 17: Flow chart for the determination of HP 8 (Adjusted from [UK EA 2015])

2525

2526

2527 **Test Methods**

2528 A HP 8 assessment of a waste is made on the basis of

- 2529 ▪ identification of the individual substances in the waste;
- 2530 ▪ their classification;
- 2531 ▪ reference to concentration limits in Annex III of the Waste Framework Directive.

2532 If testing is considered to determining this hazard property, waste containing
 2533 substances listed in Table 17 should be assessed for corrosive and irritant properties

2534 in accordance with the section 3.2 of [ECHA 2013]. A mixture assigned H314 by this
2535 assessment is considered as hazardous by HP 8.

2536 Part B of the Annex to the Test Methods Regulation provides the following in-vitro test
2537 methods which may be regarded in the assessment of HP 8 'Corrosive':

- 2538 ▪ B.40. In Vitro Skin Corrosion: Transcutaneous Electrical Resistance Test (TER)
- 2539 ▪ B.40 BIS. In Vitro Skin Corrosion: Human Skin Model Test

2540 Test methods given in the Test Methods Regulation that rely on animal testing are not
2541 appropriate.²²

2542 Where a hazardous property of a waste has been assessed by a test and by using the
2543 concentrations of hazardous substances as indicated in Annex III to the WFD, the
2544 results of the test shall prevail.

2545

2546

²² See Annex to the LoW (point 2, indent 2): "A hazardous property can be assessed by using the concentration of substances in the waste as specified in Annex III to Directive 2008/98/EC or, unless otherwise specified in Regulation (EC) No 1272/2008, by performing a test in accordance with Regulation (EC) No 440/2008 or other internationally recognised test methods and guidelines, taking into account Article 7 of Regulation (EC) No 1272/2008 as regards animal and human testing."

2547 C.9. Determining HP 9: Infectious

2548 Definition and further description of Annex III to WFD

2549 Annex III to the WFD defines HP 9 'Infectious' as:

2551 *'waste containing viable micro-organisms or their toxins which are known or*
 2552 *reliably believed to cause disease in man or other living organisms.'*

2553 The WFD further explains that:

2554 *'The attribution of HP 9 shall be assessed by the rules laid down in reference*
 2555 *documents or legislation in the Member States.'*

2556 Remarks on the assessment process for HP 9

2557 Toxins from micro-organisms have to be assessed analogously to chemical substances
 2558 by considering their assigned hazard statement codes and associated hazardous
 2559 properties. There are no hazard statement codes for infectious micro-organisms as
 2560 they are not considered as hazardous substances under the CLP Regulation.

2561 The assessment of HP 9 depends on a reference to categories of specific risk groups of
 2562 organisms according their potential to cause and spread infection and their potential
 2563 clinical treatment [UNEP 2004].

2564 Therefore [WHO 2004] provides a widely recognized system categorising organisms
 2565 according four risk groups:

- 2566 ▪ Risk Group 4 (high individual risk, high community risk);
- 2567 ▪ Risk Group 3 (high individual risk, low community risk);
- 2568 ▪ Risk Group 2 (moderate individual risk, low community risk);
- 2569 ▪ Risk Group 1 (low individual and community risk).

2570 More information can be found in [WHO 2004]. [UN 2015] has taken up this approach
 2571 and set up an indicative list of infectious substances (see Table 18).

2572 **Table 18: Indicative examples of infectious substances included in**
 2573 **category A taken from Table 2.6.3.2.2.1 in [UN 2015]**

UN Number and Proper Shipping Name	Micro-organism
Indicative examples of infectious substances included in category A in any form unless otherwise indicated	
UN 2814 Infectious substances affecting humans	<ul style="list-style-type: none"> ▪ Bacillus anthracis (cultures only) ▪ Brucella abortus (cultures only) ▪ Brucella melitensis (cultures only) ▪ Brucella suis (cultures only) ▪ Burkholderia mallei - Pseudomonas mallei – Glanders (cultures only) ▪ Burkholderia pseudomallei – Pseudomonas pseudomallei (cultures only) ▪ Chlamydia psittaci - avian strains (cultures only) ▪ Clostridium botulinum (cultures only)

	<ul style="list-style-type: none"> ▪ <i>Coccidioides immitis</i> (cultures only) ▪ <i>Coxiella burnetii</i> (cultures only) ▪ Crimean-Congo haemorrhagic fever virus ▪ Dengue virus (cultures only) ▪ Eastern equine encephalitis virus (cultures only) ▪ <i>Escherichia coli</i>, verotoxigenic (cultures only) ▪ Ebola virus ▪ Flexal virus ▪ <i>Francisella tularensis</i> (cultures only) ▪ Guanarito virus ▪ Hantaan virus ▪ Hantaviruses causing haemorrhagic fever with renal syndrome ▪ Hendra virus ▪ Hepatitis B virus (cultures only) ▪ Herpes B virus (cultures only) ▪ Human immunodeficiency virus (cultures only) ▪ Highly pathogenic avian influenza virus (cultures only) ▪ Japanese Encephalitis virus (cultures only) ▪ Junin virus ▪ Kyasanur Forest disease virus ▪ Lassa virus ▪ Machupo virus ▪ Marburg virus ▪ Monkeypox virus ▪ <i>Mycobacterium tuberculosis</i> (cultures only) ▪ Nipah virus ▪ Omsk haemorrhagic fever virus ▪ Poliovirus (cultures only) ▪ Rabies virus (cultures only) ▪ <i>Rickettsia prowazekii</i> (cultures only) ▪ <i>Rickettsia rickettsii</i> (cultures only) ▪ Rift Valley fever virus (cultures only) ▪ Russian spring-summer encephalitis virus (cultures only) ▪ Sabia virus ▪ <i>Shigella dysenteriae</i> type 1 (cultures only) ▪ Tick-borne encephalitis virus (cultures only) ▪ Variola virus ▪ Venezuelan equine encephalitis virus (cultures only) ▪ West Nile virus (cultures only) ▪ Yellow fever virus (cultures only) ▪ <i>Yersinia pestis</i> (cultures only)
UN 2900 Infectious substances	<ul style="list-style-type: none"> ▪ African swine fever virus (cultures only) ▪ Avian paramyxovirus Type 1 - Velogenic Newcastle disease virus (cultures only)

affecting animals only	<ul style="list-style-type: none"> ▪ Classical swine fever virus (cultures only) ▪ Foot and mouth disease virus (cultures only) ▪ Lumpy skin disease virus (cultures only) ▪ Mycoplasma mycoides - Contagious bovine pleuropneumonia (cultures only) ▪ Peste des petits ruminants virus (cultures only) ▪ Rinderpest virus (cultures only) ▪ Sheep-pox virus (cultures only) ▪ Goatpox virus (cultures only) ▪ Swine vesicular disease virus (cultures only) ▪ Vesicular stomatitis virus (cultures only)
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2574

2575 Infectious substances (including wastes contaminated with such substances, such as
2576 medial or clinical wastes) in category A (as well as cultures of infectious substances of
2577 category B) must be classified under transport regulations, as

- 2578 ▪ UN 2814 "infectious substance, affecting humans", or
- 2579 ▪ UN 2900 "infectious substance, affecting animals only".

2580 Considering the classification applied by [UN 2015], without testing, a reasoned
2581 judgment can be made whether the waste under consideration has to be classified as
2582 hazardous waste by HP 9.

2583

2584 In this regard [UK EA 2015] mentions two general aspects for the assessment of HP 9:

- 2585 ▪ In case it has to be decided whether to assign the MH or MNH entry to the waste
2586 under consideration, the waste will be assigned the MH entry by virtue of HP 9 if it
2587 contains a toxin produced by a micro-organism in a concentration that the waste
2588 displays the hazardous property HP 5 (Specific Target Organ Toxicity/ Aspiration
2589 Toxicity, see chapter C.5) or HP 6 (Acute Toxicity, see chapter C.6). Wastes that
2590 might be infectious due to microbial toxins include dredgings or skimmings from
2591 waterbodies where a cyanobacterial bloom has occurred.
- 2592 ▪ It needs to be identified whether relevant healthcare wastes can be associated with
2593 infection and have to be classified as infectious.

