

# Hazardous waste generation in EEA member countries

Comparability of classification  
systems and quantities

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# Executive summary

## Background and methodology

- This report has been prepared by the European Topic Centre on Waste as part of the work programme of the European Environment Agency.
- The purpose of the report is to review existing data on hazardous waste in Europe and assess its comparability.
- The report includes data from 15 EEA countries and two regions and follows on from an earlier report 'Hazardous waste generation in selected European countries' (EEA topic report No 14/1999).
- When comparing the generation of hazardous waste across countries, it is important that the reported data be based on the same definitions, i.e. that a common classification is applied. It is noted that different countries and regions apply different classification systems when the data are originally collated.
- In order to facilitate comparison, a common waste classification has been applied. The common classification used is the hazardous waste list, which is part of the European waste catalogue (Commission Decision 94/3/EC).

## Key findings

- Data have been obtained for nearly all EEA member countries. Further improvement is needed to increase the comparability of data between the EEA countries.
- An objective of this report was to produce a comparable dataset for the majority of EEA member countries to provide comparable information on hazardous waste generation. This is presently possible only for one large country, five small countries and two regions.
- One of the conclusions of the report 'Hazardous waste generation in selected European countries' was that at national level, the 20 largest generated waste fractions represent approximately 75 % of total quantity of hazardous waste generated. The ETC/W sought information on the 20 largest fractions of hazardous waste in each country and region surveyed to facilitate information collection from member countries. However, only countries already using the hazardous waste list (HWL) were able to give information at the six-digit level.
- It has proven difficult to relate hazardous waste classified according to national or regional substance oriented classifications to the HWL and the European waste catalogue. As stated above, only countries already registering hazardous waste according to the HWL have given information for this survey at the six-digit level. The reason for this is that it is difficult to obtain the required information for reclassification following the original data collection exercise. The implementation of the HWL currently taking place in several countries will improve the availability of comparable data.
- In each of the countries and regions examined, a relatively small number of waste types represent a large proportion of the total hazardous waste generation. On average, the 20 largest generated waste types represent between 67 % and 93 % of the total hazardous waste generated with an average of 75 % of hazardous waste being attributable to these top 20 waste types in each country or region.
- National definitions of hazardous waste are not limited to the waste types included in the HWL. When looking at the 20 largest generated waste types in each country, 74 % of the waste types and 81 % of the waste quantities can be related directly to HWL wastes.
- 110 different waste types are included in the full list of top 20 waste types from nine individual countries and regions. This indicates that different countries have different hazardous waste profiles. However, it may also indicate that different countries use different codes for the same waste type. The Commission has recently amended the hazardous waste list with more waste types now classified as hazardous. Prior to the amendment, between 29 % and 100 % of hazardous waste reported by countries and regions examined could be related to HWL descriptions. Following the amendment, the amount is between 39 % and 100 %. The average for the countries has increased from

71 % to 81 %. This means that the comparability of classification for hazardous waste in countries and regions has slightly improved as a result of this amendment.

- Industrial structure is considered an important factor in explaining the difference between hazardous waste types and quantities arising in the different countries and regions. Significant differences exist between the respective manufacturing industries, energy-production sectors and waste incineration activities. According to the NACE codes less than 30 % of the hazardous waste production in some countries is related to manufacturing industries, while in other countries more than 80 % of their hazardous waste comes from these sources. More detailed data respectively on the sources of hazardous waste with the type of waste are needed in order to facilitate analysis of different hazardous waste-generation paths in EEA member countries.

# Introduction

## 1.1. Background

The OECD and Eurostat publish data on hazardous waste generation in EU Member States and some accession countries. However, data are scarce and it is difficult to make valid comparisons between data from different countries. For instance, hazardous waste statistics published by the OECD and Eurostat generally provide a national total for hazardous waste arising without detailed information provided on the composition of hazardous waste produced (See Table 1). In addition, national totals reported to the OECD and Eurostat in the joint biannual questionnaires are generally based on national classifications and definitions which make it very difficult to draw valid comparisons between data from different countries.

Total generation of hazardous waste in EEA member countries stated in tonnes

Table 1

Country	Year	Total generation in tonnes	Generation in kg per capita	Classification
Austria	1992	423 000	54	National
Austria	1994	513 000	64	National
Austria	1995	577 000 <sup>1</sup>	68	National
Belgium	1994	776 000	77	Basel
Denmark	1990	106 000	21	National
Denmark	1994	194 000	37	National
Denmark	1995	250 000	48	National
Finland	1987	314 000	64	Basel
Finland	1992	359 000	71	National
France	1990	7 000 000	123	National
Germany	1990	13 079 000	164	National
Germany	1993	9 093 000	112	National
Greece	1992	450 000	44	
Iceland	1994	6 000	23	Basel
Ireland	1992	99 000	28	Basel
Ireland	1995	248 000	70	HWL <sup>2</sup>
Italy	1990	3 246 000	57	Basel
Italy	1995	2 708 000	47	Basel
Italy	1997	3 401 141	59	HWL
Luxembourg	1992	86 000	220	Basel
Luxembourg	1995	180 000	442	National
Netherlands	1990	1 040 000	70	National
Netherlands	1992	1 513 000	100	National
Netherlands	1993	1 520 000	99	National
Norway	1990	520 000 <sup>3</sup>	122	Basel
Norway	1994	645 000 <sup>4</sup>	150	National
Portugal	1987	1 087 000	109	Basel
Portugal	1990	1 365 000	138	Basel
Portugal	1994	1 356 000	138	Basel
Spain	1987	1 708 000	44	Basel
Spain	1994	3 394 353 <sup>5</sup>	86	Basel
Sweden <sup>6</sup>	1985	500 000	60	Basel
United Kingdom	1990	2 936 000	51	Basel
United Kingdom	1992/93	2 299 000	40	Basel
United Kingdom	1993/94	1 844 000	32	Basel

Sources: OECD, 1997.

<sup>1</sup> FEA-Austria, Klagenfurt 1999.

<sup>2</sup> EPA-Ireland, 1999.

<sup>3</sup> Norsas, Norway.

<sup>4</sup> Norsas, Norway.

<sup>5</sup> Spanish Ministry of the Environment.

<sup>6</sup> Sweden has introduced the HWL for 1998 and onwards.

Table 1 presents a summary of the hazardous waste arisings in a number of countries as reported to the OECD and Eurostat. Per capita figures vary significantly from one country to another and appear to have increased substantially in many countries during the 1990s. However, whether this increase is a real increase or a function of more comprehensive reporting and/or changes in classification is not clear.

In general, it is recognised that, at European level, data on hazardous waste are not comparable. It is not currently possible to say to what extent the variations found in the reported statistics can be explained by different:

- classifications of hazardous waste;
- systems and obligations for collecting hazardous waste;
- reporting systems on hazardous waste data;
- industrial structures;
- levels of application of cleaner technology, etc.

Therefore, comparison of data on hazardous waste from one country to another must be made with caution.

## 1.2. Purpose of the report

The European Environment Agency (EEA) asked the European Topic Centre on Waste (ETC/W) to review the existing data on hazardous waste and help improve their comparability.

In order to do this, it is necessary to investigate the member countries' recorded hazardous waste generation in a more detailed manner than has been done before. A phased approach was used. In the first phase, the ETC/W decided to restrict the study to the countries and regions represented in the ETC/W: Austria, Denmark, Germany (North Rhine-Westphalia), Ireland, and Spain (the Basque Country and Catalonia). In order to make comparability possible, a common classification system was applied: the hazardous waste list (HWL), which is part of the European waste catalogue (EWC).

The study showed that it is possible to reclassify most of the hazardous waste according to the HWL and the EWC, even though it was originally registered according to a national or regional classification system. In this way, it has been possible to establish comparable datasets for hazardous waste from these countries and regions.

The study also showed that a relatively small number of waste types represented a large proportion of the total hazardous waste generation. On average, the 20 largest waste types represented approximately 75 % of the total waste generation.

During Phase 2, the scope of the work was extended to all other EEA member countries. A questionnaire was sent to countries in August 1999 seeking information about:

- hazardous waste generation classified according to the European waste catalogue at two-digit level;
- the 20 largest waste types classified according to the European waste catalogue;
- the relationship between the national waste classification codes and the European waste catalogue;
- hazardous waste generation classified according to economic activity (NACE codes);
- general questions on hazardous waste generation and data collection.

The results of the survey are presented on the following pages.

## 1.3. Structure of the report

In the absence of a common structure, it is difficult to arrive at any conclusions about data comparability. Table 1 (OECD/Eurostat survey) shows that many countries report hazardous



waste data according to their own national classification systems. Therefore, an important part of the strategy for listing information is to find a common classification for hazardous waste, within which the existing data can be related. In Chapter 2 the common structure developed for the purpose of this study is described. Chapter 3 details the responses from the countries and regions. Chapter 4 contains the results and conclusions of the comparison between countries and regions.

Individual country or region reports are presented in Annex 3. The country reports summarise classification and reporting systems for each country or region and provide a detailed breakdown of hazardous waste arisings related to waste type and industrial activity as well as a listing of any special national/regional hazardous waste types.

While the purpose of this study is an attempt to improve comparability of data, it should be noted that re-aggregated data presented in this report do not supersede officially reported data from a country or region.

## 2. Common structure

### 2.1. Classification of hazardous waste

When comparing the generation of hazardous waste across countries, it is very important that the reported data be based on the same definitions, i.e. that a common classification be applied. Table 1 shows, however, that different classification systems are applied in different countries.

Some countries report according to their own national classifications, some according to the Basel classification, while others report according to the HWL.

#### 2.1.1. *The Basel classification*

In their questionnaire for 1998, OECD/Eurostat asked for waste generation according to the Basel classification. Only a few countries have given detailed information. Due to the quality of the data reported, the Basel classification was considered unsuitable for use in this study as the common structure for comparing datasets.

#### 2.1.2. *European waste catalogue and the hazardous waste list*

The creation of the EWC and HWL represents the most significant move to date towards harmonisation of information on waste production and management in Europe and the development of a common Europe-wide waste classification system for hazardous and non-hazardous waste.

The European waste catalogue (EWC) was established in December 1993 by Council Decision 94/3/EC and included at that time 645 waste types. The hazardous waste list (HWL) was subsequently established in December 1994 by Council Decision 94/904/EC. The HWL is a subset of the EWC and consisted of 236 of the 645 EWC waste types, which were considered by the EU to be hazardous at the time that the list was agreed.

Both the EWC and HWL are subject to an ongoing revision, based on practical experience of their use by Member States. In May 2000, the EWC and HWL were revised for the first time and the HWL was amended significantly. This version of the EWC and HWL consists of 687 waste types of which 290 are considered as hazardous. Later amendments to the EWC and HWL from 2001 are not analysed in this report. The EWC and HWL were amended in January and July 2001 and when it comes into force by January 2002, the EWC will comprise 849 codes of which 404 are considered hazardous waste.

In general, the EWC and HWL are source and process-based listings of wastes. The EWC has three levels:

- (a) the highest level with 20 entries (two-digit codes) often describing the source and the branch generating the waste;
- (b) each of the 20 main group has several subgroups (four-digit codes) often describing the process generating the waste;
- (c) each subgroup has several waste codes (six-digit codes) describing the substances in waste. The HWL is defined on this level.

In general, the implementation of the EWC and HWL has been slow. In some countries, the EWC and HWL have been implemented fully into national legislation and data registration systems. In other countries, the EWC and HWL are used more as reference lists. A major problem for several Member States has been the fundamental difference between the national substance-based waste lists and the source/process approach used for the EWC and HWL. This is because the same waste material can appear several times in the HWL, when it is produced by several sources. Table 2 illustrates this problem for Austria as an example: the waste type 'Paper filter mainly with noxious organic contaminants' can be related to 15 different HWL or EWC codes. However, the HWL is now the common classification system

Austrian waste catalogue						Table 2
No	National code	National language	English	EWC code	EWC description	H: HWL E: EWC
3	18710	Papier mit schädlichen Verunreinigungen, vorwiegend organisch	Paper filter mainly with noxious organic contaminants	07 01 09	Halogenated filter cakes, spent absorbents	H
				07 01 10	Other filter cakes, spent absorbents	H
				07 02 09	Halogenated filter cakes, spent absorbents	H
				07 02 10	Other filter cakes, spent absorbents	H
				07 03 09	Halogenated filter cakes, spent absorbents	H
				07 03 10	Other filter cakes, spent absorbents	H
				07 04 09	Halogenated filter cakes, spent absorbents	H
				07 04 10	Other filter cakes, spent absorbents	H
				07 05 09	Halogenated filter cakes, spent absorbents	H
				07 05 10	Other filter cakes, spent absorbents	H
				07 06 09	Halogenated filter cakes, spent absorbents	H
				07 06 10	Other filter cakes, spent absorbents	H
				07 07 09	Halogenated filter cakes, spent absorbents	H
				07 07 10	Other filter cakes, spent absorbents	H
				15 02 01	Absorbents, filter materials, wiping cloths, protective clothing	E

Source:  
FEA-Austria, 1999.

