



**Twinning Project IL/11**

**Implementation and Strengthening the Environmental Framework for  
IPPC, Resource Efficiency and Eco-Management in Israel**



## **Case studies for Waste classification**

**Ellen Gerlach, Environmental Protection Agency Sachsen-Anhalt  
Dr. Brigitte Karigl, Environmental Agency Austria**

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Example 1:  
„Waste containing aluminium oxide and  
acetronitrile“





## Example 1 - „Waste containing aluminium oxide and acetronitrile“

### **Description of the waste**

The waste was described as spent adsorbent used in column chromatography for purifying technical acetonitrile. The main constituent of the waste is aluminium oxide





Example 1 - „Waste containing aluminium oxide and acetronitrile“

The appropriate chapter heading in the EWC is “07 WASTES FROM ORGANIC CHEMICAL PROCESSES”

sub-chapter: “07 01 wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals”.

6-digit code: “07 01 10\* other filter cakes and spent absorbents”

The appropriate entry would be a hazardous waste without mirror entry.





Example 1 - „Waste containing aluminium oxide and acetronitrile“

## **Assessment of the hazardous properties on request of the company**

- ⇒ Provide, for the known waste components, the information about hazardous properties in the Material Safety Data Sheets.
- ⇒ Assessment of the yet unknown components of the waste has to be made.





## Example 1 - „Waste containing aluminium oxide and acetronitrile“

Hazardous properties of the “known” components  
Aluminium Oxide and Acetonitrile (residual  
contents):

### Aluminium oxide:

Aluminium oxide is not classified as hazardous according to EU legislation.





Example 1 - „Waste containing aluminium oxide and acetonitrile“

### Acetonitrile:

The following H-statements are allocated to acetonitrile:

- Flammable liquid Category 2, H225
- Acute toxicity, Cat. 4, Oral, H302, Dermal H312
- Eye irritation, Cat. 2, H319

These H-statements are relevant for the assessment whether the waste is hazardous by HP3 “Flammable”, HP6 “Acute Toxicity” and HP4 “Irritant”.





Example 1 - „Waste containing aluminium oxide and acetronitrile“

Assessment of HP3 “Flammable” in Commission Regulation No. 1357/2014 replacing Annex II to WFD:

“When a waste contains one or more substances classified by one of the following hazard class and category codes and hazard statement codes, the waste shall be assessed, where appropriate and proportionate, according to test methods. If the presence of a substance indicates that a waste is flammable, it shall be classified as hazardous by HP3”







Example 1 - „Waste containing aluminium oxide and acetonitrile“

### Assessment of HP6 “Acute Toxicity” & HP4 “Irritant”

The waste would be hazardous by HP 4 or HP 6 if the concentration of acetonitrile would be higher than the respective limit values:

- H 303 > 25% for HP 6
- H 332 > 22.5% for HP 6
- H 312 > 55% for HP6
- H 319 > 20% for HP4

The waste would be classified as hazardous by HP4 if [c] of acetonitrile were higher than 20%, and additionally as hazardous by HP6 if [c] of acetonitrile were higher than 22,5% .





## Example 1 - „Waste containing aluminium oxide and acetronitrile“

- Assessment of yet unknown components in the waste:

In column chromatography, undesired components are adsorbed at the adsorbent. These substances have to be assessed with regard to their hazardous properties.





## Example 1 - „Waste containing aluminium oxide and acetronitrile“

### Further steps:

- Physical properties of the waste should be tested whether the waste is flammable, taking also into account that a flammable gas/air mixture may occur in containers where the waste is stored.
- It has to be confirmed that the content of the acetronitrile is below the limit values for triggering HP6 and HP4 (“total contents”).





## Example 1 - „Waste containing aluminium oxide and acetronitrile“

### Further steps – continued:

- The substances absorbed in the aluminium oxide must be analysed chemically in order to determine whether hazardous substances are present or not, in order to assess the relevant HP criteria. (Note: The results of the chemical analyses performed for quality assurance of the product may be used to determine the type and quantity of the absorbed substances.)





## Example 1 - „Waste containing aluminium oxide and acetronitrile“

### Further steps – continued:

- Chemical analysis of a waste leachate (prepared according to EN 12457-2 Characterization of waste)
- Chemical analysis of the total contents of “relevant” parameters (substances which have been identified to be absorbed on the aluminium oxide & metals)

=> See further details in Manual on Waste Classification.