2594 Regarding the latter aspect, relevant entries in the LoW (MH and MNH entries) that
2595 are linked to HP 9 are:

2596

18 01	Wastes from natal care, diagnosis, treatment or prevention of diseases in humans	
18 01 03*	wastes whose collection and disposal is subject to special requirements in order to prevent infection	MH
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)	MNH
2597		
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	MH

18 02 03 wastes whose collection and disposal is not subject to special requirements in order to prevent infection MNH

2598

2599 To distinguish between the mirror entries 18 01 03*/ 18 01 04 or respectively 18 02
2600 02*/ 18 02 03 [UK EA 2015] uses the term 'special requirement' as decisive criterion.
2601 The following information is directly taken from [UK EA 2015] which states that special
2602 requirements apply when:

- 2603 ▪ the source person or animal (the patient), is known or suspected to have a disease /
2604 infection caused by a micro-organism or its toxin and the waste is likely to contain
2605 the viable infectious agent or toxin; or
- 2606 ▪ the waste is, or is contaminated with, a culture or an enrichment of a micro-
2607 organism or its toxin that may cause disease in man or other living animals; or
- 2608 ▪ the waste may cause infection to any person or animal coming into contact with it.

2609 According to [UK EA 2015], special requirements should be determined by clinical
2610 assessment of each waste item and patient, as follows:

- 2611 ▪ clinical assessment should be carried out by a healthcare professional who is
2612 familiar with the type of waste generated, the current medical condition and, where
2613 feasible, the past medical history of the patient
- 2614 ▪ it is unlikely that it will always be practical, or possible, to identify specific
2615 pathogens or toxins within the waste when a patient first presents symptoms as
2616 definitive laboratory identification requires time to undertake. The procedure for
2617 determining whether a waste is considered hazardous by HP 9 must therefore,
2618 where this is the case, assume that the disease causing agent has not been
2619 confirmed and should be based on clinical assessment of whether an unidentified
2620 infection of any type is suspected or known.
- 2621 ▪ all pathogens and microbial toxins should be included in the assessment. HP 9 does
2622 not consider the severity of the disease.

2623 Any waste classified as hazardous by virtue of HP 9 Infectious shall be kept separately
2624 from other waste to prevent contamination.

2625 **Test Methods**

2626 There are no test methods given in the Test Methods Regulation.

2627

C.10. Determining HP 10: Toxic for reproduction

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 10 'Toxic for reproduction' as:

'waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring'

The WFD further explains that:

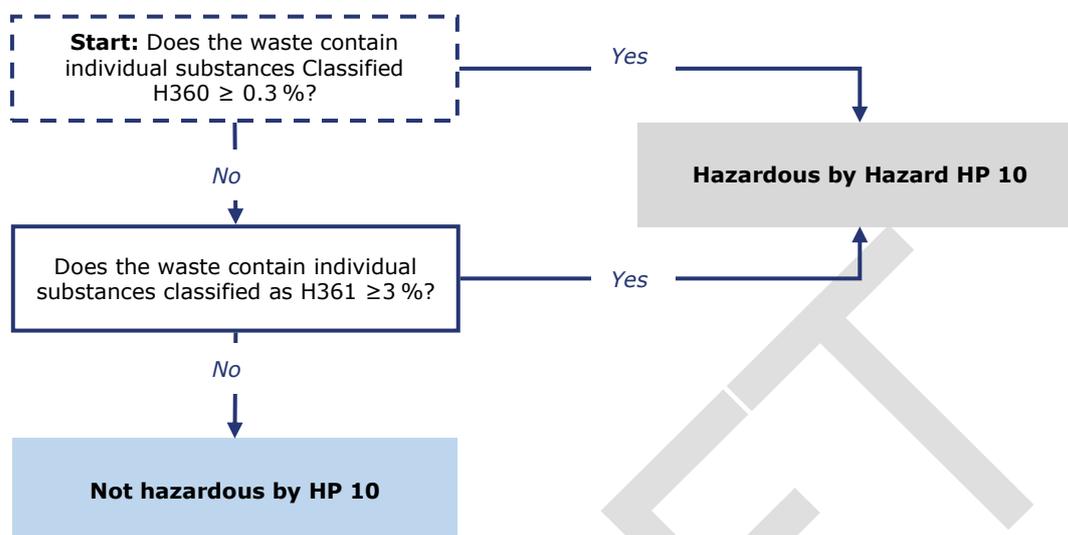
'When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 7 [see Table 19 of this document], the waste shall be classified hazardous according to HP 10. When more than one substance classified as toxic for reproduction is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 10.'

Table 19: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 10

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description	Concentration limit (Individual substance)
Repr. 1A	H360	<i>May damage fertility or the unborn child</i>	≥ 0.3 %
Repr. 1B			
Repr. 2	H361	<i>Suspected of damaging fertility or the unborn child</i>	≥ 3.0 %

2648 **Flow chart**

2649 Figure 18 sets out the assessment process for HP 10.



2650

Figure 18: Flow chart for the determination of HP 10 (Adjusted from [UK EA 2015])

2651

2652 **Test Methods**

2653 A HP 10 assessment of a waste is to be made on the basis of

- 2654 ▪ the identification of the individual substances in the waste;
- 2655 ▪ their classification;
- 2656 ▪ reference to concentration limits.

2657 If testing is considered to determining this hazard property, waste containing
 2658 substances listed in Table 19 should be assessed for toxic for reproduction properties
 2659 in accordance with the section 3.7 of [ECHA 2013].

2660 Please note that there are very limited options for testing reproductive toxicity
 2661 properties in-vitro. Test methods given in the Test Methods Regulation mainly rely on
 2662 animal testing and thus are not appropriate.²³ Further in-vitro methods may be
 2663 available from other sources, such as the European Union Reference Laboratory for
 2664 alternatives to animal testing.²⁴

2665

2666

²³ See Annex to the LoW (point 2, indent 2): "A hazardous property can be assessed by using the concentration of substances in the waste as specified in Annex III to Directive 2008/98/EC or, unless otherwise specified in Regulation (EC) No 1272/2008, by performing a test in accordance with Regulation (EC) No 440/2008 or other internationally recognised test methods and guidelines, taking into account Article 7 of Regulation (EC) No 1272/2008 as regards animal and human testing."

²⁴ <https://eurl-ecvam.jrc.ec.europa.eu/>

C.11. Determining HP 11: Mutagenic

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 11 'Mutagenic' as:

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

The WFD further explains that:

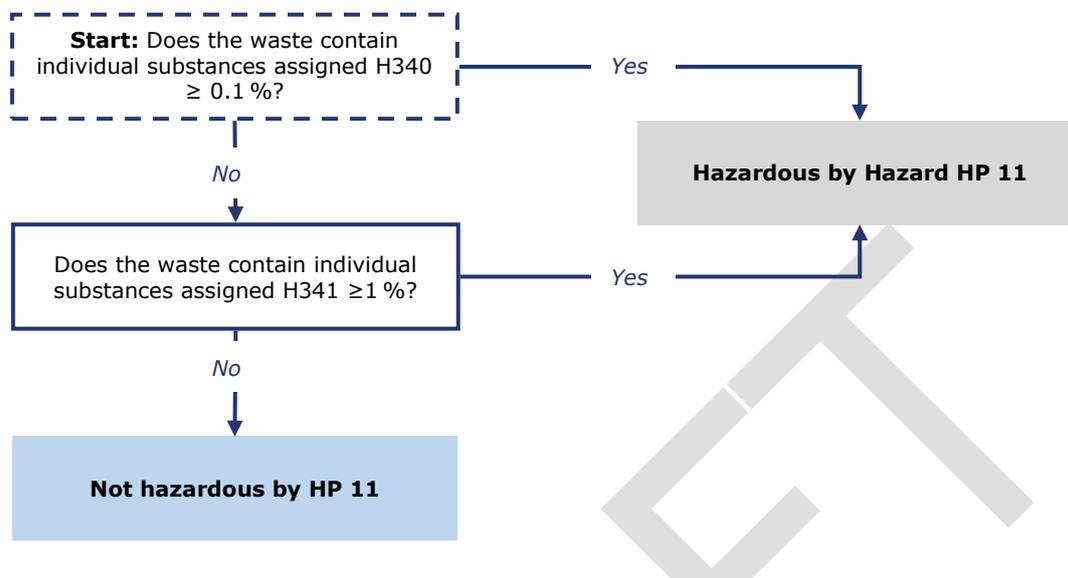
'When a waste contains a substance classified by one of the following hazard class and category codes and hazard statement codes and exceeds or equals one of the following concentration limits shown in Table 8 [see Table 20 of this document], the waste shall be classified hazardous according to HP 11. When more than one substance classified as toxic for reproduction is present in a waste, an individual substance has to be present at or above the concentration limit for the waste to be classified as hazardous by HP 11.'