Austrian waste catalogue related to the amended EWC						Table 2a
National code	National language	English	EWC code	EWC description		Source:
18710	Papier mit schädlichen Verunreinigungen, vorwiegend organisch	Paper filter mainly with noxious organic contaminants	15 02 02*	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective		Comments from the Federal Environment Agency Austria 2001.

for hazardous waste in EU, and as such, it is considered appropriate to use it in this study as the principal classification system.

### 2.1.3. Substance-based aggregation of information

When waste classified according to a national classification system can be assigned to several different EWC and HWL codes, the use of the waste fraction for statistical purposes is difficult. Eurostat has therefore proposed a substance-oriented classification called EWC-STAT,

based on an aggregation of six-digit EWC codes. This classification is used in the Commission's proposal of 13 July 2000 for a Council regulation on waste-management statistics.

The EWC/STAT has three different aggregation levels. The classification includes a differentiation between hazardous waste and non-hazardous waste. Some of the EWC/STAT codes cover hazardous waste only, some include non-hazardous waste only and some consist of codes for both hazardous and non-hazardous waste (in these cases Member States have to report two figures, one hazardous and one non-hazardous). Hazardous waste is defined, according to six-digit HWL codes in the EWC.

#### **2.1.4. Conclusion on use of a common classification**

Valuable information can be obtained from both a source/process-oriented as well as a substance-oriented classification. The source/process-based classification system is useful for waste minimisation and cleaner technology purposes as well as comparability of waste from specific branches. A substance-oriented classification will provide information on overall amounts, how to treat the waste once it is produced and the need for treatment capacity.

It has been concluded that setting up a main structure for listing existing information on hazardous waste will require that each country/region's existing classification be related, in the first instance, to the HWL.

## **2.2. Classification of economic activity**

Depending on the industrial structure in a country or region, the amounts and types of hazardous waste will vary. When explaining variations in hazardous waste generation, it is therefore relevant to consider economic activities.

### **2.2.1. NACE**

In the EU, the common classification for economic activity is NACE (general industrial classification of economic activities within the European Communities). The amounts of hazardous waste generation will therefore be related, where possible, to NACE codes. NACE has four levels. The classification used in this study is presented in Table 3, based mainly on NACE level 2.

## **2.3. The information list**

In order to compare the differences in hazardous waste generation between different EEA member countries and regions, the ETC/W has obtained from each of the countries and regions the following information:

*(a) A list of hazardous waste generation classified according to the European waste catalogue at two-digit level*

The countries were asked to classify the waste according to the 20 main groups of the EWC (two-digit level) and to provide an amount for the total generation of hazardous waste in the country/region.

*(b) A list of the 20 largest waste types classified according to the European waste catalogue at six-digit level*

Despite the fact that the HWL consists of 290 waste types, the 20 largest waste types in most countries represent the bulk of the hazardous waste generation.

The top 20 list of hazardous waste types includes:

- waste types already included in the HWL; referred to here as 'H-codes';
- waste types included in the EWC but not contained in the HWL, which in the national implementation of the EWC and HWL are classified as hazardous; referred to here as 'E-codes';

- waste types not contained in the EWC; in the national implementation of the EWC and HWL, these waste types have been added as new hazardous codes and they follow the structure of the EWC; referred to here as 'A-codes'.

Where it was not possible to classify a waste to the six-digit codes, a four-digit level subgroup was accepted. It is recognised that this is not ideal due to the fact that a HWL entry requires a six-digit code. However, this was in certain cases the best result that could be achieved when converting from substance-based national classifications to the HWL.

*(c) The relationship between the national waste classification codes and the European waste catalogue*

Some countries have converted data relating to their national classification of hazardous waste to the European waste catalogue/hazardous waste list. Other countries do not have a national classification and only classify wastes according to the European waste catalogue.

*(d) Hazardous waste generation classified according to economic activity (NACE codes)*

The countries have been asked to classify hazardous waste according to the NACE codes, which is an EU classification for economic activity.

*(e) General questions on hazardous waste generation and data collection*

These questions sought information on how the data for this survey are collected and what data sources were used.

				NACE classification	Table 3		
NACE	Name	NACE	Name				
A	Agriculture	E	Electricity, gas and water supply	Source: Comments from the Federal Environment Agency Austria 2001.			
B	Fishing	F	Construction				
C	Mining and quarrying	G 50 2	Maintenance and repair of motor vehicles				
DA	Manufacture of food, beverages and tobacco	G total	Wholesale and retail trade, repair work except motor vehicles				
DB	Manufacture of textiles, wearing, apparel	H	Hotels, restaurants				
DC	Manufacture of leather	I 61	Shipping				
DD	Manufacture of wood products	I total	Transport, storage and communication				
DE	Manufacture of printing and publishing	K 74 81	Photographic activities				
DF	Manufacture of refined petroleum products etc.	J+K total	Financial intermediation, business act				
DG	Manufacture of chemicals	L	Public and personal services				
DH	Manufacture of rubber and plastic products	M	Education				
DI	Manufacture of other non-metallic mineral products	N	Human health activities				
DJ	Manufacture and processing of basic metals	O	Refuse disposal				
DK	Manufacture of machinery and equipment	X	Activity not stated				
DL	Manufacture of electrical and optical equipment						
DM	Manufacture of transport equipment						
DN	Manufacture of furniture, manufacturing n e c						
(D total)	Incl. amounts which cannot be related to a specific D-category)						

## 3. Data from member countries

Since the ETC/W sent out questionnaires to EEA member countries in August 1999, 12 countries and regions have submitted returns. Together with the six countries and regions participating in the 1999 report, the total number of countries and regions is 18. Three countries, Liechtenstein, Luxembourg and the United Kingdom, did not submit returns.

### 3.1. Available data from the countries and regions

It appears from Table 4 that variations in years of reference are considerable. Flanders (Belgium) has the most comprehensive time series 1992-98 while North Rhine-Westphalia, Basque Country and Sweden only have information from years before 1995. Wallonia (Belgium), Finland, Greece, Ireland, Italy, Norway and Portugal only gave information from recent years, in most cases because the collection of comparable data on hazardous waste has only been initiated recently. Austria, Flanders, Denmark, Iceland and Catalonia (Spain) appear to have comparable information for years before as well as after 1995.

Seven EEA member countries have conversion tables between their national classification systems and the EWC or HWL. Additional conversion lists are used in Spain, Belgium and Germany at regional level. Finland, Ireland, Italy, Portugal and Greece did not need conversion tables as they already use the EWC or HWL for their national data registration. At the regional level, the HWL or EWC is implemented in the Basque Country, Catalonia and Wallonia. The countries that have introduced the HWL in national data collection systems either have breaks in their time series or have only started data collection in recent years.

#### 3.1.1. Data on EWC codes

Table 4 shows that information on hazardous waste generation was not readily available in all member countries. Information on hazardous waste generation classified according to EWC codes was especially difficult to produce for most of the countries.

Apart from the countries and regions participating in the first ETC/W study on hazardous waste generation, only three countries provided information on the 20 largest waste fractions classified according to the EWC at six-digit level. These countries presently classify their wastes according to the EWC and do not need to translate from a national classification system to the EWC. Extreme difficulties were experienced by most of the other countries that presently classify waste based on a national system in attempting to make this translation.

At the aggregated level (two-digit) of the EWC nine countries and three regions have been able to deliver information.

One of the conclusions of the first report was that the 20 largest waste fractions at national level would cover approximately 75 % of total generation of hazardous waste. Based on this conclusion, the ETC/W asked for data only for the 20 largest fractions of hazardous waste. It was anticipated that member countries would be able to relate national hazardous waste codes to one or more EWC/HWL codes. However, this was not the case and only countries already using the HWL provided information at six-digit-level.

#### 3.1.2. Data on NACE specification

Classification according to economic activity appears to be better established in member countries. In all, 10 countries and four regions provided information on distribution of hazardous waste based on NACE classification. Of the responding countries and regions, Iceland, Brussels and Wallonia had no information on economic activity according to NACE for sources of hazardous waste generation.

Overview on information given to the survey

Table 4

Country/region	Filled in questionnaire	Years Available	Conversion list national code to the EWC	EWC at 2-digit level	Top 20 on 6-digit level	NACE specification
Austria	1993–96 study	1993–96	Yes	Yes	Yes	Yes
Belgium, Brussels	Yes	N/A	No	No	No	No
Belgium, Flanders	Yes	1992–98	Partly	No	No	Yes
Belgium, Wallonia	Yes	1998	No	Yes	No	No
Denmark	1993–96 study	1995–96 +1998	Yes	Yes	Yes	Yes
Finland	Yes	1997	Yes	Yes	No <sup>2</sup>	Yes
France	Yes	N/A	N/A	No	No	No
Germany, N R-W	1993–96 study	1993	Yes	No <sup>1</sup>	No <sup>1</sup>	Yes
Greece	Yes	1998	No	Yes	No	Yes
Iceland	Yes	1993–98	No	Yes	No	No
Ireland	1993–96 study	1996	Yes	Yes	Yes	Yes
Italy	Yes	1997	Yes	Yes	Yes	Yes
Liechtenstein	No	—	—	—	—	—
Luxembourg	No	—	—	—	—	—
The Netherlands	Yes	1995–97	No	No	No	Yes
Norway	Yes	1998	Yes	Yes	Yes	Yes
Portugal	Yes	1997–98	No	Yes	Yes	Yes
Spain, Basque C	1993–96 study	1994	Yes	Yes	Yes	Yes
Spain, Catalonia	1993–96 study	1994–96	Yes	Yes	Yes	Yes
Sweden	Yes	1993	No	No	No	Yes
United Kingdom	No	—	—	—	—	—
Number of positive answers	18	—	—	12	8	14

Note: N/A= not available.

<sup>1</sup> North Rhine-Westphalia submitted information on six-digit level and this was included in the first ETCW study on hazardous waste. However, only 39 % of the hazardous waste from the region can be related to the HWL, and it has therefore been decided not to include North Rhine-Westphalia in the sections of the report dealing with the HWL.

<sup>2</sup> For reasons of confidentiality Finland cannot provide top 20 numbers.

### 3.2. General questions on hazardous waste data

In this section, the responses provided to the general questions asked in the questionnaire are analysed. These questions concern sources of hazardous waste and the application of the HWL in relation to national information on hazardous waste.

Question asked:

*Is the information given for this survey on generation of hazardous waste based on data reported to the national or regional authorities by producers; collectors; treatment/disposal facilities; reporting from municipalities; estimates; no information on generation; competent authorities?*

Responses are presented in Tables 5 and 6, which contain details of the various information sources used by each of the Member States in producing their data in relation to hazardous

waste. In Table 5, countries with a uniform data collection for all sources of hazardous waste are presented, while Table 6 presents countries with different sources of information for each of the sectors.

### 3.2.1. Countries with uniform data sources

In the group of countries using the same data source for all economic sectors (shown in Table 5), only Ireland has included the producers of waste in its survey on generation of waste.

Centralised information from waste collectors and treatment facilities are used in Austria, Denmark, and Ireland, and in two regions of Belgium. Operators of treatment facilities possess information about the composition and treatment of hazardous waste, but for information about the source of waste, they have to consult the collectors. Waste collectors have the information on the source and distribution of waste by sectors and some information on the composition of waste, but less information on the treatment of waste. The German system of information is based on information from competent authorities, which use a waybill system for input data. This system can also be regarded as centralised.

Country	Producers	Collectors	Treatment/ disposal facilities	Reporting from municipalities	Estimates	No information on generation	Competent authorities
Austria			X				
Brussels		X					
Denmark			X				
France					X		
Germany							X
Iceland						X	
Ireland	X	X	X				
Spain					X		
Wallonia		X	X				

**Note:** Unfortunately, Iceland gave no information on the source, partly because our question was not precise on the difference between registration of collection and the generation. All submitted figures are not for waste generated but for waste that is collected and treated.

### 3.2.2. Countries with different data sources

In the group of countries using different data sources, the Netherlands, Norway and Italy appear to be using one or two sets of sources for all sectors. The Netherlands has two sources of information for business activities: collectors and treatment/disposal facilities. Italy and Norway uses four kinds of sources for information, including the municipalities for household generation.

Municipalities are the main source of information concerning hazardous waste from households in Greece, the Netherlands, Norway and Sweden. In Norway, waste collectors are also used as a source of information. Greece indicates that estimates are also used, which probably means that the estimates are based on a subset of municipalities. Portugal is the only country with no information on hazardous waste from households, since no collection system for hazardous waste from households exists.