## Example 1 - „Waste containing aluminium oxide and acetronitrile“

### Final assessment:

If it can be proven that the waste does not display hazardous properties, the following codes can be assigned to waste code 15 02 03 “absorbents, filter material, wiping cloths and protective clothing other than those mentioned in 15 02 02”, which is a non-hazardous waste.





## Example 2:

„Sludge from in-house waste water treatment of a  
company which produces aluminium profiles“





Example 2 - „Sludge from waste water treatment of a company which produces aluminium profiles“

## 1) Information about the production facility

The waste is generated in a facility which produces aluminium profiles. The following main processes are carried out:

- Anodization in anodic oxidation bath
- Painting in surface treatment baths for electrostatic painting







Example 2 - „Sludge from waste water treatment of a company which produces aluminium profiles“

## **2) Information about the waste generation process:**

The sludge from the in-house waste water treatment has to be assessed, not the waste from maintaining the standing baths.

The waste water does not contain the first flush from rinsing the aluminium profiles after each process step.





Example 2 - „Sludge from waste water treatment of a company which produces aluminium profiles“

⇒ The appropriate chapter heading in the EWC is  
**“11 WASTES FROM CHEMICAL SURFACE  
TREATMENT AND COATING OF METALS AND  
OTHER MATERIALS; NON-FERROUS HYDRO-  
METALLURGY”**

sub-chapter: **“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)”**





Example 2 - „Sludge from waste water treatment of a company which produces aluminium profiles“

6-digit code

“11 01 09\* Sludges and filter cakes containing dangerous substances”

or

“11 01 10 sludges and filter cakes other than those mentioned in 11 01 09”

Mirror entry! The hazardous properties must be assessed for deciding whether the waste is hazardous or not.





Example 2 - „Sludge from waste water treatment of a company which produces aluminium profiles“

## **Assessment of hazardous properties:**

1. Chemical analysis of leachate
2. Chemical analysis of total contents of relevant parameters

Compare concentrations with the limit values given in the Manual. If the limit values are exceeded, it is a hazardous waste.





Example 2:  
„Packaging material with residues of ink“





## Example 3 - „Packaging material with residues of ink“

1st question to be answered:

- What was the original content of the packaging material? Which substance was contained by the packaging?

If the original content was classified as “very toxic” (H300, H330), “carcinogenic class1” (H350), “mutagenic class1” (H340), teratogenic class1 (H360), the packaging material is classified as hazardous waste **“15 01 10 packaging containing residues of or contaminated by dangerous substances”**. (Even when empty, the concentration of the remaining hazardous substances is likely to exceed 0.1% of the weight of the packaging waste.)





## Example 3 - „Packaging material with residues of ink“

2<sup>nd</sup> question to be answered:

- Is the packaging material “empty” or does it contain substantial residues of the original content?

There is no legal EU-definition of “empty. In practice, the term “empty” is described by examples

“wiped out”, “no liquids dripping out from turned-over packaging” = empty

To be regarded as empty, the packaging need not be specifically cleaned!





## Example 3 - „Packaging material with residues of ink“

If the packaging is empty (and the original content not “very toxic, carcinogenic class1, mutagenic class1” or teratogenic class1“), it is classified as non hazardous packaging waste. The appropriate 6-digit waste code depends on the packaging material:

- 15 01 02 plastic packaging
- 15 01 03 wooden packaging
- 15 01 04 metallic packaging
- 15 01 05 composite packaging
- 15 01 06 mixed packaging
- 15 01 07 glass packaging
- 15 01 08 textile packaging







## Example 3 - „Packaging material with residues of ink“

If the packaging is not empty, the hazardous properties of the contained substance have to be assessed.

If the substance would be a hazardous waste:

⇒ 15 01 10 packaging containing residues of or contaminated by dangerous substances

If the substance would be a non-hazardous waste:

⇒ 6-digit code in sub-chapter “15 01 packaging (including separately collected municipal packaging waste)”, according to the packaging material





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## Contact information:

[ellen.gerlach@lau.mlu.sachen-anhalt.de](mailto:ellen.gerlach@lau.mlu.sachen-anhalt.de)

[brigitte.karigl@umweltbundesamt.at](mailto:brigitte.karigl@umweltbundesamt.at)