Table 20: Hazard Class, Category Code(s) and Hazard Statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 11 Mutagenic

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description	Concentration limit (Individual substance)
Muta. 1A	H340	<i>May cause genetic defects</i>	≥ 0.1 %
Muta. 1B			
Muta. 2	H341	<i>Suspected of causing genetic defects</i>	≥ 1.0 %

2687 **Flow chart**

2688 Figure 19 sets out the determination process for HP 11.



2689

Figure 19: Flow chart for the determination of HP 11 (Adjusted from [UK EA 2015])

2690

2691

2692 **Test Methods**

2693 A HP 11 assessment of a waste is to be made on the basis of

- 2694 ▪ the identification of the individual substances in the waste;
- 2695 ▪ their classification;
- 2696 ▪ reference to concentration limits.

2697 If testing is considered to determining this hazard property, waste containing
 2698 substances listed in Table 20 should be assessed for mutagenic properties in
 2699 accordance with the section 3.5 of the [ECHA 2013].

2700 Part B of the Annex to the Test Methods Regulation provides the following in-vitro test
 2701 methods which may be regarded in the assessment of HP 11 'Mutagenic':

- 2702 ▪ B.10. Mutagenicity – In Vitro Mammalian Chromosome Aberration Test
- 2703 ▪ B.13/14. Mutagenicity: Reverse Mutation Test Using Bacteria
- 2704 ▪ B.15. Mutagenicity Testing and Screening for Carcinogenicity Gene Mutation –
 2705 *Saccharomyces Cerevisiae*
- 2706 ▪ B.17. Mutagenicity – In Vitro Mammalian Cell Gene Mutation Test

2707 Test methods given in the Test Methods Regulation that rely on animal testing are not
 2708 appropriate²⁵.

²⁵ Annex to the LoW (point 2, indent 2): "A hazardous property can be assessed by using the concentration of substances in the waste as specified in Annex III to Directive 2008/98/EC or, unless otherwise specified in Regulation (EC) No 1272/2008, by performing a test in accordance with Regulation (EC) No 440/2008 or other internationally recognised test methods and guidelines, taking into account Article 7 of Regulation (EC) No 1272/2008 as regards animal and human testing."

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C.12. Determining HP 12: Release of an acute toxic gas

Definition and further description of Annex III to WFD

Annex III to the WFD defines HP 12 'Release of an acute toxic gas' as:

'waste which releases acute toxic gases (Acute Tox. 1, 2 or 3) in contact with water or an acid'

The WFD further explains that:

'When a waste contains a substance assigned to one of the following supplemental hazards EUH029, EUH031 and EUH032, it shall be classified as hazardous by HP 12 according to test methods or guidelines.'

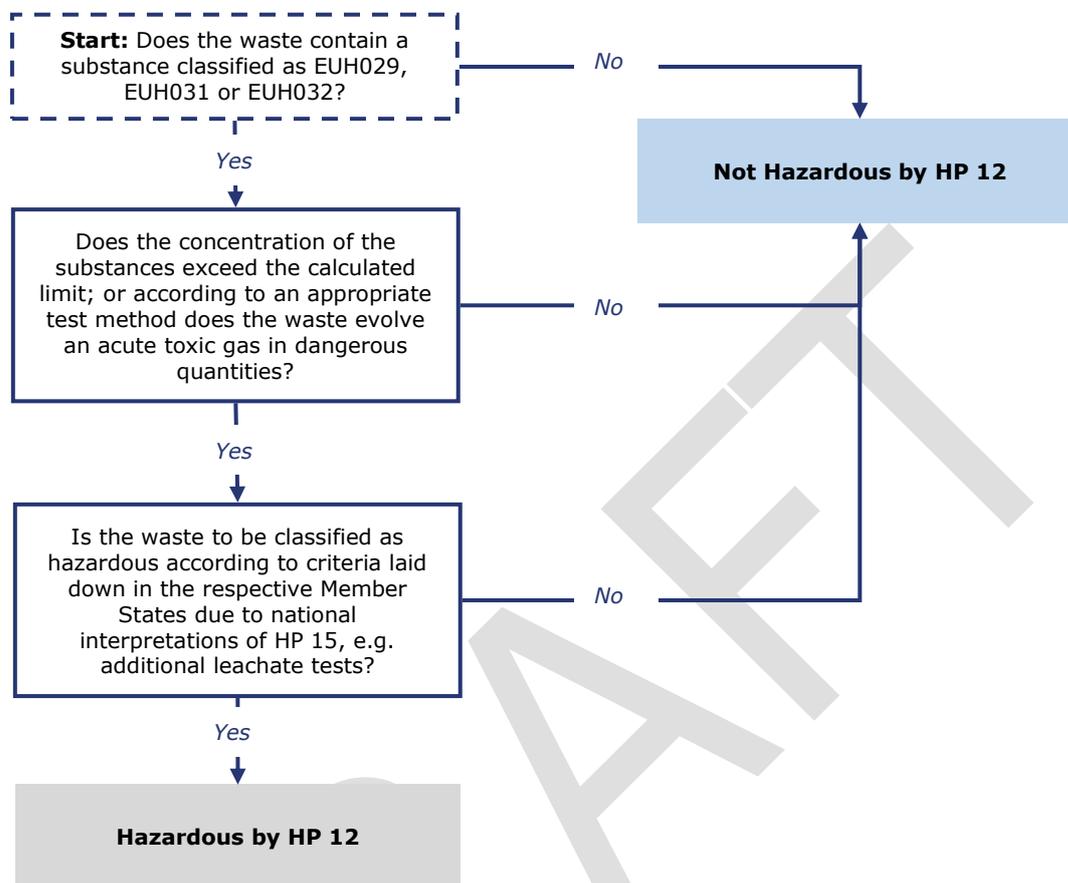
A waste containing substances that are assigned EUH029, EUH031 and EUH032 can be tested to show whether it displays that hazardous property or not. Otherwise a waste containing those substances can simply be assumed to be hazardous by HP 12.

Table 21: Hazard statements and supplemental hazards for waste constituents for the classification of wastes as hazardous by HP 12

Hazard Statement(s) / Supplemental Hazard(s)	
Contact with water liberates toxic gas	EUH029
Contact with acids liberates toxic gas	EUH031
Contact with acids liberates very toxic gas	EUH032

2730 **Flow chart**

2731 Figure 20 sets out the assessment process for HP 12.



2732

Figure 20: Flow chart for the determination of HP 12 (Adjusted from [UK EA 2015])

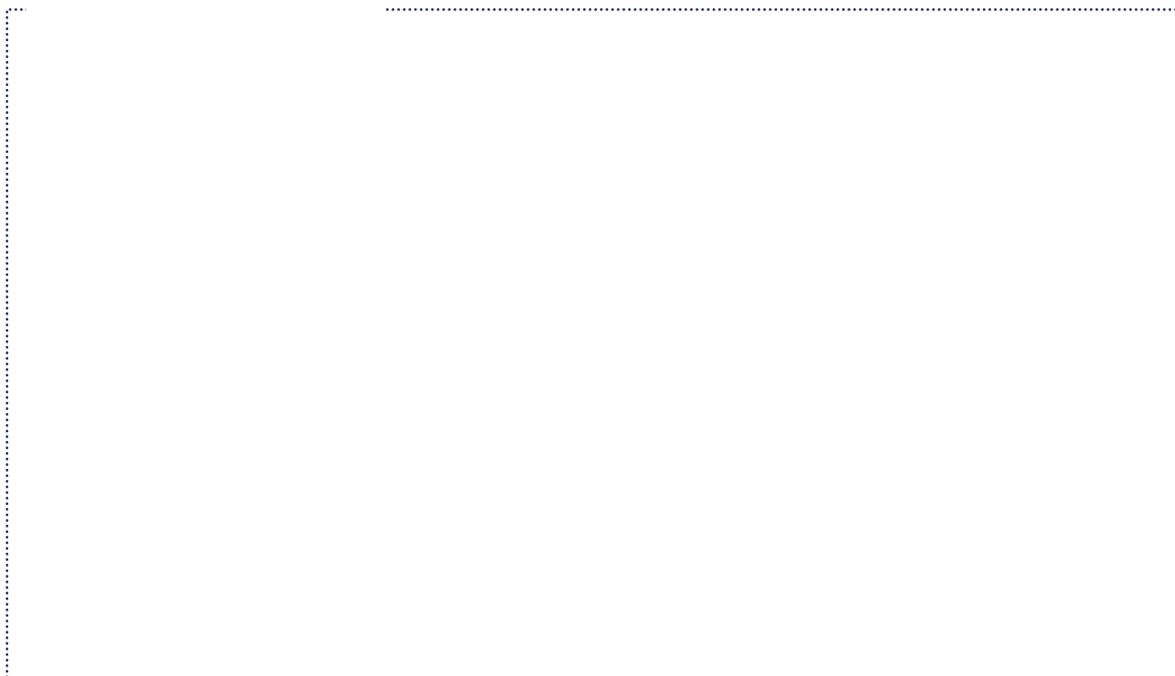
2733
27342735 **Calculation method**

2736 A detailed example on a possible calculation method for HP 12 is taken from [UK EA
2737 2015] and presented in the following.