Two countries have indicated that they use estimates for this survey. Greece gave the information on which sources the estimate is based, while Spain only indicates that the information is based on estimates. France gave no information to the survey but the report 'The environment in France' indicates an estimate of 9 million tonnes in total yearly generation of hazardous waste.



Countries with different source of information for various sectors								Table 6
Country	Source (explanation below)	Producers	Collectors	Treatment/disposal facilities	Reporting from municipalities	Estimates	No information on generation	Competent authorities
Belgium (Flanders)	A							
	M	X		(X)				
	W			(X)				
	H		(X)	(X)	X			
Greece	A							
	M	X		X	X	X		
	W					X		
Italy	A	X	X	X				
	M	X	X	X				
	W	X	X	X				
	H		X	X	X			
Netherlands	A		X	X				
	M		X	X				
	W		X	X				
	H					X		
Norway	A	X	X	X	X			
	M	X	X	X	X			
	W	X	X	X	X			
	H		X		X			
Portugal	A	X		X				
	M	X		X				
	W			X				
	H						X	
Sweden	A							
	M	X (1)						
	W							
	H					X		

**Note:** Source codes: A = agriculture, fishing & quarrying; M = manufacturing, energy and water, supply, construction; W = wholesale, retail, transport public and private services; H = households.

### 3.3. Overview on the implementation of the HWL

Two questions were asked in order to find out how advanced member countries were in the process of implementing the HWL:

1. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on: the hazardous waste list or the national implementation of the hazardous waste list? The national hazardous waste classification?
2. When authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on: The hazardous waste list or the national implementation of the hazardous waste list? The national hazardous waste classification?

Responses from countries are summarised in Table 7.

Several countries has implemented the HWL, both in relation to the EU and in national practice, namely Belgium (Wallonia), Denmark, Finland, Germany, Ireland, Italy, Norway,

Table 7 Status concerning implementation of the HWL

Country	Applied classification for generation		Applied classification for permits and licences		
	HWL or national implementation of the HWL	The national hazardous waste classification	HWL or national implementation of the HWL	The national hazardous waste classification	Information from the Environment DG on the implementation of the HWL, July 1999
Austria		X	March 1998		Yes
Belgium, Brussels		X		X	Yes
Belgium, Flanders		X	X		Yes
Belgium, Wallonia	X		X		Yes
Denmark	X		X		Yes
Finland	X		X		Yes
France	Since Jan. 1999	Until Dec. 1998	Since Jan. 1999	Until Dec. 1998	No
Germany	Since Jan. 1999	Until Dec. 1998	Since Jan. 1999	Until Dec. 1998	Yes
Greece	78/319/EEC		No licences have been issued <sup>1</sup>		No <sup>1</sup>
Iceland	The information not given				Not a member of the EU
Ireland	X		X		Yes
Italy	X		X		No information until July 99
Luxembourg		X	No information given		Yes
Netherlands		X		X	Yes
Norway	X			X	Yes, not a member of the EU
Portugal	X <sup>2</sup>		X		Yes
Spain	X	1	X	1	Yes
Sweden		X		X	Yes
United Kingdom	UK did not reply to the ETC/W survey				Yes for N. Ireland

<sup>1</sup> Greece: the collection on data on generation of hazardous waste, 1999 and onwards, is being carried out on the basis of HWL classification. Licences for the collection of hazardous waste are based on the HWL classification. Licences for central installations for the treatment/disposal of hazardous waste have not been issued, as installations of that kind do not exist.

<sup>2</sup> Spain: in Table III of the ETC/W survey, the main waste categories considered as hazardous by the different Autonomous Communities are included. At a national level, the list for hazardous waste is currently in force.

Portugal and Spain. No national classification system existed in Ireland, Portugal or Spain prior to the establishment of the HWL. These countries therefore did not need to convert from a national classification system to the HWL.

In all, 10 countries have implemented the HWL in national legislation, but there are still countries and regions, such as the Netherlands, Flanders and Sweden, which do not use the HWL in data collection. Similarly, when issuing permits or licences for the generation, collection, treatment/disposal of hazardous waste the Netherlands and Sweden still use national classification systems. France, Greece and the UK have yet to implement the HWL.

## 4. General findings and conclusions

The information provided by countries and regions has allowed some conclusions to be drawn, which are presented in this chapter. Detailed information for each country and region is presented in Annexes 3A to 3O.

Due to lack of information, it has not been possible to include all countries in all findings and conclusions. The reason for this is that only some countries have been able to provide information on the 20 largest waste types and not all countries have information on hazardous waste generation classified according to NACE codes.

### 4.1. Trends in hazardous waste generation

Information which related to more than one year was available from all countries/regions except Brussels, France and Sweden. The amounts of hazardous waste collected are increasing in most countries/regions.

Hazardous waste generation in Europe (1 000 tonnes)									Table 8
Country	1990	1991	1992	1993	1994	1995	1996	1997	1998
Austria				499	513	577	606		
Belgium, Brussels									
Belgium, Flanders					1 033 <sup>1</sup>	1 079 <sup>1</sup>	1 410 <sup>1</sup>	1 625 <sup>1</sup>	
Belgium, Wallonia						419	427	470	475
Denmark					194 <sup>1</sup>	247	264	249	281
Finland			559 <sup>1</sup>					481	
France	7 000 <sup>1</sup>						9 000 <sup>3</sup>		
Germany	13 079 <sup>1</sup>			9 093 <sup>1</sup>					
Greece	450 <sup>1</sup>		450 <sup>1</sup>			350 <sup>1</sup>			287
Iceland				4.9	5.7	4.3	5.7	5.8	6.8
Ireland	66		99			248	230		
Italy	3 246 <sup>2</sup>	3 387 <sup>2</sup>				2 708 <sup>2</sup>		3 401	
Luxembourg	116 <sup>1</sup>			861	811	197 <sup>1</sup>	157 <sup>1</sup>	142 <sup>1</sup>	
Netherlands	1 040 <sup>1</sup>		1 430 <sup>1</sup>	836	890	868	959	1 271	
Norway	60			98	92	102	119	128	141
Portugal						668 <sup>1</sup>		595 <sup>1</sup>	
Spain	1 700 <sup>1</sup>				3 394 <sup>1</sup>				
Sweden				394					
United Kingdom			2 452 <sup>1</sup>	2 077 <sup>1</sup>					

<sup>1</sup> Eurostat, 2000, Waste generated in Europe, data 1985-97, European Commission.

<sup>2</sup> OECD, 1997, OECD Environmental Data. Compendium 1997.

<sup>3</sup> Institut Français de l'environnement, 'The environment in France', Orléans, 1999.

Source: ETC/W questionnaires 1998 and 1999.

The data show increasing quantities of hazardous waste during the 1990s for Austria, Belgium, Denmark, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway and Spain, with a decrease in quantities in Finland, Germany, Greece, Portugal and the United Kingdom. However, the trend is not very clear due to the fact that the amounts of hazardous waste in some countries fluctuate from year to year. Furthermore, some countries do not have access to new data, which makes it difficult to establish reliable trends in relation to the generation of hazardous waste.

Increasing quantities of hazardous waste can be the result of better collection of information and registration of waste, and not necessarily the result of a real increase in waste generation.

## 4.2. Amendment of the HWL

A general problem is that the HWL consists of too few codes to cover what has been regarded as hazardous waste in each country or region. Therefore, when comparing the total quantities of hazardous waste between countries and regions, the variations can partly be explained by the fact that the HWL does not cover all waste types that are regarded as hazardous at national or regional level.

### 4.2.1. Future hazardous waste list improves comparability

As mentioned in Section 2.1.2, the EWC/HWL list has recently been amended and more waste types will be considered as hazardous from 2002. In Table 11 and the top 10 and top 20 lists in Annex 1, it has been indicated for each waste type whether it is according to the previous and current list:

- H-codes: included in the HWL;
- E-codes: included in the EWC, but not the HWL;
- A-codes; not included in the EWC.

From Table 9, it appears that due to the amendments a larger part of the waste types applied in the countries are included in the HWL. In the top 5, only 51 % of the waste types were part of the previous HWL, while the other 49 % were E-codes and A-codes. After the amendment, waste types considered as hazardous increase the percentage to 69 % of the total.

Considering the top 10 and the top 20, 60 % of the waste types that were classified as hazardous according to the previous HWL rose to about 75 % using the current HWL.

### 4.2.2. Comparability in quantities of waste

Although a large number of waste codes are defined as E-codes or A-codes, this does not necessarily mean that large quantities of waste are registered according to these codes. A large number of E-codes and A-codes may represent relatively small amounts of hazardous waste. In such cases, it may be possible to compare the total of hazardous waste generation amongst the countries and regions. On the other hand, where E-codes and A-codes relate to large quantities of waste, it is difficult to compare the hazardous waste generation between countries and regions.

Table 9

The distribution of H, E and A-codes in percentage of the number of waste types used in top 5, 10 and 20 respectively

	Top 5			Top 10			Top 20		
	H	E	A	H	E	A	H	E	A
Previous EWC	51	37	11	63	27	10	60	27	13
Amended EWC	69	23	9	75	19	6	74	18	8

According to Table 10 the percentage of waste quantities related to the HWL is greater than the percentage of waste types. Some 64–72 % of the waste quantities could be related to the HWL before the amendment and 80–84 % after. Thus, it appears that the amendment of the EWC has led to a greater comparability of the total hazardous waste quantity.

The distribution of H, E and A-codes in percentage of the waste quantities in top 5, 10 and 20 respectively

Table 10

	Top 5			Top 10			Top 20		
	H	E	A	H	E	A	H	E	A
Previous EWC	64	28	8	72	21	7	71	23	6
Amended EWC	80	15	6	84	12	5	81	15	4

Even though 80 % of the hazardous waste quantities can be related to the HWL, there are major variations between countries. This is evident in Figure 1 showing the percentage of the hazardous waste production in countries related to the HWL before and after the amendment.

**4.2.3. The amended hazardous waste list**

In all countries/regions <sup>(1)</sup>, the amendment has led to an increase in the quantities that can be related to the HWL, which will improve the comparability of hazardous waste data between countries. However, in some countries/regions, a significant proportion of the hazardous waste generated still cannot be readily compared because of the different classifications used. This is apparently the case in Norway and Catalonia with less than 50 % of the nationally classified hazardous waste related to the HWL. Four countries/regions — Denmark, Italy, Portugal, and the Basque Country — have a percentage of waste related to the HWL exceeding 80 % after the amendment.

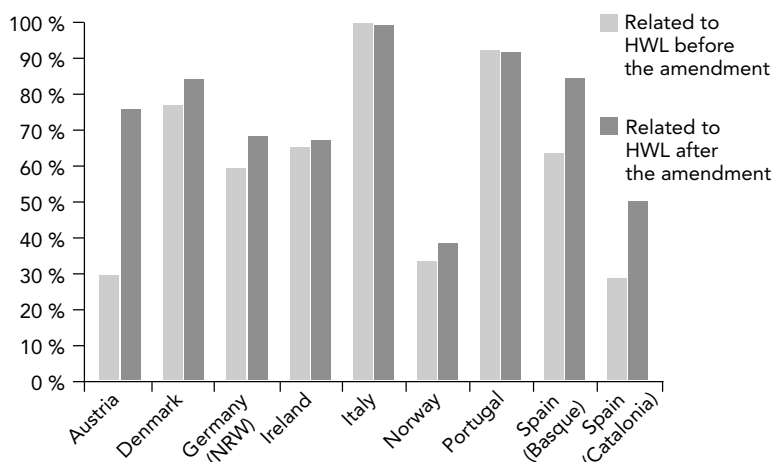
These large variations can to some extent be explained by the fact that some countries have special waste streams, which according to their physical characteristics can be defined as hazardous, but have not yet been introduced in the HWL. Yet another explanation is that the same waste types are considered as hazardous in one country but not in another. Due to these variations, it is very difficult to compare the total hazardous waste generation between countries. At the level of specific fractions (detailed code), it may be easier to compare information between countries using the HWL and European waste catalogue.

For the majority of countries neither the HWL nor the European waste catalogue is used for classification. Therefore it is difficult to compare the total generation of hazardous waste between member countries.

<sup>(1)</sup> In the cases of Italy and Portugal hazardous waste list has been implemented without national amendments, therefore hazardous waste from these countries was already entirely classified according to the hazardous waste list before the amendment.

Percentage of the waste quantities from the 20 largest waste types that can be related to the HWL before and after the amendment

Figure 1



### 4.3. Conclusion on comparability of the present classification systems for hazardous waste

It is evident that the HWL consists of insufficient codes to cover what has been regarded or reported as hazardous waste in each country or region. The amendment of the EWC has improved the comparability, as more waste types are now regarded as hazardous, which has increased the amounts of hazardous waste in countries and regions that can be related to the HWL. However, large quantities of waste are still not covered by the list and the majority of countries have no data on hazardous waste generation classified according to the EWC/HWL.

