Key tasks for EU waste classification according to the new legislative framework

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Aim

- Point out the importance of waste management for the circular economy
- Highlight that waste management is linked to waste classification
- Provide assistance in the field of (hazardous) waste management
- Indicate the basic concepts and specific aspects for waste classification
Circular Economy & Waste Management

The EU’s aim for circular economy towards the waste management is to:

• secure access to the resources
• reinforce the ability to recover raw materials from waste

Resource Sourcing → Resource use → Circular Economy → Resource recovery → Supply chain management
Circular Economy & Waste Management

The EU’s aim for circular economy towards the waste management is to:

• secure access to the resources

• reinforce the ability to recover raw materials from waste
The products should be labeled and packaged according to the provisions of Regulation 1272/2008 (CLP Regulation).

The framework for classification of waste has been aligned to CLP Regulation.
Circular Economy & Waste Management

What does the circular economy mean for the industry sector?

The term is becoming increasingly familiar to the industry sector but there are hugely mixed views as to:

• Whether the term is used now is fully understood by many that use it
• How to change the consumer culture
• How the circular economy may incorporate in the current and future roles of the supply chain.
EU Waste Classification

1. LEGISLATIVE FRAMEWORK


- sets the basic concepts and definitions related to waste management, such as **Definitions, Principles and Obligations**

The scope of the Directive focuses on ‘waste’ as defined in Article 3(1)

‘any substance or object which the holder discards or intends or is required to discard’

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’ *

* Commission Regulation 1357/2014 amending Annex III to WFD
EU Waste Classification

1. LEGISLATIVE FRAMEWORK

European List of Waste (LoW)*:

• *is the key document for classification of waste*
• *provides further provisions for the assessment of hazardous properties*
• *provides the list of wastes, categorized into chapters, sub-chapters and entries*

The identification of the most appropriate entry, between the 842 entries in the LoW, is a key tool in the classification of waste

* The last amendment is by the Decision 2014/955/EU that should have been applied since 1 June 2015
The assessment & classification of waste

Step 1
• Identification of the appropriate entry in the LoW*

Step 2
• Data sources

Step 3
• Hazardous property Assessment

Step 4
• Waste sampling & specific tests per HP*

*LoW: List of Waste
*HP: Hazardous Property
The assessment & classification of waste

STEP 1: Identification of the appropriate entry in the LoW

Types of LoW entries

- Absolute hazardous entry
- Absolute non-hazardous entry
- Mirror entry
STEP 1: Identification of the appropriate entry in the LoW

- The code is marked by an asterisk (*)
- It will still be necessary to proceed in the evaluation of the 15 hazardous properties of the Annex III to Regulation 1357/2014/EU
STEP 1: Identification of the appropriate entry in the LoW

- The waste stream is non-hazardous shall be classified as non-hazardous without any further assessment
The assessment & classification of waste

STEP 1: Identification of the appropriate entry in the LoW

Types of LoW entries

- Absolute hazardous entry
- Absolute non-hazardous entry
- Mirror entry

- Mirror entries are a group of at least two alternative entries.
- It is necessary to proceed in the evaluation of the 15 hazardous properties of the Annex III to Regulation 1357/2014/EU.
STEP 1: Identification of the appropriate entry in the LoW

Step 1
Is the waste source known?

Yes
Does the waste stream falls into an entry from 01-12/17-20?
(excluding XX XX 99 entries)
No

Step 2
Is the waste type known?

Yes
Does the waste stream falls into an entry from 13-15?
(excluding XX XX 99 entries)
No

Step 3
Is the waste not otherwise specified in the LoW?

Yes
Is the waste entry available in chapter 16?
(excluding XX XX 99 entries)
No

Step 4
Select a code XX XX 99 from the relevant chapter

Selection of the six-digit code for the waste
The assessment & classification of waste

STEP 2: Data sources

Investigation and identification of hazardous ingredients
- Chemical analysis, XRD analysis, assessment of the leachate etc.
- In any case the worst substance should be considered to be present

Collection of the available data for the classification of each waste
- Tables 3.1 and 3.2 of Annex VI to the CLP Regulation
- Technical dossier from registered substances according to REACH
- SDS provided by the suppliers

Data sources for information on hazardous substances
STEP 3: Hazardous property assessment

- The risk assessment is based on the Hazardous Property-criteria and related thresholds that are present in Regulation 1357/2014/EU

- The 15 hazardous properties (HP1 to HP15) should be examined separately for every waste stream

- The calculation method is based on the equation presented on every hazard property

- The hazardous substance content values in waste should be compared against the concentration limits listed in Regulation 1357/2014/EU
The assessment & classification of waste

STEP 3: Hazardous property assessment

- HP1 – Explosive
- HP2 – Oxidizing
- HP3 – Flammable
- HP4 – Irritant
  skin irritation & eye damage
- HP5 – Specific Target Organ Toxicity
  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 – Sensitizing
- HP14 – Ecotoxic
- HP15 – Waste capable of exhibiting a hazardous property listed above not directly displayed by the original waste
STEP 3: Hazardous property assessment

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- Two levels of chronic ecotoxicity
- The calculation method includes M-factors
STEP 4: Waste sampling & specific tests per HP

• The testing method provide the realistic risk coming from a waste stream

• The testing methods should be in accordance with the Regulation (EC) 440/2008

• The Regulation (EC) 440/2008 presents test methods that are sometimes in contrast with Article 7 of CLP Regulation, that tests on animals shall be undertaken only where no other alternatives exist

• Toxicological and eco-toxicological testing may be rather:
  • costly
  • time consuming
The assessment & classification of waste

STEP 4: Waste sampling & specific tests per HP

Example

Substance X:
Composition: 1%
Classification: H271: Ox. Sol. 1

Substance Y:
Composition: 99%
Classification: not classified

How do we classify the waste?
STEP 4: Waste sampling & specific tests per HP

Example

According to 1357/2014/EU and HP2: Oxidizing

“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 oxidizing, it shall be classified as hazardous by HP 2”

Table 2 of 1357/2014/EU the Hazard Class and Category Code for HP2

- H271: Ox. Gas 1
- H271: Ox. Liq. 1
- **H271: Ox. Sol. 1**
- H272: Ox. Liq. 2, Ox. Liq. 3
- H272: Ox. Sol. 2, Ox. Sol. 3
STEP 4: Waste sampling & specific tests per HP

The assessment & classification of waste

It is advisable to test the waste stream for the hazardous property in cases when the realistic risk coming from a waste is possibly lower than the predicted.
Conclusions

• Waste characterization is a key tool in the entire chain of waste management and the circular economy

• The waste classification affects waste producers, waste holders, and competent authorities

• Waste management is a sector with a considerable impact on health and the environment. For this reason the European Union (EU) has in place a comprehensive and strict legal regime

• The EU waste law has been aligned, to a large extent, with EU chemicals legislation (CLP)
Thank You!

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