2738 A substance is assigned EUH029, EUH031 or EUH032 if it is capable of releasing an
2739 acute toxic gas²⁶ when water or acid is added.

2740 If a waste contains a substance assigned EUH029, EUH031 or EUH032, it is possible to
2741 calculate the limiting concentration of the substance in the waste that would make it
2742 hazardous by HP 12. An example of how to do the calculation is given below in

²⁶ The gases that are likely to be released include hydrogen sulphide, hydrogen fluoride, carbon disulphide, sulphur dioxide, chlorine, nitrogen dioxide, ammonia and hydrogen cyanide.



2743

Box 16: Calculation method for HP 12 [UK EA 2015]

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2745 Threshold limits derived from the calculations for some EUH029, EUH031 or EUH032
 2746 substances are given below in Table 22.

Table 22: Examples of substances which may cause a waste to exhibit HP 12 and their threshold concentrations²⁷ [UK EA 2015]

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2748

Substance name	Hazard Statement Codes	Equation	Concentration limits for waste to be HP 12 (%) ¹
Phosphorous pentasulphide	EUH029	$P_2S_5 + 8H_2O \rightarrow 5H_2S + 2H_3PO_4$	0.1
3,5-dichloro-2,4-difluoro-benzoyl fluoride (DCDFBF)	EUH029	$DCDFBF + H_2O \rightarrow HF + \text{Prod.}$	1.0
Metam-sodium	EUH031	$CH_3NHCS_2Na + H^+ \rightarrow CH_3NH_2 + CS_2 + Na^+$	0.5
Barium sulphide	EUH031	$BaS + 2H^+ \rightarrow H_2S + Ba^{2+}$	0.8
Barium polysulphides	EUH031	$BaS_n + 2H^+ \rightarrow H_2S + Ba^{2+} + S_{n-1}$	0.8
Calcium sulphide	EUH031	$CaS + 2H^+ \rightarrow H_2S + Ca^{2+}$	0.3
Calcium polysulphides	EUH031	$CaS_n + 2H^+ \rightarrow H_2S + Ca^{2+} + S_{n-1}$	0.3

²⁷ This is not a complete list of substances with these properties.

Substance name	Hazard Statement Codes	Equation	Concentration limits for waste to be HP 12 (%) ¹
Potassium sulphide	EUH031	$K_2S + 2H^+ \rightarrow H_2S + 2K^+$	0.5
Ammonium polysulphides	EUH031	$(NH_4)_2S_n + 2H^+ \rightarrow H_2S + 2NH_4^+ + S_{n-1}$	0.3
Sodium sulphide	EUH031	$Na_2S + 2H^+ \rightarrow H_2S + 2Na^+$	0.4
Sodium polysulphides	EUH031	$Na_2S_n + 2H^+ \rightarrow H_2S + 2Na^+ + S_{n-1}$	0.4
Sodium dithionite	EUH031	$Na_2O_6S_2 + 2H^+ \rightarrow 2Na^+ + SO_2 + H_2SO_4$	0.9
Sodium hypochlorite, solution Cl active ²	EUH031	$2NaOCl + 2H^+ \rightarrow Cl_2 + 2Na^+ + H_2O$	2.9
Calcium hypochlorite, solution Cl active ²	EUH031	$Ca(OCl)_2 + 2H^+ \rightarrow Cl_2 + Ca^{2+} + H_2O$	0.6
Dichloroisocyanuric acid	EUH031	$C_3HCl_2N_3O_3 + 2H^+ \rightarrow C_3H_3N_3O_3 + Cl_2$	0.9
Dichloroisocyanuric acid, sodium salt of	EUH031	$C_3Cl_2N_3O_3Na + 3H^+ \rightarrow C_3H_3N_3O_3 + Cl_2 + Na^+$	1.0
Sodium dichloroisocyanurate, dihydrate	EUH031	$C_3Cl_2N_3O_3Na \cdot 2H_2O + 3H^+ \rightarrow C_3H_3N_3O_3 + Cl_2 + Na^+ + 2H_2O$	1.1
Trichloroisocyanuric acid	EUH031	$2C_3Cl_3N_3O_3 + 6H^+ \rightarrow 2C_3H_3N_3O_3 + 3Cl_2$	0.7
Hydrogen cyanide, salts of (with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide)	EUH032	$NaCN + H^+ \rightarrow HCN + Na^+$	0.2
Sodium fluoride	EUH032	$NaF + H^+ \rightarrow HF + Na^+$	0.2
Sodium azide	EUH032	$NaN_3 + H^+ + H_2O \rightarrow NO_2 + NH_3 + Na^+$	0.3
Trizinc disphosphide	EUH032	$Zn_3P_2 + 6H^+ \rightarrow 2PH_3 + 3Zn^{2+}$	0.6
Calcium cyanide	EUH032	$Ca(CN)_2 + 2H^+ \rightarrow 2HCN + Ca^{2+}$	0.2
Cadmium cyanide	EUH032	$Cd(CN)_2 + 2H^+ \rightarrow 2HCN + Cd^{2+}$	0.4
Aluminium phosphide	EUH029	$AlP + 3H^+ \rightarrow PH_3 + Al^{3+}$	0.3
	EUH032	$AlP + 3H_2O \rightarrow PH_3 + Al(OH)_3$	0.3

Substance name	Hazard Statement Codes	Equation	Concentration limits for waste to be HP 12 (%) ¹
Calcium phosphide	EUH029	$\text{Ca}_3\text{P}_2 + 6\text{H}_2\text{O} \rightarrow 2\text{PH}_3 + 3\text{Ca}(\text{OH})_2$	0.4
Magnesium phosphide	EUH029 EUH032	$\text{Mg}_3\text{P}_2 + 6\text{H}_2\text{O} \rightarrow 2\text{PH}_3 + 3\text{Mg}(\text{OH})_2$	0.3
Trizinc diphosphide	EUH029 EUH032	$\text{Zn}_3\text{P}_2 + 6\text{H}_2\text{O} \rightarrow 2\text{PH}_3 + 3\text{Zn}(\text{OH})_2$	0.6

2749 Notes:

2750 ¹ Rounded to one decimal place

2751 ² Based on 29.3 g sodium hypochlorite per 100 ml (max solubility)

2752

2753 Test Methods

2754 There are no direct test methods for HP 12.

2755 Where a test is necessary the test method for emission of flammable gas provided in
 2756 section 2.12 of [ECHA 2013] should be used. Where the waste contains EUH031 or
 2757 EUH032 substances a 1 M hydrochloric acid solution can be used to replace the water
 2758 in the test.

2759

C.13. Determining HP 13: Sensitising

Definition and further description of Annex III to WFD

Annex III of the Waste Framework Directive defines HP 13 'Sensitising' as:

'waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs'

The WFD further explains that:

'When a waste contains a substance classified as sensitising and is assigned to one of the hazard statement codes H317 or H334 and one individual substance equals or exceeds the concentration limit of 10 %, the waste shall be classified as hazardous by HP 13.'

Table 23: Hazard Class and Category Code(s) and Hazard statement Code(s) for waste constituents and the corresponding concentration limits for the classification of wastes as hazardous by HP 13 Sensitising

Hazard Class and Category Code(s)	Hazard statement Code(s)	Description	Concentration limit (Individual substance)
Skin Sens. 1, 1A, and 1B	H317	May cause an allergic skin reaction	≥ 10 %
Resp. Sens. 1, 1A and 1B	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled	≥ 10 %

Flow chart

Figure 21 sets out the assessment process for HP 13.