### 4.4. Quantities of hazardous waste related to the EWC at two-digit level

In the questionnaire, countries were asked for information on hazardous waste quantities classified according to the EWC at two-digit level. The EWC at two-digit level shows the waste generation from sectors, industries or processes. Nine countries and three regions were able to provide the requested information and the results are presented in Table 11.

According to the table more than 25 % of the hazardous waste originates from organic or inorganic chemical processes. Finland, Ireland, Italy, Norway and Spain all report relatively large quantities of these waste types.

Other important sources are 'Inorganic wastes from thermal processes' (13 %), 'Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydrometallurgy' (13 %), 'Oil wastes and other liquids' (10 %) and 'Wastes from waste treatment facilities' (8 %). The rest of the sources are all of minor importance. It is interesting to note that waste from households is only about 1 % of the total hazardous waste quantities.

### 4.5. Quantities of hazardous waste related to the EWC at six-digit level

To assess whether the same waste types in the participating countries and regions dominate hazardous waste generation, countries were asked for information on the 20 largest hazardous waste types classified according to the EWC at six-digit level. Only six countries and two regions were able to deliver this information. Of these, three countries and two regions were already included in the 1999 ETC/W study on hazardous waste.

Table 12 presents the top 5 hazardous waste generation in the eight countries/regions. In the 1999 study, only one waste type was represented among the top 5 in more than one country. Thus, 29 different waste types out of 30 possible were represented on the top 5 lists of the six participating countries/regions <sup>(2)</sup>.

Table 12 shows that the picture has not changed considerably by extending the number of countries/regions from six to eight. The number of waste types represented in more than one country has increased from one to four and a total of 35 waste types (out of 40 possible) are among the top 5 in the nine countries. This emphasises the fact that the hazardous waste generation is not homogeneous, as different types of hazardous waste dominate in different countries.

Tables similar to Table 12 have been prepared for the top 10 and top 20 and can be found in Annex 1. An overview of the number of present waste types in the top 5, top 10 and top 20 is given in Table 13 below. It also shows the frequency of the waste types, i.e. The number of countries in which the different waste types are present.

The number of waste types present increases from the top 5 to top 10 and to top 20. However, the number of waste types is not increasing with the same rate as the maximum number of possible waste types. This can be explained by the fact that the number of countries 'sharing' the same waste type is increasing considerably from top 5 to top 10 and top 20. For instance, in the top 5 only four waste types are shared by two or more countries and whereas

<sup>(2)</sup> North Rhine-Westphalia was the sixth country participated in the first ETCW study on hazardous waste. However, only 39 % of the hazardous waste from the region can be related to the HWL, and it has therefore been chosen not to include North Rhine-Westphalia in this section about the HWL.

Quantities of hazardous waste classified according to the European waste catalogue at two-digit level (1 000 tonnes)

Table 11

Code	Description	A	B (Wall.)	DK	Fin	EL	IS	IRL	I	NL	P	E (Basq.)	E (Catal.)	Total	
		1996	1998	1996	1997	1998	1998	1996	1997	1998	1998	1994	1996	1 000 t.	%
1	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry	7	0	0	0			21					28	56	1
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing	22	92	0	2				0	0		0	60	176	2
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture		1	0	0			0	0	0	1		0	3	0
04	Wastes from the leather and textile industries	0	0	1	0			0	1	0	0	1	6	10	0
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	38	3	9	6	15		6	29	10	20	55	6	197	2
06	Wastes from inorganic chemical processes	11	13	5	122			3	261	266	10	54	56	801	10
07	Wastes from organic chemical processes	1	29	11	16	1		146	842	2	20	17	198	1 282	16
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	15	8	15	8		0	2	37	3	4	1	20	113	1
09	Wastes from the photographic industry	5	2	10	5		0	0	164	1		4	0	190	2
10	Inorganic wastes from thermal processes	64	90	34	27	109		1	367	51	4	104	186	1 037	13
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy	5	57	7	125			0	298	82	72	93	39	778	10
12	Wastes from shaping and surface treatment of metals and plastics	41	12	2	17	1		0	233	4	24	69	5	408	5
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)	33	33	35	66		5	28	392	50	83	17	25	767	10
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)	0	8	4	11		0	4	137	2	11	1	98	276	3 %
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	32	7	1	4			0		0		1	47	92	1
16	Waste not otherwise specified in the catalogue	67	57	11	27	4	1	6	318	117	20	1	21	650	8
17	Construction and demolition waste (including road construction)	66	18	5	9			0	21	2	0		1	123	2
18	Wastes from human or animal health care and/or related research	3	4	10	0		0	3	133	0	13		0	167	2
19	Wastes from waste treatment facilities, off-site waste water treatment plants and the water industry	140	40	91	28	36		4	164	11	11	40	96	660	8
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions	26	0	12	9			0	5	2	39	10	2	105	1
	Total amount related to the HWL/EWC/add. EWC	576	475	263	481	165	7	225	3 401	602	320	469	894	7 878	98
	Total amount not possible to relate to the HWL/EWC/add. EWC	29		18		121		5		5				179	2
	Total hazardous waste generation	606	475	281	481	287	7	230	3 401	607	320	469	893	8 057	100

Table 12

Top 5 of each country and region's hazardous waste generation related to the EWC on six-digit level (tonnes)

EWC codes	Description	Previous EWC/ HWL list	Current EWC list	A	DK	EI	I	N	P	E (Basque Country)	E (Catalonia)
01 03 99	Wastes not otherwise specified	E	E			20 900					
02 01 02	Animal tissue waste	E	E								40 835
05 05 01	Waste containing sulphur	E	E							45 532	
05 08 99 01	Alkalines containing oil or tars	A	A	36 342							
06 01 02	Hydrochloric acid	H	H							39 260	
06 01 99	Wastes not otherwise specified	H	H					5 821			
06 02 99	Wastes not otherwise specified	H	H					25 467			
07 01 01	Aqueous washing liquids and mother liquors	H	H				242 470				
07 01 02	Sludges from on-site effluent treatment	E	H								42 137
07 01 99	Wastes not otherwise specified	E	E								51 105
07 05 04	Other organic solvents, washing liquids and mother liquors	H	H			31 067					
07 05 99	Wastes not otherwise specified	E	E			49 244					
07 07 04	Other organic solvents, washing liquids and mother liquors	H	H			37 689					
10 01 02	Coal fly ash	E	E								125 513
10 01 08	Other sludges from gas treatment	E	E		11 073						
10 02 03	Solid wastes from gas treatment	E	H		11 856					62 920	
10 02 04	Sludges from gas treatment	E	H					27 696			
10 03 04	Primary smelting slags/white drosses	H	H								
10 04 01	Slags (1st and 2nd smelting)	H	H				241 223				
11 01 04	Cyanide-free wastes not containing chromium	E	E								
11 01 05	Acidic pickling solutions	H	H							64 200	
11 02 02	Sludges from zinc hydrometallurgy (incl. jarosite, goethite)	H	H					70 999	52 000		
12 01 00	Wastes from shaping	E	E						20 212		
12 01 09	Waste machining emulsions free of halogens	H	H							69 425	
13 02 02	Non-chlorinated engine, gear and lubricating oils	H	H		16 099		197 156		13 538		
13 02 03	Other engine, gear and lubricating oils	H	H						19 336		
13 05 03	Interceptor sludges	H	H			14 349					
16 01 04 01	Discarded vehicles, not de-polluted	A	A	50 372							
16 06 01	Lead batteries	H	H				186 690				
16 08 02	Oil contaminated drilling mud	A	A					59 892			



EWC codes	Description	Previous EWC/ HWL list	Current EWC list	A	DK	EI	I	N	P	E (Basque Country)	E (Catalonia)
17 01 99 D1	Bricks, concrete, tiles and gypsum based or asbestos based materials...	A	A								
17 02 99 D1	Wood, glass and plastic with noxious contaminants	A	A								
17 05 01 01	Soil and stones, hazardous contaminated	A	A	60 344							
18 01 03	Other wastes whose collection and disposal is subject to special requirements...	H	H				131 181				
19 01 01	Bottom ash and slag	E	H	112 784							
19 01 03	Fly ash	H	H	25 557	9 065						
19 01 06	Aqueous liquid waste from gas treatment and other aqueous liquid waste	H	H								
19 01 07	Solid waste from gas treatment	H	H		69 801						
19 03 01	Wastes stabilised/solidified with hydraulic binders	E	H								77 964
20 01 21	Fluorescent tubes and other mercury containing waste	H	H						38 772		

Note: H = included in the HWL; E = included in the EWC; A = not included in the EWC.

35 waste types are shared in the top 20. Nevertheless, 110 different waste types are needed to define the top 20 wastes of the eight countries/regions. In that light, it seems reasonable to conclude that the hazardous waste generation is either very different or the waste classification is used in different ways in the countries and regions.

The number of waste types and the number of countries 'sharing' the waste types

Table 13

	Possible maximum No of waste types	Actual No of waste types	1 country	2 countries	3 countries	4 countries	5 countries
Top 5	40	35	31	3	1	-	-
Top 10	80	63	51	9	1	2	-
Top 20	160	110	75	25	6	3	1

#### 4.6. Domination of the major waste types

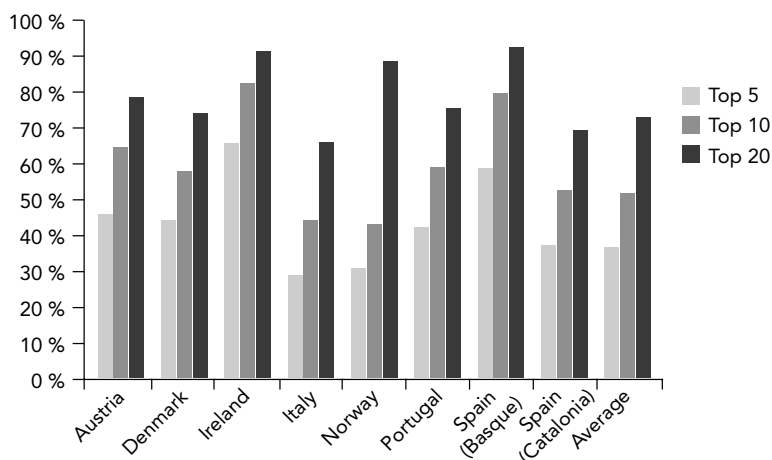
The top 20 waste types account for between 70 % and 90 % of the hazardous waste generated in most countries.

Figure 2 shows a cumulative percentage of the total hazardous waste quantities for each country and region covered by the top 5, top 10 and top 20 respectively. The top 5 list accounts for between 29 % and 67 %, the top 10 accounts between 44 % and 84 %, and the top 20 for 67 % and 93 %. Clearly, the 20 largest waste fractions seem to include most of the hazardous waste in the countries and regions.

On average, 74 % of the hazardous waste generated is accounted for by the top 20 wastes types in eight countries and regions.

Figure 2

Percentage of the total hazardous waste quantities in the countries and regions covered by top 5, 10 and 20 by country



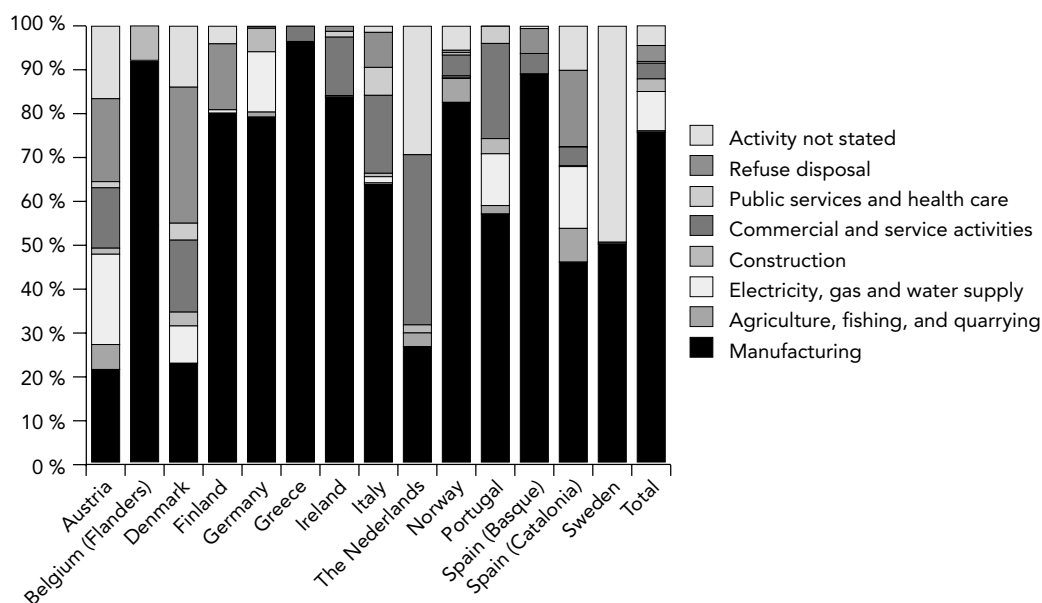
#### 4.7. Hazardous waste generation according to NACE activities

Table 14 and Figures 3 and 4 show the quantities and percentage of hazardous waste generation classified according to NACE activity. It has to be noted that for some countries a significant proportion of the NACE activities is not stated. This is especially the case for Sweden (50 %), the Netherlands (29 %), Austria (17 %) and Denmark (14 %).