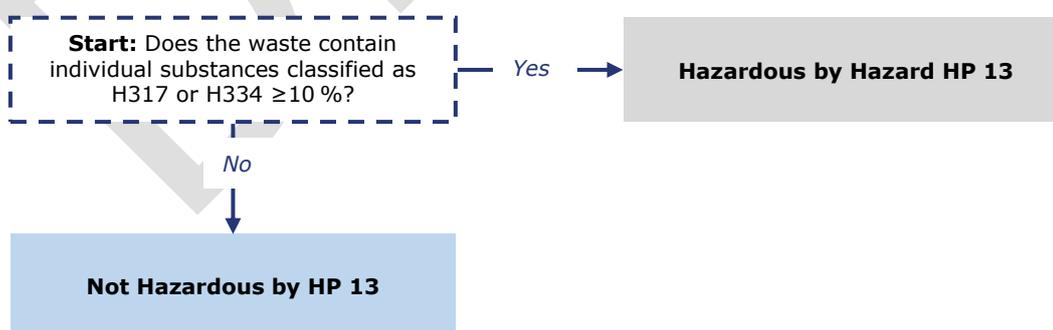


Figure 21: Flow chart for the assessment of HP13 (Adjusted from [UK EA 2015])

Test Methods

A HP 13 assessment of a waste is to be made on the basis of

- 2782 ▪ the identification of the individual substances in the waste;
2783 ▪ their classification;
2784 ▪ reference to concentration limits.

2785 If testing is considered to determining this hazard property, waste containing
2786 substances listed in Table 23 should be assessed for sensitising properties in
2787 accordance with the section 3.4 of [ECHA 2013].

2788 Test methods given in Part B of the Annex to the Test Method Regulation mainly rely
2789 on animal testing and thus are not appropriate.²⁸ Further in-vitro methods may be
2790 available from other sources, such as the European Union Reference Laboratory for
2791 alternatives to animal testing.²⁹

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²⁸ See Annex to the LoW (point 2, indent 2): "A hazardous property can be assessed by using the concentration of substances in the waste as specified in Annex III to Directive 2008/98/EC or, unless otherwise specified in Regulation (EC) No 1272/2008, by performing a test in accordance with Regulation (EC) No 440/2008 or other internationally recognised test methods and guidelines, taking into account Article 7 of Regulation (EC) No 1272/2008 as regards animal and human testing."

²⁹ <https://eurl-ecvam.jrc.ec.europa.eu/>

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C.14. Determining HP 14: Ecotoxic

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- TO BE COMPLETED AFTER THE VOTE OF 25 OCTOBER 2016

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

Definition and further description of Annex III to WFD

Annex III of the Waste Framework Directive defines HP 15 as:

'waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste'

The WFD further explains that:

'When a waste contains one or more substances assigned to one of the hazard statements or supplemental hazards shown in Table 9 [see Table 24 of this document], the waste shall be classified as hazardous by HP 15, unless the waste is in such a form that it will not under any circumstance exhibit explosive or potentially explosive properties.

In addition, Member States may characterise a waste as hazardous by HP 15 based on other applicable criteria, such as an assessment of the leachate.'

A waste containing substances that are assigned hazard statement or supplemental hazard codes in Table 24 can be tested to show whether it exhibits that hazardous property or not. Alternatively a waste containing those substances can simply be assumed to be hazardous by HP 15.

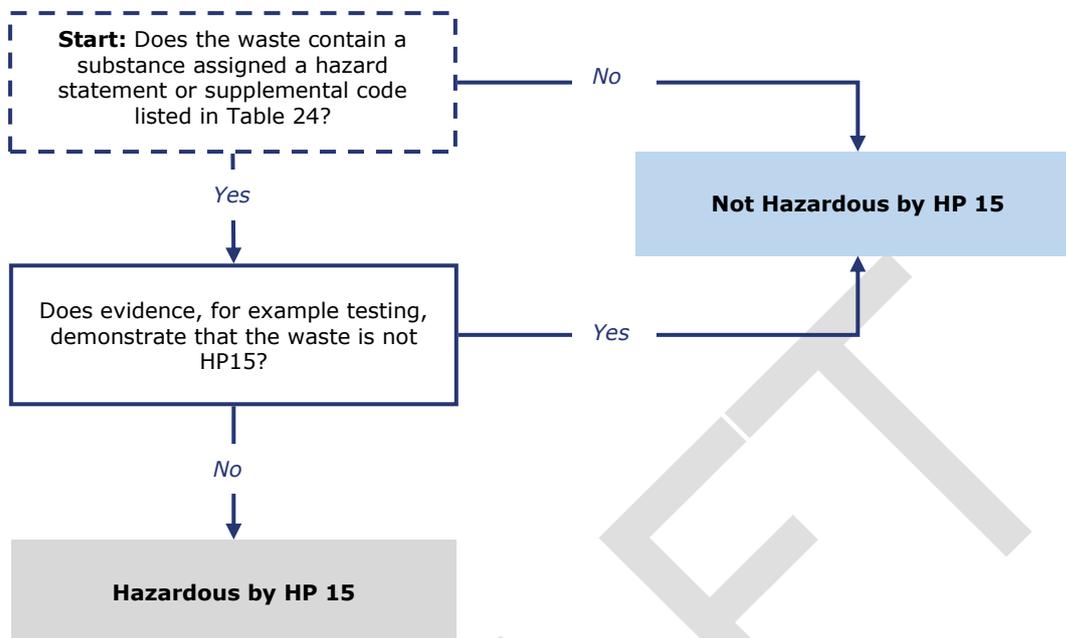
Member States may characterise a waste as hazardous by HP 15 based on other applicable criteria, such as an assessment of the leachate.

Table 24: Hazard statements and supplemental hazards for waste constituents for the classification of wastes as hazardous by HP 15

Hazard Statement(s) / Supplemental Hazard(s)	
<i>May mass explode in fire</i>	<i>H205</i>
<i>Explosive when dry</i>	<i>EUH001</i>
<i>May form explosive peroxides</i>	<i>EUH019</i>
<i>Risk of explosion if heated under confinement</i>	<i>EUH044</i>

2827 **Decision Tree**

2828 Figure 22 sets out the assessment process for HP 15.



2829

Figure 22: Flow chart for the assessment of HP15 (Adjusted from [UK EA 2015])

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2832 **Test Methods**

2833 Wastes containing substances listed in Table 24 should be assessed or tested for in
 2834 accordance with [ECHA 2013]. Section 2.1 provides guidance on the classification of
 2835 mixtures for EUH001, EUH044 and H205.

2836 A waste that would be labelled with a hazard statement or supplementary hazard code
 2837 as a result assessment for EUH001, EUH019, EUH044 or H205 possesses the
 2838 hazardous property HP 15.

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Annex D: Sampling and chemical analysis of waste

In many cases, sufficient information on the waste in question will be available without a need for sampling, chemical analyses and testing (see chapter 3.2.1 for other information sources than sampling and chemical analyses of waste). Where sampling and/or chemical analyses are required, this Annex will on the one hand present a brief overview on waste sampling according to European standards. Basic concepts are mentioned. For more details please refer to the presented standards. In addition, this Annex contains a section with more information and references to specific issues of chemical analyses of waste.

D.1. Sampling

Poor sampling is one of the factors that undermine reliable classification of waste. Hence it is strongly recommended that sampling for the purpose of waste classification should be conducted in accordance with the available CEN standards, as they are presented below.