In most countries and regions, manufacturing industry produces a significant proportion of the reported hazardous waste quantities. This is especially the case for Finland, Germany, Greece, Ireland, Norway and the Basque Country, where the manufacturing industry is responsible for more than 75 % of the total hazardous waste production. At the other end of the scale, Austria, Denmark and the Netherlands have less than 30 % of their hazardous waste production coming from the manufacturing industry. The term ‘manufacturing industry’ covers several industrial sectors and the waste production from these industries varies, which can be seen in Figure 4.

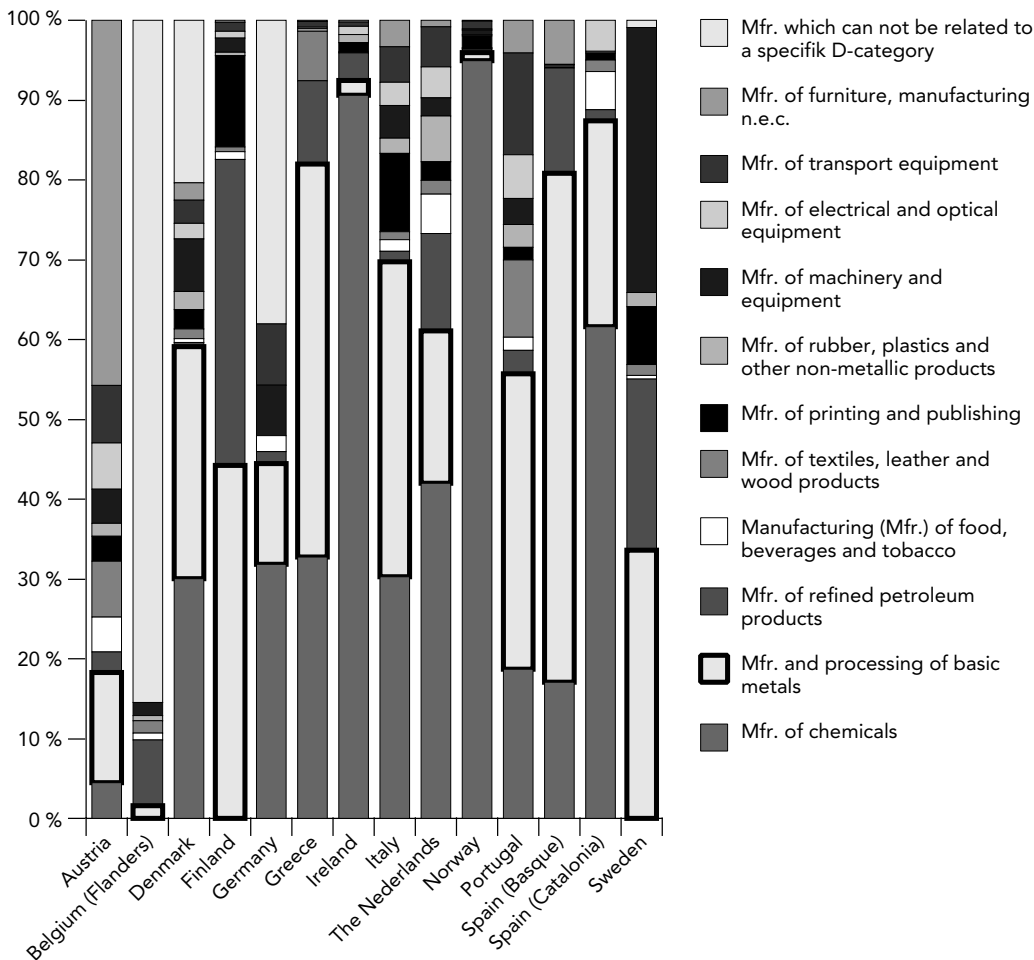
Figure 3

Hazardous waste generated according to NACE and stated in % of the total quantities



Hazardous waste from manufacturing processes distributed in different industries

Figure 4



Apart from the fact that the majority of the hazardous waste originates from the manufacturing sector, there are not many similarities between countries when comparing hazardous waste quantities classified according to NACE activities. Wastes from refuse disposal are important in countries with incineration (Austria and Denmark), while waste from commercial and service activities (e.g. shipping and repair of motor vehicles) are large contributors to hazardous waste generation in the Netherlands and Portugal.

The first and most obvious reason for these variations is differences in the industrial activity of the various countries. Thus, a country with a large steel industry will, naturally, have a large amount of waste from this sector. To have some indication on the reasons for differences in waste generation, the generation has to be related to the size of the different sectors or industries in the respective countries.

**4.7.1. Hazardous waste generation per employee**

The breakdown of industrial activity (or industrial structure) varies within each country and region. By relating the waste quantities to the number of employees in the countries, it should be possible to attain a comparable dataset for the generation of hazardous waste from the industries. In Table 15, the calculation of hazardous waste generation per employee in the manufacturing and other sectors are shown for the five ETC/W partner countries.

The size of manufacturing industries is approximately the same in Denmark and Austria, while its importance in the Basque Country and Germany is greater when measured by the number of full-time employees.

Table 14 Hazardous waste generation according to NACE codes. Stated in % of the total generation of hazardous waste

NACE code	Economic area	A	B	DK	Fin	G	GR	IR	I	NL	N	P	E	E	S	Total	
		1996	1998	1996	1997	1993	1998	1996	1997	1997	1998	1998	1994	1996	1993		1 000 t
A	Agriculture	2.3							0.3		0.0			4.6		63 840	0
B	Fishing	0.0		0.1					0.0		0.0					496	0
C	Quarrying	3.4			0.2	1.2	0.2	0.0	0.1	3.1	5.4	1.9		3.1	0.4	261 365	1
DA	Manufacture of food, beverages and tobacco	0.9	0.5	0.1	0.8	1.6		0.1	0.9	1.3	0.1	0.9	0.1	2.2	0.2	256 347	1
DB	Manufacture of textiles, wearing, apparel	1.1		0.0	0.1		1.8	0.0	0.5	0.2	0.0	0.9		0.1	0.1	36 512	0
DC	Manufacture of leather	0.0	0.1	0.1	0.0		1.1	0.0	0.0	0.2	0.0	0.1	0.2	0.6		18 022	0
DD	Manufacture of wood products	0.3	0.8	0.2	0.4		3.1	0.0	0.1	0.1	0.1	4.4			0.6	71 162	0
DE	Manufacture of printing and publishing	0.7		0.5	9.1			1.0	6.3	0.6	1.2	0.9	0.1	0.4	3.6	305 181	1
DF	Manufacture of refined petroleum products	0.5	4.5	0.1	30.6	1.2	10.1	2.9	0.8	3.2	0.4	1.7	11.7	0.6	10.7	696 224	3
DG	Manufacture of chemicals	1.0		6.8		25.2	31.5	75.8	19.3	11.1	78.4	10.6	15.2	28.3		4 289 441	18
DH	Manufacture of rubber and plastics products	0.1		0.3	0.2			0.7	0.9	1.3	0.0	0.3	0.0	0.1		60 823	0
DI	Manufacture of other non-metallic mineral products	0.3	0.4	0.2	0.1		0.3	0.2	0.4	0.2	0.1	1.3		0.0	0.9	44 791	0
DJ	Manufacture and processing of basic metals	2.9	0.9	6.6	35.3	10.0	47.4	1.5	25.1	5.1	0.8	21.1	56.8	11.8	16.8	2 758 831	12
DK	Manufacture of machinery and equipment	0.9	0.9	1.5	1.4	5.0			2.6	0.6	0.5	1.9			16.6	685 954	3
DL	Manufacture of electrical and optical equipment	1.2		0.4	0.7		0.2	0.9	1.9	1.0	0.1	3.1		1.8		124 608	1
DM	Manufacture of transport equipment	1.5		0.7	0.9	6.1	0.7	0.4	2.8	1.3	0.8	7.3				722 353	3
DN	Manufacture of furniture, manufacturing n.e.c.	9.7		0.5	0.2		0.1	0.2	2.1	0.2	0.1	2.3	4.9			169 545	1
	Manufacture which can not be related to a specific D-category		46.5	4.6	0.0	30.1									0.5	4 808 074	20
D total	<i>Manufacturing total incl. amounts which can not be related to a specific D-category</i>	21.2	54.4	22.6	79.9	79.2	96.3	83.7	63.7	26.5	82.5	56.9	89.0	45.9	50.0	15 047 868	64
E	Electricity, gas and water supply	20.7		8.6	0.8	13.8		0.3	1.4		0.3	11.9		14.2		1 624 826	7
F	Construction	1.4	4.7	3.2		5.4		0.1	0.8	1.8	0.4	3.5		0.2		791 838	3
G-50.2	Maintenance and repair of motor vehicles	4.2		13.0						2.2	0.0		0.2	2.6		127 616	1
G total	Wholesale and retail trade incl. G-50.2	7.4		13.6				7.9	14.9	3.0	2.9	3.5	2.0	2.6		726 879	3
H	Hotel, restaurants	0.6		0.0					0.0		0.0					3 793	0
I-61	Shipping	0.0						3.0		36.1	0.6		1.8	0.0		736 176	3
I total	Transport, storage and communication including I-61	3.7		0.6			3.5	5.5	1.0	36.1	1.5	2.2	1.8	1.6		836 566	4
K74.81	Photographic activities										0.1		0.9	0.0		4 848	0
J + K total	Financial intermediation, business activities incl. K-74.81	2.1		2.3				0.0	2.0		0.3	16.1	0.9	0.0		147 543	1
L	Public and personal services	0.3		0.4				0.0	2.2		0.4					81 271	0
M	Education	0.1		0.1				0.0	0.0		0.1					2 346	0
N	Human health activities	1.0		3.4		0.4		1.3	4.1		0.1	3.9		0.0		204 990	1
O	Refuse disposal	19.0	38.8	31.2	15.1	0.1		1.2	8.0		0.5		5.7	17.6		2 457 500	10
X	Activity not stated	16.6	2.1	14.0	4.0				1.4	29.5	5.5	0.0	0.5	10.1	49.6	1 204 840	5
Total ()		100	100	100	100	100	100	100	100	100	100	100	100	100	100		100
Total (1 000 tonnes)		605 819	4 418 729	263 987	480 985	9 091 000	286 856	229 561	3 401 141	1 988 000	607 489	333 045	468 806	886 241	394 300	23 455 959	

Hazardous waste generated per employee in Austria, Denmark, Germany, Ireland and Spain (the Basque Country and Catalonia) according to NACE code

Table 15

NACE code		Austria (1996) kg per employee	Denmark (1996) kg per employee	Germany (1993) kg per employee	Ireland (1996) excluding recovery on site kg per employee	Spain/Basque Country (1994) kg per employee	Spain/Catalonia (1996) kg per employee
	Total	199	132	188		301	304
D	Manufacture total	210	144	372	436	888	156
E – X	Total of trade, service, transport and infrastructure	223	135	129	628	49	1348

Note: The table is calculated with available data on the total amount of hazardous waste divided by the number of full-time occupied persons related to the same NACE classes.

Sources: Information from FEA-Austria, ETC/W-DK, Ministry of Environment in Germany, EPA-Ireland, Juntas de Residus-Catalonia, IHOBE-the Basque Country and the statistical offices in Austria, Denmark, Germany, Ireland, the Basque Country and Catalonia.

The difference in quantities of hazardous waste generated can be explained only partly by the number of employees in different industrial sectors. Overall, however, the generation of hazardous waste seems to be more closely related to the number of employees in specific sectors than to total population (see Table 16).

Hazardous waste generation per employee in manufacturing industries in selected member countries and regions in 1996

Table 16

NACE	kg/employee	Austria	Catalonia	Denmark	Ireland
D	Total	210	156	144	436
DA	Food, beverages and tobacco	69	87	4	2
DB	Textiles, wearing, apparel	173	5	7	0
DC	Leather	28	189	131	14
DD	Wood products	51	0	31	5
DE	Printing and publishing	83	30	35	6
DF	Refined petroleum products	1 084	329	343	787
DG	Chemicals	191	469	682	6 073
DH	Rubber and plastics products	14	6	45	84
DI	Other non-metallic mineral products	57	2	28	17
DJ	Basic metals	187	509	360	248
DK	Machinery and equipment	88	0	58	
DL	Electrical and optical equipment	107	78	29	46
DM	Transport equipment	275	0	87	415
DN	Furniture, manufacturing n.e.c.	1 211	0	46	35

Looking at the examples in Table 16, the high level of generation of hazardous waste from Ireland can be explained by the generation from chemical industries and to some extent from the manufacturing of transport equipment. Two arguments have to be considered before making any conclusions: what kind of chemical industry is dominating in the respective countries and what kind of waste will be classified as hazardous waste in the respective countries. These two aspects might be quite different from one country to another. The only existing information at this level is that waste generation in Ireland from chemical industries per employee is 10 times higher than the generation from chemical industries in Denmark, which generate three times as much as in Austria and approximately 50 % more than in Catalonia. The explanation for this difference might be found in the classification of hazardous waste, the specific kind of chemical industries and the kind of technology used in the respective countries.

A few major differences in waste per employee may, for certain industries, be explained by the presence of waste types considered as hazardous in only one country.

Looking at the most detailed level of NACE available, a few sectors appear to be comparable. For instance, the manufacturing of refined petroleum products is mainly one type of production. The variation in this case is one to three from the least to the most waste producing country. In this case, the explanations for different levels of hazardous waste generation is not the difference in industrial structures in member countries. Apart from a real difference in hazardous waste generation per employee, the explanations have to consider the kind of waste classified as hazardous.

For a more detailed analysis, it may be appropriate to examine the common classifications of hazardous waste against a more detailed breakdown of industrial structure. This was not possible due to the absence of data combining waste sources and waste fractions.

#### **4.7.2. Conclusions according to NACE activities**

Hazardous waste generation related to NACE activities shows that, first of all, knowledge of the industrial structure in a particular country or region is important in explaining differences in hazardous waste quantities, especially in the manufacturing industries. Secondly, a significant consideration is how energy is produced in each country and region. Thirdly, refuse-disposal activities give rise to significant hazardous waste generation, especially flue gas cleaning residues from waste incineration. In fact, the quantities of hazardous waste from waste incineration appear to be increasing due to higher environmental standards.

### **4.8. General conclusions on comparability of hazardous waste generation**

#### *Key findings*

- Data have been obtained for nearly all EEA member countries. Further improvement is needed to increase the comparability of data between the EEA countries.
- An objective of this report was to produce a comparable dataset for the majority of EEA member countries to provide comparable information on hazardous waste generation. This is presently possible only for one large country, five small countries and two regions.
- One of the conclusions of the report 'Hazardous waste generation in selected European countries' was that at national level, the 20 largest generated waste fractions represented approximately 75 % of total quantity of hazardous waste generated. The ETC/W sought information on the 20 largest fractions of hazardous waste in each country and region surveyed to facilitate information collection from member countries. However, only countries already using the hazardous waste list (HWL) were able to give information at the six-digit-level.
- It has proven difficult to relate hazardous waste classified according to national or regional substance oriented classifications to the HWL and the European waste catalogue. As stated above, only countries already registering hazardous waste according to the HWL have given information for this survey at the six-digit level. The reason for this is that it is difficult to obtain the required information for reclassification following the original data-collection exercise. The implementation of the HWL currently taking place in several countries will improve the availability of comparable data.
- In each of the countries and regions examined, a relatively small number of waste types represent a large proportion of the total hazardous waste generation. On average, the 20 largest generated waste types represent between 67 % and 93 % of the total hazardous waste generated with an average of 75 % of hazardous waste being attributable to these top 20 waste types in each country or region.
- National definitions of hazardous waste are not limited to the waste types included in the HWL. When looking at the 20 largest generated waste types in each country, 74 % of the waste types and 81 % of the waste quantities can be related directly to HWL wastes.

- In all, 110 different waste types are included in the full list of top 20 waste types from nine individual countries and regions. This indicates that different countries have different hazardous waste profiles. However, it may also indicate that different countries use different codes for the same waste type. The Commission has recently amended the hazardous waste list with more waste types now classified as hazardous. Prior to the amendment, between 29 % and 100 % of hazardous waste reported by countries and regions examined could be related to HWL descriptions. Following the amendment, the amount is between 39 % and 100 %. The average for the countries has increased from 71 % to 81 %. This means that the comparability of classification for hazardous waste in countries and regions has slightly improved as a result of this amendment.
- Industrial structure is considered an important factor in explaining the difference between hazardous waste types and quantities arising in the different countries and regions. Significant differences exist between the respective manufacturing industries, energy-production sectors and waste-incineration activities. According to the NACE codes, less than 30 % of the hazardous waste production in some countries are related to manufacturing industries, while in other countries more than 80 % of their hazardous waste comes from these sources. More detailed data respectively on the sources of hazardous waste with the type of waste are needed in order to facilitate analysis of different hazardous waste generation paths in EEA member countries.

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36 Hazardous waste generation in EEA member countries

EWC codes	Description	94/904/E C EWC list	C(2000) 1147 EWC list	Austria	Denmark	Ireland	Italy	Norway	Portugal	Spain (the Basque Country)	Spain (Catalonia)
12 03 02	Steam degreasing wastes	H	H	■							
13 01 01	Hydraulic oils, containing pcbs or pcts	H	H			■					
13 01 07	Other hydraulic oils	H	H						■		
13 02 00	Waste engine, gear & lubricating oils	H	H						■		
13 02 02	Non-chlorinated engine, gear and lubricating oils	H	H	■	■	■	■	■	■	■	■
13 02 03	Other engine, gear and lubricating oils	H	H	■	■	■	■	■	■	■	■
13 04 03	Bilge oils from other navigation	H	H			■					
13 05 02	Oil/water separator sludges	H	H	■							
13 05 03	Interceptor sludges	H	H			■					
13 06 01	Oil waste not otherwise specified	H	H					■			
14 01 02	Other halogenated solvents and solvent mixes	H	H								■
14 01 03	Other solvents and solvent mixes	H	H						■		
14 05 03	Other solvents and solvent mixes	H	H								■
15 02 01 01	Absorbents, filter materials, wiping cloths, protective clothing, with noxious contaminants	A	H	■							
16 01 04 01	Discarded vehicles, not de-polluted	A	A	■							
16 06 01	Lead batteries	H	H	■	■	■	■	■	■	■	■
16 07 02	Waste from marine transport tank cleaning, containing oil	H	H						■		
16 08 01	Oil-based drilling liquid	A	A					■			
16 08 02	Oil-contaminated drilling mud	A	A					■			
17 05 01 01	Soil and stones, hazardous contaminated	A	H	■							
18 01 03	Other wastes whose collection and disposal is subject to special requirements in view of the prevention of infection	H	H				■				
19 01 01	Bottom ash and slag	E	H	■							
19 01 03	Fly ash	H	H	■	■	■	■	■	■	■	■
19 01 07	Solid waste from gas treatment	H	H		■						
19 02 01	Metal hydroxide sludges and other sludges from metal insolubilisations treatment	H	H							■	
19 03 01	Wastes stabilised/solidified with hydraulic binders	E	H							■	■
19 08 02	Wastes from desanding	E	E		■						
20 01 21	Fluorescent tubes and other mercury-containing waste	H	H						■		

Note: H = included in the HWL,  
 E = included in the EWC,  
 A = not included in the EWC.







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EWC codes	Description	Previous EWC list	Current EWC list	Austria	Denmark	Ireland	Italy	Norway	Portugal	Spain (the Basque Country)	Spain (Catalonia)
19 03 01	Wastes stabilised/solidified with hydraulic binders	E	H								
19 08 02	Wastes from desanding	E	E								
19 08 03	Grease and oil mixture from oil/wastewater separation	H	H								
20 01 12	Paint, inks, adhesives and resins	H	H								
20 01 16	Detergents	E	H								
20 01 20	Batteries	E	H								
20 01 21	Fluorescent tubes and other mercury-containing waste	H	H								

**Note:** H = included in the HWL,  
 E = included in the EWC,  
 A = not included in the EWC.



## Annex 2: Questionnaire

Hazardous waste generation in ..... classified according to the European waste catalogue at two-digit level, stated in tonnes		A 2.1					
Code	Description	1993	1994	1995	1996	1997	1998
1	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry	•					
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing	•					
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture	•					
04	Wastes from the leather 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 (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	•					
09	Wastes from the photographic industry	•					
10	Inorganic wastes from thermal processes	•					
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy	•					
12	Wastes from shaping and surface treatment of metals and plastics	•					
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)	•					
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)	•					
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	•					
16	Waste not otherwise specified in the catalogue	•					
17	Construction and demolition waste (including road construction)	•					
18	Wastes from human or animal healthcare and/or related research	•					
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry	•					
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions	•					
	Total amount related to the HWL/EWC/add. EWC						
	Total amount not possible to relate to the HWL/EWC/add. EWC						
	Total hazardous waste generation	•					

**A 2.2** The 20 largest hazardous waste types generated in ..... classified according to the European waste catalogue at six-digit level <sup>(1)</sup>, stated in tonnes. (Information on more than 20 largest are welcome

EWCode	Description	H: HWL. E:EWCode A:add. EWCode	1993	1994	1995	1996	1997	1998

<sup>1</sup> If it is not possible to clearly identify a six-digit code, a four-digit code may alternatively be used (see the main text above). Due to the fact that a hazardous waste list code requires a six-digit code, however, it is in certain cases, the best that can be achieved.

**A 2.3** The relationship between the national hazardous waste classification codes used in ..... and the European waste catalogue and hazardous waste list

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?      Yes                               No

If yes, please enclose the conversion listing.

Hazardous waste generation in ..... classified according to economic activity (NACE code), stated in tonnes		A 2.4					
NACE Code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying						
DA	Manufacture of food, beverages and tobacco						
DB	Manufacture of textiles, wearing, apparel						
DC	Manufacture of leather						
DD	Manufacture of wood products						
DE	Manufacture of printing and publishing						
DF	Manufacture of refined petroleum products						
DG	Manufacture of chemicals						
DH	Manufacture of rubber and plastics products						
DI	Manufacture of other non-metallic mineral products						
DJ	Manufacturing and processing of basic metals						
DK	Manufacture of machinery and equipment						
DL	Manufacture of electrical and optical equipment						
DM	Manufacture of transport equipment						
DN	Manufacture of furniture, manufacturing n.e.c. Manufacturing which can not be related to a specific D-category						
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category						
E	Electricity, gas and water supply						
F	Construction						
G-50.2	Maintenance and repair of motor vehicles						
<b>G total</b>	Wholesale and retail trade incl. G-50.2						
H	Hotel, restaurants						
I-61	Shipping						
<b>I total</b>	Transport, storage and communication including I-61						
K-74.81	Photographic activities						
<b>J+K total</b>	Financial intermediation, business activities incl. K-74.81						
L	Public and personal services						
M	Education						
N	Human health activities						
O	Refuse disposal						
X	Activity not stated						
<b>Total</b>							

## A 2.5

## General questions on hazardous waste data in .....

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
Treatment/disposal facilities					
Reporting from municipalities					
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list					
The national hazardous waste classification					

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste
The hazardous waste list or the national Implementation of the hazardous waste list				
The national hazardous waste classification				

## **Annex 3: Data received from individual countries/regions**

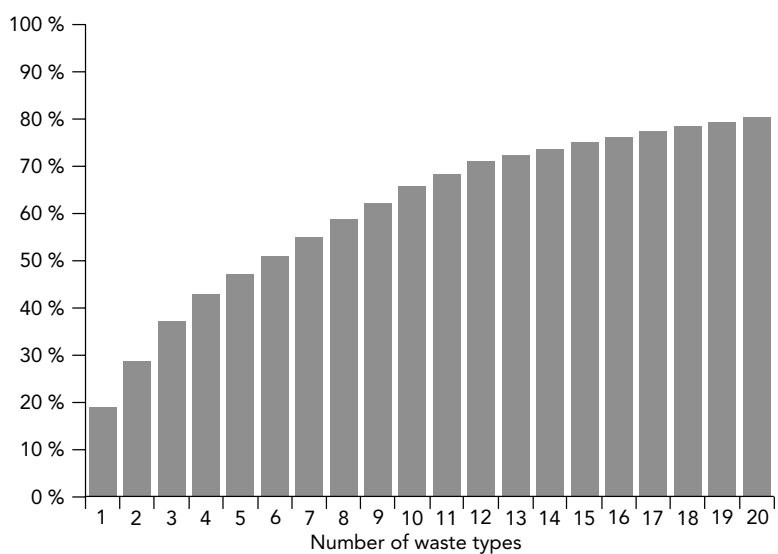
# Austria

I		Hazardous waste generation in Austria classified according to the European waste catalogue at two-digit level, stated in tonnes					
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry	1 419	1 836	4 044	6 813		
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing	18 367	20 144	20 796	21 671		
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture						
04	Wastes from the leather and textile industries	237	209	262	352		
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	38 744	40 117	39 328	38 177		
06	Wastes from inorganic chemical processes	1 882	2 451	4 897	11 437		
07	Wastes from organic chemical processes	1 296	992	1 079	1 097		
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	15 289	14 558	15 170	14 972		
09	Wastes from the photographic industry	3 446	4 107	4 629	4 903		
10	Inorganic wastes from thermal processes	29 296	22 310	42 431	63 707		
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy	3 528	3 757	4 756	4 924		
12	Wastes from shaping and surface treatment of metals and plastics	29 681	35 764	40 209	40 768		
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)	29 095	29 465	29 815	32 573		
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)	30	48	102	43		
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	17 924	22 104	26 346	31 984		
16	Waste not otherwise specified in the catalogue	41 741	66 736	66 468	66 985		
17	Construction and demolition waste (including road construction)	52 910	38 057	68 037	66 170		
18	Wastes from human or animal healthcare and/or related research	3 315	3 327	3 369	3 388		
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry	154 224	156 907	151 398	140 342		
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions	22 725	20 439	22 804	26 099		
Total amount related to the HWL/EWC/add. EWC		465 147	483 328	545 940	576 405		
Total amount not possible to relate to the HWL/EWC/add. EWC		34 308	29 864	30 938	29 408		
<b>Total hazardous waste generation</b>		<b>499 455</b>	<b>513 192</b>	<b>576 878</b>	<b>605 813</b>		