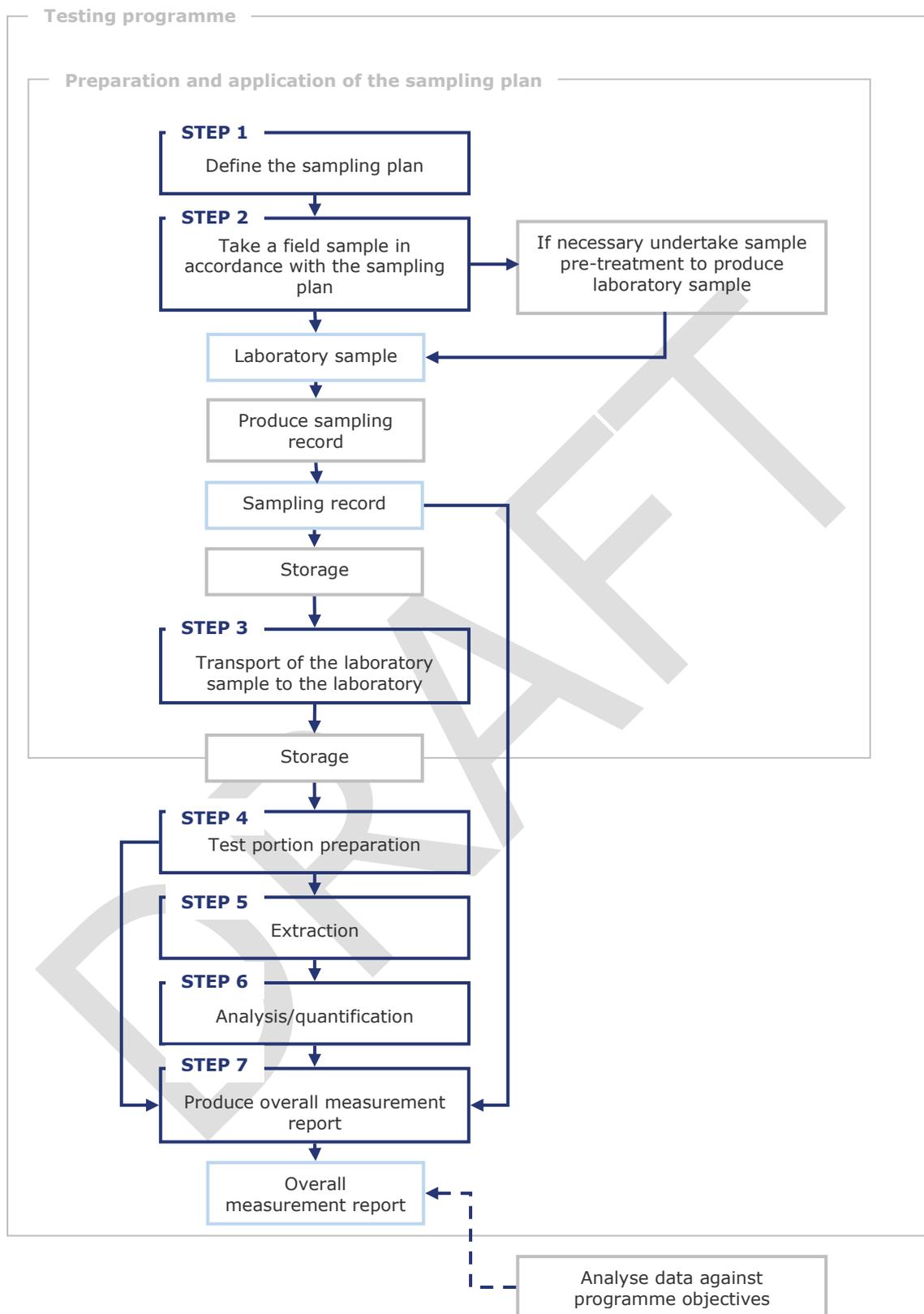
D.1.1. Sampling framework

The European Committee for Standardization (CEN), through its technical committee TC 292 has developed several standards, Technical Reports/Specifications, and state of the art documents for the characterisation of waste. Available documents need to be considered in a coordinated manner. The following list contains relevant standard documents on the 'characterisation of waste – Sampling of waste materials':

- **EN 14899**
Framework for the preparation and application of a sampling plan;
- **CEN/TR 15310-1:2006**
Guidance on selection and application of criteria for sampling under various conditions;
- **CEN/TR 15310-2:2006**
Guidance on sampling techniques;
- **CEN/TR 15310-3:2006**
Guidance on procedures for sub-sampling in the field;
- **CEN/TR 15310-4:2006**
Guidance on procedures for sample packaging, storage, preservation, transport and delivery;
- **CEN/TR 15310-5:2006**
Guidance on the process of defining the sampling plan.

To obtain accurate and representative results, a testing programme needs to be set up before the first sample is taken. This way it is ensured that all necessary factors are considered to enable representative conclusions for the whole waste based on sample(s) [UK EA 2015]. EN 14899 describes this testing programme in detail. In particular seven steps are defined which are displayed in Figure 23.

Alternative sampling procedures are acceptable if they have considered the relevant factors identified in the standards listed above and produce an equally reliable result.



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Figure 23: Testing programme adapted from EN 14899:2005

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D.1.2. Sampling methodology

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2886 As Figure 23 covers the whole testing programme according to EN 14899:2005 in
2887 general, a more detailed focus shall be drawn on the sampling methodology, which
2888 consists of three key elements as displayed in Figure 24:

- 2889 1. define the sampling plan;
- 2890 2. take a field sample in accordance with the sampling plan;
- 2891 3. transport the laboratory sample to the laboratory.

2892 Each key element is divided in further sub-elements one should follow to obtain
2893 standardised sampling results.

2894 Especially for defining the sampling plan several steps have to be performed. An
2895 informative template for a sampling plan is displayed in Annex A to EN 14899:2005.
2896 Figure 24 presents all sub-elements according to EN 14899:2005 and references to
2897 the corresponding technical report, where more detailed information can be found.
2898 Please note that Figure 24 (key elements including the definition of a sampling plan)
2899 has to be considered as a more detailed segment of the overall testing programme as
2900 presented in Figure 23.

2901 Also note that EN 15002:2015 gives further guidance on how to prepare test portions
2902 from the laboratory sample (see Step 4 in Figure 23) which will be the next step after
2903 the preparing and applying the sampling methodology as it will be presented in detail
2904 in Figure 24).

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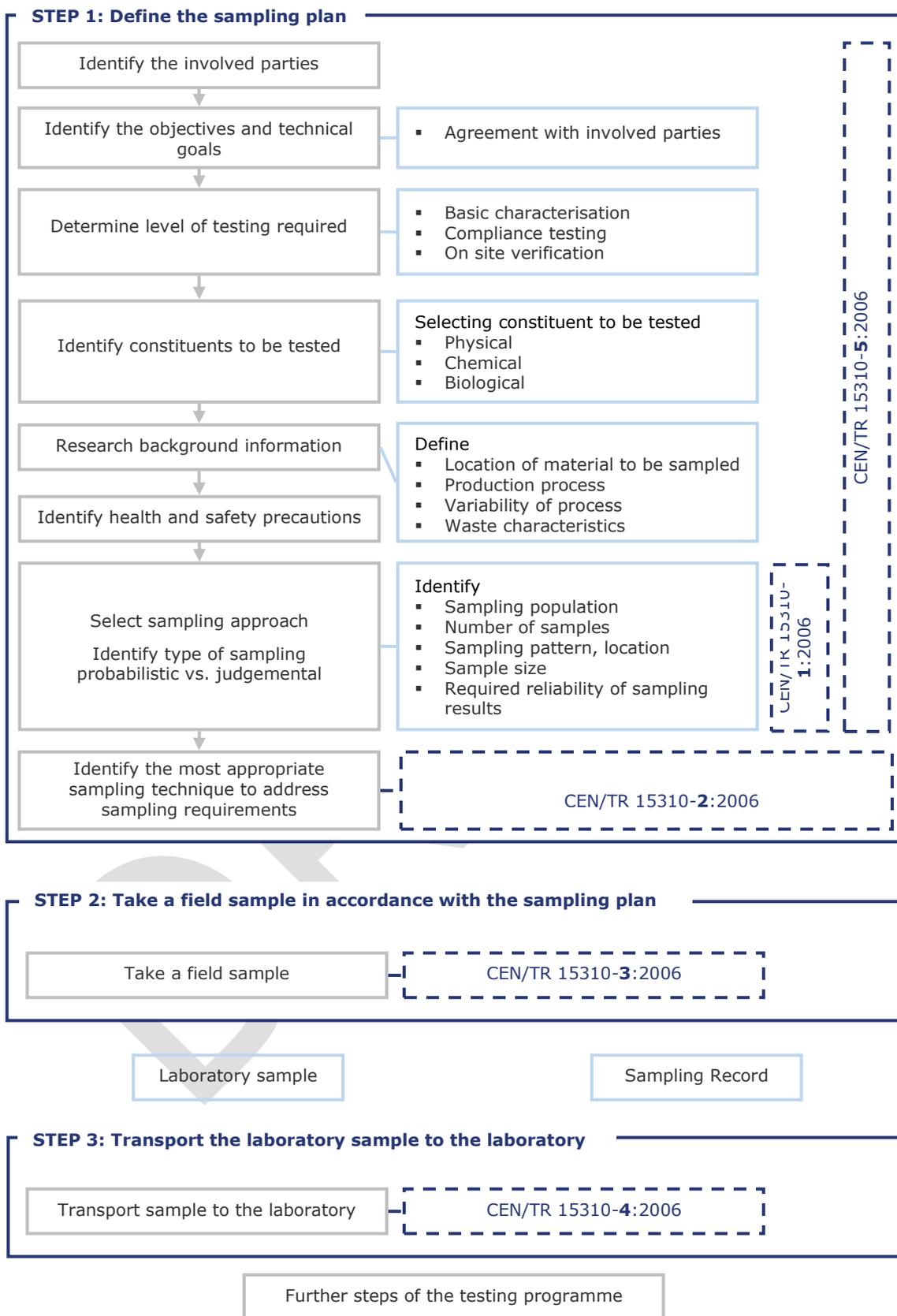


Figure 24: Key elements of sampling methodology according to EN 14899:2005

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2910 **D.1.3. Sampling standards for different waste types**

2911 Waste can be present in a large variety of composition and consistency. To ensure
2912 reliable results, sampling methods need to be adapted according the nature of the
2913 waste to be sampled. CEN/TR 15310-2:2006 provides detailed information on
2914 sampling methods and techniques for different waste types while considering different
2915 circumstances. The following materials are referred to:

- 2916 ▪ mobile or viscous liquids
- 2917 ▪ sludge or paste-like substances
- 2918 ▪ powders granules and small crystals
- 2919 ▪ coarse or lumpy solids.