The 20 largest hazardous waste types generated in Austria classified according to the European waste catalogue at six-digit level, stated in tonnes							II A	
EWC 6-digit or National code	Description	H: HWL E: EWC A: sdd. EWC	1993	1994	1995	1996	1997	1998
19 01 01	Bottom ash and slag	E	132 677	132 997	126 027	112 784		
17 05 01 01	Soil and stones, hazardous contaminated	A	52 850	37 759	66 769	60 344		
16 01 04 01	Discarded vehicles, not de-polluted	A	30 348	50 925	51 443	50 372		
05 08 99 01	Alkalines containing oil or tars	A	37 399	38 205	37 631	36 342		
19 01 03	Fly ash	H	19 706	22 888	22 905	25 557		
15 02 01 01	Absorbents, filter materials, wiping cloths, protective clothing, with noxious contaminants	A	16 514	17 349	20 907	24 050		
13 05 02	Oil/water separator sludges	H	23 324	24 015	22 686	23 493		
10 03 08	Salt slags from secondary smelting	H	21 960	15 609	26 000	22 703		
10 03 09	Black drosses from secondary smelting	H	562	128	47	20 977		
12 03 02	Steam degreasing wastes	H	17 355	18 516	20 320	20 709		
12 01 09	Waste machining emulsions free of halogens	H	10 266	13 807	15 649	15 871		
20 01 20	Batteries	E	10 986	11 618	12 971	15 009		
10 02 06 01	Spent linings and refractories with noxious contaminants	A			8 868	8 855		
16 02 02 01	Other discarded electronic equipment with relevant content on dangerous components	A	4 140	5 530	7 236	8 641		
15 01 99 01	Packaging material with noxious residues and/or contaminants	A	1 410	4 755	5 439	7 934		
01 05 01	Oil-containing drilling muds and wastes	E	1 419	1 836	4 044	6 813		
13 05 03	Interceptor sludges	H	3 352	3 354	4 358	6 616		
08 01 02	Waste paints and varnish free of halogenated solvents	H	5 972	5 912	6 343	6 406		
17 01 99 01	Concrete, bricks, tiles, ceramics and other building materials contaminated with noxious/hazardous substances	A	58	299	1 268	5 813		
08 01 08 01	Aqueous sludges containing paint and varnish, containing biozides and/or heavy metals and/or metals	A	6 422	5 831	5 541	5 296		

II B

Cumulative percentage of hazardous waste quantities according to number of waste types included (1996)



III

The relationship between the national hazardous waste classification codes used in Austria and the European waste catalogue and hazardous waste list

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?      Yes       No

If yes, please enclose the conversion listing.



		Hazardous waste generation in Austria classified according to economic activity (NACE code), stated in tonnes					IV	
NACE code	Economic area	1993	1994	1995	1996	1997	1998	
A	Agriculture				14 168			
B	Fishing				1			
C	Quarrying				20 469			
DA	Manufacture of food, beverages and tobacco				5 625			
DB	Manufacture of textiles, wearing, apparel				6 927			
DC	Manufacture of leather				232			
DD	Manufacture of wood products				1 849			
DE	Manufacture of printing and publishing				4 027			
DF	Manufacture of refined petroleum products				3 314			
DG	Manufacture of chemicals				5 757			
DH	Manufacture of rubber and plastics products				338			
DI	Manufacture of other non-metallic mineral products				1 746			
DJ	Manufacturing and processing of basic metals				17 769			
DK	Manufacture of machinery and equipment				5 506			
DL	Manufacture of electrical and optical equipment				7 450			
DM	Manufacture of transport equipment				9 285			
DN	Manufacture of furniture, manufacturing n.e.c.				58 887			
	Manufacturing which can not be related to a specific D-category							
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category				128 712			
E	Electricity, gas and water supply				125 522			
F	Construction				8 402			
G-50.2	Maintenance and repair of motor vehicles				25 356			
<b>G total</b>	Wholesale and retail trade incl. G-50.2				45 105			
H	Hotel, restaurants				3 374			
I-61	Shipping				5			
<b>I total</b>	Transport, storage and communication including I-61				22 695			
K-74.81	Photographic activities							
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81				12 722			
L	Public and personal services				1 897			
M	Education				556			
N	Human health activities				6 113			
O	Refuse disposal				115 323			
X	Activity not stated				100 760			
	<b>Total</b>				605 819			

V

## General questions on hazardous waste data in Austria

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
Treatment/disposal facilities					
Reporting from municipalities					
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list					
The national hazardous waste classification					

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste
The hazardous waste list or the national Implementation of the hazardous waste list				
The national hazardous waste classification				

# Belgium — Brussels

Hazardous waste generation in Brussels classified according to the European waste catalogue at two-digit level, stated in tonnes							I
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry						
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing						
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture						
04	Wastes from the leather 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 (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks						
09	Wastes from the photographic industry						
10	Inorganic wastes from thermal processes						
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy						
12	Wastes from shaping and surface treatment of metals and plastics						
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)						
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)						
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified						
16	Waste not otherwise specified in the catalogue						
17	Construction and demolition waste (including road construction)						
18	Wastes from human or animal healthcare and/or related research			14 000	14 000	14 000	
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry						
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions						
Total amount related to the HWL/EWC/add. EWC							
Total amount not possible to relate to the HWL/EWC/add. EWC							
Total hazardous waste generation							

**II** The 20 largest hazardous waste types generated in Brussels classified according to the European waste catalogue at six-digit level <sup>(1)</sup>, stated in tonnes. (Information on more than 20 largest are welcome)

EWC 6-digit or National code	Description	H: HWL. E:EWC A:add. EWC	1993	1994	1995	1996	1997	1998
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No information

**III** The relationship between the national hazardous waste classification codes used in Brussels and the European waste catalogue and hazardous waste list

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?      Yes       No

If yes, please enclose the conversion listing.

Hazardous waste generation in Brussels classified according to economic activity (NACE code), stated in tonnes		IV					
NACE code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying						
DA	Manufacture of food, beverages and tobacco						
DB	Manufacture of textiles, wearing, apparel						
DC	Manufacture of leather						
DD	Manufacture of wood products						
DE	Manufacture of printing and publishing						
DF	Manufacture of refined petroleum products						
DG	Manufacture of chemicals						
DH	Manufacture of rubber and plastics products						
DI	Manufacture of other non-metallic mineral products						
DJ	Manufacturing and processing of basic metals						
DK	Manufacture of machinery and equipment						
DL	Manufacture of electrical and optical equipment						
DM	Manufacture of transport equipment						
DN	Manufacture of furniture, manufacturing n.e.c.						
	Manufacturing which can not be related to a specific D-category						
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category						
E	Electricity, gas and water supply						
F	Construction						
G-50.2	Maintenance and repair of motor vehicles						
<b>G total</b>	Wholesale and retail trade incl. G-50.2						
H	Hotel, restaurants						
I-61	Shipping						
<b>I total</b>	Transport, storage and communication including I-61						
K-74.81	Photographic activities						
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81						
L	Public and personal services						
M	Education						
N	Human health activities		14 000				
O	Refuse disposal						
X	Activity not stated						
	<b>Total</b>						

V

## General questions on hazardous waste data in Brussels

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
			X	X	X
Treatment/disposal facilities					
Reporting from					
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list					
The national hazardous waste classification					
		X	X	X	X

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste
The hazardous waste list or the national Implementation of the hazardous waste list				
The national hazardous waste classification				
		X	X	X

# Belgium — Flanders

Hazardous waste generation in Flanders classified according to the European waste catalogue at two-digit level, stated in tonnes								I
EWC 2-digit	Description	1992	1993	1994	1995	1996	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry							
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing							
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture							
04	Wastes from the leather 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 (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks							
09	Wastes from the photographic industry							
10	Inorganic wastes from thermal processes							
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy							
12	Wastes from shaping and surface treatment of metals and plastics							
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)							
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)							
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified							
16	Waste not otherwise specified in the catalogue							
17	Construction and demolition waste (including road construction)							
18	Wastes from human or animal healthcare and/or related research							
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry							
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions							
Total amount related to the HWL/EWC/add. EWC								
Total amount not possible to relate to the HWL/EWC/add. EWC								
<b>Total hazardous waste generation</b>		1 342 480	1 514 381	1 104 384	1 394 372	3 167 750	?	222 032
Standard error		346 009	489 753	369 605	430 581	1 000 096	?	595 286

**II** The 20 largest hazardous waste types generated in Flanders classified according to the European waste catalogue at six-digit level, stated in tonnes

EWC 6-digit or National code	Description	H: HWL. E:EWC A:add. EWC	1993	1994	1995	1996	1997	1998
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No information

**III** The relationship between the national hazardous waste classification codes used in Flanders and the European waste catalogue and hazardous waste list

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?      Yes       No

If yes, please enclose the conversion listing.



Hazardous waste generation in Flanders according to economic activity (NACE code), stated in tonnes							IV	
NACE code	Economic area	1992	1993	1994	1995	1996	1997	1998
A	Agriculture							
B	Fishing							
C	Quarrying	—	956	1 406	—	—	—	—
DA	Manufacture of food, beverages and tobacco	3 177	1 040	7 599	2 379	38 733	8 589	20 722
DB	Manufacture of textiles, wearing, apparel	1 277	1 188	15 121	6 344	—	5 201	—
DC	Manufacture of leather	4 726	4 560	3 108	12 048	54 128	11 185	2 824
DD	Manufacture of wood products	5 994	7 573	7 083	6 279	8 078	27 119	34 470
DE	Manufacture of printing and publishing	—	—	—	11 322	—	2 797	—
DF	Manufacture of refined petroleum products	141 465	130 526	111 002	115 090	156 642	—	198 110
DG	Manufacture of chemicals	4 422	3 962	6 511	6 842	13 355	7 904	—
DH	Manufacture of rubber and plastics products	1 739	1 832	1 717	2 979	2 576	15 532	—
DI	Manufacture of other non-metallic mineral products	6 928	6 646	—	—	—	—	15 515
DJ	Manufacturing and processing of basic metals	—	—	—	—	—	—	38 225
DK	Manufacture of machinery and equipment	49 722	47 453	59 268	—	54 410	115 470	39 484
DL	Manufacture of electrical and optical equipment							
DM	Manufacture of transport equipment							
DN	Manufacture of furniture, manufacturing n.e.c.							
	Manufacturing which can not be related to a specific D-category	2 993 394		2 919 720		2 056 118		
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category	—	—	—	3 156 677	3 247 642	—	2 405 468
E	Electricity, gas and water supply							
F	Construction	20 894	16 002	13 970	20 087	606 350	2 335 579	206 241
G-50.2	Maintenance and repair of motor vehicles							
<b>G total</b>	Wholesale and retail trade incl. G-50.2							
H	Hotel, restaurants							
I-61	Shipping							
<b>I total</b>	Transport, storage and communication including I-61							
K-74.81	Photographic activities							
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81							
L	Public and personal services							
M	Education							
N	Human health activities							
O	Refuse disposal	—	—	—	—	2 229 666	1 896 524	1 713 902
X	Activity not stated	3 134	3 268	19 229	13 560	25 734	53	93 118
	<b>Total</b>					6 109 392		4 418 729