2920 For most of these materials CEN/TR 15310-2:2006 refers to the following ways in
2921 which the waste may be stored or otherwise be available for sampling:

- 2922 ▪ drums, bags, kegs, blocks, cask or small or flexible walled containers
- 2923 ▪ vertical uniform or irregular, or horizontal cylindrical tanks
- 2924 ▪ moving liquids in a pipeline
- 2925 ▪ lagoons or pits
- 2926 ▪ hoppers, heaps, stockpiles and silos, falling streams and band or screw conveyors
- 2927 ▪ massive or large pieces.

2928 Complementary, **CEN/TR 15310-3:2006** describes relevant aspects for preparation
2929 of sampling and sub-sampling in the field considering different consistencies of the
2930 waste in question.

2931 Please note that further technical guidance on sampling methods for waste may be
2932 available on MS specific level.

2933 **D.1.4. Sampling strategies to deal with homogeneity/ heterogeneity**

2934 A basic condition for reliable results from sampling is that samples are representative
2935 for the waste composition. In the case of waste this is often complex since on the one
2936 hand pollutants may be distributed non-homogenously throughout the waste and on
2937 the other hand certain wastes additionally show a heterogeneous matrix [LAGA 2012].

2938 Following EN 14899:2005, heterogeneity is the degree to which one constituent is
2939 non-uniformly distributed across the sample population. By contrast, homogeneity can
2940 be seen as the degree to which one constituent is uniformly distributed across the
2941 sample population.

2942 MS specific technical guidelines may exist which provide further information on
2943 sampling strategies addressing heterogeneity of waste. [LAGA 2004] for example
2944 provides additional guidelines applied in Germany for examining the waste on its
2945 heterogeneity. In particular liquid, pumpable and dusty wastes as well as wastes
2946 where homogeneity can be assured via a visual inspection are considered to be
2947 homogeneous. Whereas all other wastes are considered to be heterogeneous [LAGA
2948 2004].

2949 If the heterogeneity of the waste is minimized as far as feasible, CEN/TR 15310-
2950 1:2006 and partly also CEN/TR 15310-2:2006 provide a holistic overview on sampling
2951 strategies to deal with heterogeneous and homogeneous waste types. It is important
2952 to already adapt the sampling plan to the heterogeneity of the waste to be sampled.

D.1.5. Statistical approach of sampling

The overall statistical approach of sampling including statistical basics applied to the special case of waste sampling is provided by CEN/TR 15310-1:2006. An excerpt of presented information within the technical report can be found below:

- 2957 ▪ Definition of population to be sampled
 - 2958 ○ Overall population
 - 2959 ○ Sub-population
- 2960 ▪ Variability
 - 2961 ○ Spatial variability
 - 2962 ○ Temporal variability
 - 2963 ○ Random variability
- 2964 ▪ Different sampling approaches
 - 2965 ○ Probabilistic sampling
 - 2966 ○ Judgemental sampling
- 2967 ▪ Sampling patterns
 - 2968 ○ Simple random sampling
 - 2969 ○ Stratified random sampling
 - 2970 ○ Systematic sampling
 - 2971 ○ Judgemental sampling
- 2972 ▪ Sample size
- 2973 ▪ Frequency of sampling
- 2974 ▪ Reliability of sampling results
 - 2975 ○ Confidence limits

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D.2. Chemical analysis of waste

As already indicated in chapter 3.2.1 ('Step 3'), in certain cases the information derived from e.g. a SDS of a product becoming waste, GHS labels, knowledge of the 'waste-generating' process and other databases are not sufficient to allow an assessment of the hazardous properties of the waste in question. As sufficient knowledge on the waste's composition albeit is required to be able to make use of the calculation approach described in chapter 3.2.2 ('Step 4'), a chemical analysis of the waste in question may be necessary.

As a general information basis, Table 25 contains a non-exhaustive list of CEN methods and standards for the characterisation of waste. Apart from CEN methods and standards, [US EPA 2014] provides information on sampling and analysis of solid waste as applied in the US.

Table 25: Non-exhaustive list on CEN methods and standards for the characterisation of waste

Reference	Title
Leaching Tests	
CEN/TS 16660:2015	Characterization of waste. Leaching behaviour test. Determination of the reducing character and the reducing capacity
EN 15863:2015	Characterization of waste. Leaching behaviour test for basic characterization. Dynamic monolithic leaching test with periodic leachant renewal, under fixed conditions
EN 14997:2015	Characterization of waste. Leaching behaviour test. Influence of pH on leaching with continuous pH control
EN 14429:2015	Characterization of waste. Leaching behaviour test. Influence of pH on leaching with initial acid/base addition
EN 14429:2015	Characterization of waste. Leaching behaviour test. Influence of pH on leaching with initial acid/base addition
EN 14997:2015	Characterization of waste. Leaching behaviour test. Influence of pH on leaching with continuous pH control
CEN/TS 15364:2006	Characterization of waste. Leaching behaviour tests. Acid and base neutralization capacity test
CEN/TS 14405:2004	Characterization of waste. Leaching behaviour tests. Up-flow percolation test (under specified conditions)
EN 12457-1:2002	Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. One stage batch test at a liquid to solid ratio of 2 l/kg for materials with high solid content and with particle size below 4 mm (without or with size reduction)
EN 12457-2:2002	Characterisation of waste. Leaching. Compliance test for

	leaching of granular waste materials and sludges. One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 4 mm (without or with size reduction)
EN 12457-3:2002	Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. Two stage batch test at a liquid to solid ratio of 2 l/kg and 8 l/kg for materials with a high solid content and with a particle size below 4 mm (without or with size reduction)
EN 12457-4:2002	Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 10 mm (without or with size reduction)
Analyses of Compounds	
EN 16377:2013	Characterization of waste. Determination of brominated flame retardants (BFR) in solid waste
EN 16192:2011	Characterization of waste. Analysis of eluates
EN 15216:2007	Characterization of waste. Determination of total dissolved solids (TDS) in water and eluates
Total Organic Carbon (TOC)	
EN 13137:2001	Characterisation of waste. Determination of total organic carbon (TOC) in waste, sludges and sediments
Digestion	
EN 13656:2002	Characterization of waste. Microwave assisted digestion with hydrofluoric (HF), nitric (HNO ₃), and hydrochloric (HCl) acid mixture for subsequent determination of elements
EN 13657:2002	Characterization of waste. Digestion for subsequent determination of aqua regia soluble portion of elements
Hydrocarbons C10 to C40	
EN 14039:2004	Characterization of waste. Determination of hydrocarbon content in the range of C10 to C40 by gas chromatography
Dry Matter	
EN 14346:2006	Characterization of waste. Calculation of dry matter by determination of dry residue or water content
Inorganic Compounds	
EN 14582:2007	Characterization of waste. Halogen and sulfur content. Oxygen combustion in closed systems and determination

	methods
EN 15192:2006	Characterisation of waste and soil. Determination of chromium (VI) in solid material by alkaline digestion and ion chromatography with spectrophotometric detection
Organic Compounds	
EN 15308:2008	Characterization of waste. Determination of selected polychlorinated biphenyls (PCB) in solid waste by using capillary gas chromatography with electron capture or mass spectrometric detection
EN 15527:2008	Characterization of waste. Determination of polycyclic aromatic hydrocarbons (PAH) in waste using gas chromatography mass spectrometry (GC/MS)
Elemental composition	
EN 16424:2014	Characterization of waste. Screening methods for the element composition by portable X-ray fluorescence instruments
EN 15309:2007	Characterization of waste and soil. Determination of elemental composition by X-ray fluorescence

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There are recommendations and examples available on MS level which may give further guidance on the determination of constituents in liquid and solid waste. A method for the exhaustive determination of elements and substances in liquid and solid waste is proposed in "Characterization of waste - Determination of elements and substances in waste" described in the experimental standard AFNOR XP X30-489. It is a Work Item submitted to vote at European level *CEN/TC 292/WG 5 N 735 Determination of content of elements and substances in waste - experimental AFNOR Standard XP X30-489 (CEN/TC 292 N 1430)* for standardisation. More information on this document can be found at [HENNEBERT ET AL. 2013].

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Information derived from chemical analyses of waste that can be used for the classification of waste shall be compositional data. As Box 17 underlines, results from leaching tests – as often obtained from laboratory results in the frame of testing the fulfillment of WAC criteria from the Landfill Directive – cannot be used exclusively for the hazard classification of waste. The only exemption from this principle may be the case of assessing HP 15. In particular, this means that, e.g. if a waste has failed the Inert WAC criteria from the Landfill Directive, it will not be hazardous or respectively non-hazardous automatically. WAC results should not be used exclusively for hazardous waste classification. A WAC analysis is only actually required if 1) the chosen treatment is disposal in landfills and 2) the class of landfill previously defined by a hazardous or non-hazardous classification requires a numerical WAC test. However, the substances present in the leachate may offer some clues regarding the constituents of the source waste.

Use of WAC laboratory results for waste classification

Input data for waste classification must be compositional data on the waste itself (in the form produced / managed). Results from leaching tests cannot be used directly, except where relevant for assessing HP 15 and potentially, depending on the outcome of on-going debate on the assessment of the ecotoxicity of waste, also for H14. As a consequence, analytical results obtained in the frame of fulfilling Waste Acceptance Criteria (WAC) cannot be used for the classification of the waste as hazardous or non-hazardous, although substances present in the leachate can offer some clues regarding the constituents of the source waste. In particular this means that, e.g. if a waste has failed the Inert WAC criteria from the Landfill Directive, it will not be hazardous automatically. WAC results should not be used for hazardous waste classification. A WAC analysis is only actually required if 1) the chosen treatment is disposal in landfills and 2) the class of landfill previously defined by a hazardous or non-hazardous classification requires a numerical WAC test.

Box 17: Use of WAC laboratory results for waste classification

Please note that in particular regarding inorganic substances, chemical analyses usually do not provide information about the specific chemical compounds within a waste but only allow the identification of cations and anions. Neither the molecular composition nor other consideration, such as the identification of mineralogical forms is usually possible using conventional analytical techniques. In the following, some possible methods to overcome this obstacle are presented. More approaches and conventions on MS level may be available which should be checked additionally.

D.2.1. Worst case substances

In the likely case that the waste holder has some knowledge on the elements but not on the substances present in the waste, it is suggested to use the concept of determining 'reasonable worst case' substances for each identified element. These worst case substances should be determined for each hazardous property and in the following should be used for the assessment of hazardous properties (see chapter 3.2.2).

Worst case substances should be determined taking into consideration which substances reasonably could exist in the waste. The term reasonable is explained by [UK EA 2015] that "*reasonable indicates that substances cannot exist within the waste because, for example, of their physical and chemical properties can be excluded*". A similar explanation is used by [BMU 2005].

[INERIS 2015] contains a collection of 'realistic worst case' substances by elements for each hazardous properties, which can serve as general information basis.

D.2.2. Generic entries

No further speciation on identified elements is needed for elements having a 'generic entry' in the list of harmonised classifications in Table 3.1 of Part 3 of Annex VI to the CLP Regulation. However, the notes relating to the classification and labelling of mixtures presented in chapter 1.1.3.2 of Annex VI to the CLP Regulation may be taken into account when establishing the hazardous properties of wastes based on 'generic entries'. These entries are presented in Table 26.

Table 26: Generic entries of elements (11) in the CLP Regulation [INERIS 2015]

Element	Index No	International Chemical Identification	Hazard Class and Category Code(s)	Hazard Statement Code(s)
As	033-002-00-5	arsenic compounds, with	Acute Tox. 3 *	H331

Element	Index No	International Chemical Identification	Hazard Class and Category Code(s)	Hazard Statement Code(s)
		the exception of those specified elsewhere in this Annex	Acute Tox. 3 * Aquatic Acute 1 Aquatic Chronic 1	H301 H400 H410
Ba	056-002-00-7	barium salts, with the exception of barium sulphate, salts of 1-azo-2-hydroxynaphthalenyl aryl sulphonic acid, and of salts specified elsewhere in this Annex	Acute Tox. 4 * Acute Tox. 4 *	H332 H302
Be	004-002-00-2	beryllium compounds with the exception of aluminium beryllium silicates, and with those specified elsewhere in this Annex	Carc. 1B Acute Tox. 2 * Acute Tox. 3 * STOT RE 1 Eye Irrit. 2 STOT SE 3 Skin Irrit. 2 Skin Sens. 1 Aquatic Chronic 2	H350i H330 H301 H372 ** H319 H335 H315 H317 H411
Cd	048-001-00-5	cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex	Acute Tox. 4 * Acute Tox. 4 * Acute Tox. 4 * Aquatic Acute 1 Aquatic Chronic 1	H332 H312 H302 H400 H410
Cr(VI)	024-017-00-8	chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex	Carc. 1B Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H350i H317 H400 H410
Hg	080-002-00-6	inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex	Acute Tox. 2 * Acute Tox. 1 Acute Tox. 2 * STOT RE 2 * Aquatic Acute 1 Aquatic Chronic 1	H330 H310 H300 H373 ** H400 H410
Pb	082-001-00-6	lead compounds with the exception of those specified elsewhere in this Annex	Repr. 1A Acute Tox. 4 * Acute Tox. 4 * STOT RE 2 * Aquatic Acute 1 Aquatic Chronic 1	H360Df H332 H302 H373 ** H400 H410

Element	Index No	International Chemical Identification	Hazard Class and Category Code(s)	Hazard Statement Code(s)
Sb	051-003-00-9	antimony compounds, with the exception of the tetroxide (Sb_2O_4), pentoxide (Sb_2O_5), trisulphide (Sb_2S_3), pentasulphide (Sb_2S_5) and those specified elsewhere in this Annex	Acute Tox. 4 * Acute Tox. 4 * Aquatic Chronic 2	H332 H302 H411
Se	034-002-00-8	selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex	Acute Tox. 3 * Acute Tox. 3 * STOT RE 2 Aquatic Acute 1 Aquatic Chronic 1	H331 H301 H373** H400 H410
Tl	081-002-00-9	thallium compounds, with the exception of those specified elsewhere in this Annex	Acute Tox. 2 * Acute Tox. 2 * STOT RE 2 * Aquatic Chronic 2	H330 H300 H373 ** H411
U	092-002-00-3	uranium compounds with the exception of those specified elsewhere in this Annex	Acute Tox. 2 * Acute Tox. 2 * STOT RE 2 Aquatic Chronic 2	H330 H300 H373** H411

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LoW	Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1429545485347&uri=CELEX:32000D0532
Regulation 1357/2014	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	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1438016393908&uri=CELEX:32014R1357
WSR	Regulation (EC) No 1013/2006 of the European Parliament and of the Council of	http://eur-lex.europa.eu/legal-

	14 June 2006 on shipments of waste (OJ L 190, 12.7.2006, p. 1).	content/EN/TXT/?qid=1428929927187&uri=CELEX:32006R1013
Landfill Directive	Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1438016469243&uri=CELEX:31999L0031
WAC	Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1438016527737&uri=CELEX:32003D0033
Mining Waste Directive	Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC – Statement by the European Parliament, the Council and the Commission (OJ L 102, 11.4.2006, p. 15).	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1428929962432&uri=CELEX:32006L0021
REACH Regulation	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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1).	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1428930012264&uri=CELEX:32006R1907R(03)
Test Methods Regulation	Council Regulation (EC) No 440/2008 of 30 May 2008 laying down test methods pursuant to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1438016591797&uri=CELEX:32008R0440
CLP Regulation	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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p. 1).	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1428930051039&uri=CELEX:32008R1272R(02)

POP Regulation	Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC (OJ L 158, 30.4.2004, p. 7).	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1429545513272&uri=CELEX:32004R0850
Seveso III Directive	Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1429545561491&uri=CELEX:32012L0018
ODS Regulation	Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer (OJ L 286, 31.10.2009, p. 1-30)	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1428930262325&uri=CELEX:32009R1005
Scrap Metal Regulation	Council Regulation (EU) No 333/2011 of 31 March 2011 establishing criteria determining when certain types of scrap metal cease to be waste under Directive 2008/98/EC of the European Parliament and of the Council	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1429545659392&uri=CELEX:32011R0333
Copper Scrap Regulation	Commission Regulation (EU) No 715/2013 of 25 July 2013 establishing criteria determining when copper scrap ceases to be waste under Directive 2008/98/EC of the European Parliament and of the Council	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1429545719391&uri=CELEX:32013R0715
DPD	Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations	
DSD	Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.	
Test Methods Regulation	Council Regulation (EC) No 440/2008 of 30 May 2008 laying down test methods pursuant to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)	http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1432296681885&uri=CELEX:32008R0440