V

## General questions on hazardous waste data in Flanders

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers			X	X	
Collectors					X
Treatment/disposal facilities			X	X	X
Reporting from					X
Estimates			X	X	

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste					
The national hazardous waste		X	X	X	X

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste
The hazardous waste list or the national Implementation of the hazardous waste list			X	
The national hazardous waste classification				

# Belgium — Wallonia

Hazardous waste generation in Wallonia classified according to the European waste catalogue at two-digit level, stated in tonnes							I
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry						78
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing						91 582
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture						1 049
04	Wastes from the leather and textile industries						55
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal						3 122
06	Wastes from inorganic chemical processes						12 648
07	Wastes from organic chemical processes						29 051
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks						8 059
09	Wastes from the photographic industry						1 880
10	Inorganic wastes from thermal processes						90 254
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy						56 591
12	Wastes from shaping and surface treatment of metals and plastics						12 092
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)						32 796
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)						8 473
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified						7 092
16	Waste not otherwise specified in the catalogue						57 401
17	Construction and demolition waste (including road construction)						18 395
18	Wastes from human or animal healthcare and/or related research						3 865
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry						40 334
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions						473
	Total amount related to the HWL/EWC/add. EWC						475 290
	Total amount not possible to relate to the HWL/EWC/add. EWC						0
	<b>Total hazardous waste generation</b>		419 081	427 424	469 518	475 290	

II		The 20 largest hazardous waste types generated in Wallonia classified according to the European waste catalogue at six-digit level, stated in tonnes							
EWC 6-digit or National code	Description	H: HWL E: EWC A: sdd. EWC	1993	1994	1995	1996	1997	1998	
0506xx	Waste from the pyrolytic treatment of coal	H						206	
1001xx	Wastes from power station and other combustion plants	H						361	
1002xx	Wastes from the iron and steel industry	H						86 458	
110105, 110106	Acids not otherwise specified	H						34 925	
110107	Alkalis not otherwise specified	H						4 177	
150199	Contaminated packaging	A						5 780	
190103	Fly ash	H						15 555	
150299	Contaminated absorbents	H						1 312	
170599	Contaminated soil	H						18 395	
160601	Lead batteries	H						9 943	
200121	Fluorescent tubes and other mercury-containing waste	A						183	
200122	Aerosols	H						271	
2096xx	Hazardous waste from households	A						20	
020102, 020196- 020198, 020202	Animal tissue waste	E + A						90 609	
160198, 160298	Light fraction from shredding							47 035	
120106 — 120110, 13xxxx (without PCB), 200199	Waste machining and hydraulic oils							32 166	
07xxxx, except before mentioned	Other wastes from organic chemical processes							22 328	

III	The relationship between the national hazardous waste classification codes used in Wallonia and the European waste catalogue and hazardous waste list
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Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list? Yes  No

If yes, please enclose the conversion listing.

Hazardous waste generation in Wallonia classified according to economic activity (NACE code), stated in tonnes		IV					
NACE Code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying						
DA	Manufacture of food, beverages and tobacco						
DB	Manufacture of textiles, wearing, apparel						
DC	Manufacture of leather						
DD	Manufacture of wood products						
DE	Manufacture of printing and publishing						
DF	Manufacture of refined petroleum products						
DG	Manufacture of chemicals						
DH	Manufacture of rubber and plastics products						
DI	Manufacture of other non-metallic mineral products						
DJ	Manufacturing and processing of basic metals						
DK	Manufacture of machinery and equipment						
DL	Manufacture of electrical and optical equipment						
DM	Manufacture of transport equipment						
DN	Manufacture of furniture, manufacturing n.e.c. Manufacturing which can not be related to a specific D-category						
<b>D</b>	<b>Manufacturing total incl. amounts which can not be related to a specific D-category</b>						
<b>total</b>							
E	Electricity, gas and water supply						
F	Construction						
G-50.2	Maintenance and repair of motor vehicles						
<b>G</b>	<b>Wholesale and retail trade incl. G-50.2</b>						
<b>total</b>							
H	Hotel, restaurants						
I-61	Shipping						
<b>I</b>	<b>Transport, storage and communication including I-61</b>						
<b>total</b>							
K-74.81	Photographic activities						
<b>J+K</b>	<b>Financial intermediation, business activities incl. K-74.81</b>						
<b>total</b>							
L	Public and personal services						
M	Education						
N	Human health activities						
O	Refuse disposal						
X	Activity not stated						
<b>Total</b>							

No information

V

## General questions on hazardous waste data in Wallonia

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors	X				
Treatment/disposal facilities	X				
Reporting from municipalities					
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list		X	X	X	X
The national hazardous waste classification					

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste
The hazardous waste list or the national Implementation of the hazardous waste list			X	X
The national hazardous waste classification				

# Denmark

Hazardous waste generation in Denmark classified according to the European waste catalogue at two-digit level, stated in tonnes							I		
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998		
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry						405		
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing			95	100		345		
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture			181	235		329		
04	Wastes from the leather and textile industries			266	148		1 149		
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal			26	32		9 352		
06	Wastes from inorganic chemical processes			2 231	1 575		4 876		
07	Wastes from organic chemical processes			9 488	8 379		11 094		
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks			12 549	11 002		15 167		
09	Wastes from the photographic industry			7 073	5 259		9 707		
10	Inorganic wastes from thermal processes			32 218	32 621		33 665		
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy			8 159	7 480		7 491		
12	Wastes from shaping and surface treatment of metals and plastics			733	562		1 562		
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)			35 578	35 003		34 690		
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)			1 283	1 081		3 543		
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified			276	168		529		
16	Waste not otherwise specified in the catalogue			13 583	15 551		11 408		
17	Construction and demolition waste (including road construction)			7 350	7 902		4 521		
18	Wastes from human or animal healthcare and/or related research			10 695	8 787		10 435		
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry			63 380	71 901		90 637		
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions			3 221	3 073		12 106		
Total amount related to the HWL/EWC/add. EWC				208 383	210 859		263 012		
Total amount not possible to relate to the HWL/EWC/add. EWC				38 851	53 128		17 584		
<b>Total hazardous waste generation</b>				<b>106000</b>	<b>194000</b>	<b>247234</b>	<b>263987</b>	<b>249493</b>	<b>280596</b>

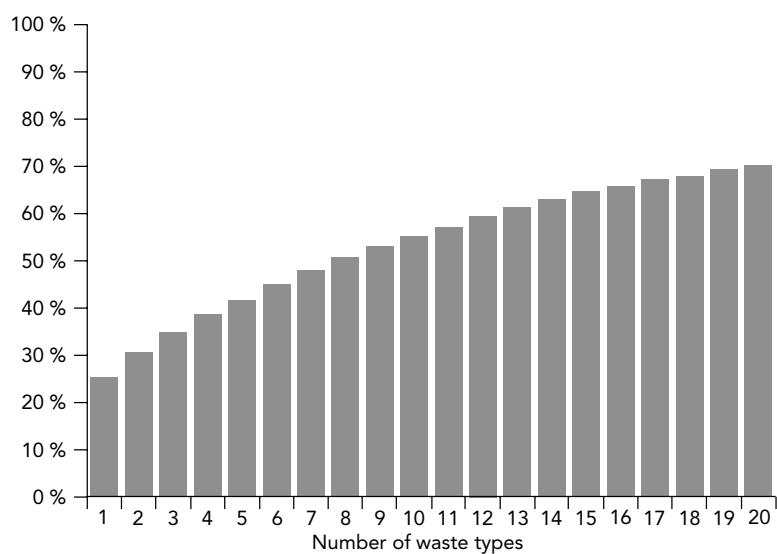
II A		The 20 largest hazardous waste types generated in Denmark classified according to the European waste catalogue at six-digit level, stated in tonnes						
EWC 6-digit or National code	Description	H: HWL E: EWC A: sdd. EWC	1993	1994	1995	1996	1997	1998
19 01 07	Wastes from incineration or pyrolysis of municipal and similar commercial, industrial and institutional wastes	H			63 300	71 900		69 800
13 02 02	Non-chlorinated engine, gear and lubricating oils	H			35 011	34 120		16 099
10 01 09	Sulphuric acid	H			22 000	22 000		6 108
16 06 01	Lead batteries	H			12 282	14 200		8 445
10 02 03	Solid wastes from flue gas treatment	E			9 991	10 487		11 856
17 06 01	Insulation materials containing asbestos	H			7 311	7 811		<sup>1</sup>
18 01 03	Other wastes whose collection and disposal is subject to special requirements in view of the prevention of infection	H			9 480	7 780		6 025
08 01 02	Waste paints, varnishes and wood preservatives containing organic solvents	H			5 667	4 950		6 723
09 01 01	Water-based developer and activator solutions	H			6 612	4 925		5 357
08 01 08	Aqueous sludges containing paint, varnish or wood preservatives	E			4 624	3 822		<sup>1</sup>
11 01 05	Acidic pickling solutions	H			3 551	3 422		<sup>1</sup>
11 01 98	Sludges from galvanising processes	A			3 595	3 222		<sup>1</sup>
20 01 12	Paint, inks, adhesives and resins	H			1 842	2 029		5 731
07 05 08	Other still bottoms and reaction residues	H			2 353	1 957		<sup>1</sup>
07 05 04	Other organic solvents, washing liquids and mother liquors	H			1 382	1 887		<sup>1</sup>
16 05 01	Industrial gases in high pressure cylinders, LPG containers and industrial aerosol containers (including halons)	E			972	1 052		<sup>1</sup>
08 01 03	Waste from water-based paints, varnishes and wood preservatives	E			592	794		3 190
07 01 01	Aqueous washing liquids and mother liquors	H			820	749		<sup>1</sup>
13 05 01	Oil/water separator solids	H			391	728		<sup>1</sup>
08 03 02	Waste ink containing organic solvents	H			643	615		<sup>1</sup>
10 01 08	Other sludges from gas treatment	H						11 073
19 01 03	Fly ash	E						9 065
05 01 06	Sludges from plant, equipment and maintenance operations	H						8 373
19 08 02	Wastes from desanding	H						8 229
13 05 05	Other emulsions	H						5 605
13 06 01	Oil waste not otherwise specified	H						4 823
18 02 02	Other wastes whose collection and disposal is subject to special requirements in view of the prevention of infection	E						3 423
09 01 04	Fixer solutions	E						3 343
17 01 05	Asbestos-based construction materials	H						3 225
13 04 02	Bilge oils from jetty sewers	H						2 787
					192 419	198 450		199 281

<sup>1</sup> In 1998, these waste types were not among the 20 largest.



Cumulative percentage of hazardous waste quantities according to number of waste types included (1998)

II B



The relationship between the national hazardous waste classification codes used in Denmark and the European waste catalogue and hazardous waste list

III

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

IV		Hazardous waste generation in Denmark classified according to economic activity (NACE code), stated in tonnes					
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing				155		
C	Quarrying						
DA	Manufacture of food, beverages and tobacco				285		
DB	Manufacture of textiles, wearing, apparel				105		
DC	Manufacture of leather				193		
DD	Manufacture of wood products				429		
DE	Manufacture of printing and publishing				1 449		
DF	Manufacture of refined petroleum products				311		
DG	Manufacture of chemicals				17 927		
DH	Manufacture of rubber and plastics products				858		
DI	Manufacture of other non-metallic mineral products				494		
DJ	Manufacturing and processing of basic metals				17 355		
DK	Manufacture of machinery and equipment				3 933		
DL	Manufacture of electrical and optical equipment				1 164		
DM	Manufacture of transport equipment				1 732		
DN	Manufacture of furniture, manufacturing n.e.c.				1 299		
	Manufacturing which can not be related to a specific D-category						
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category				59 690		
E	Electricity, gas and water supply				22 589		
F	Construction				8 383		
G-50.2	Maintenance and repair of motor vehicles				34 233		
<b>G total</b>	Wholesale and retail trade incl. G-50.2				36 000		
H	Hotel, restaurants				55		
I-61	Shipping						
<b>I total</b>	Transport, storage and communication including I-61				1 545		
K-74.81	Photographic activities						
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81				5 989		
L	Public and personal services				1 089		
M	Education				318		
N	Human health activities				8 864		
O	Refuse disposal				82 387		
X	Activity not stated				36 923		
	<b>Total</b>				263 987		

## General questions on hazardous waste data in Denmark

V

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
Treatment/disposal facilities		X	X	X	X
Reporting from					
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste		X	X	X	X
The national hazardous waste					

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste
The hazardous waste list or the national Implementation of the hazardous waste list		X	X	X
The national hazardous waste classification				

# Finland

		Hazardous waste generation in Finland classified according to the European waste catalogue at two-digit level, stated in tonnes					
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry					1.5	
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing					1 535	
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture					381	
04	Wastes from the leather and textile industries					82	
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal					6 482	
06	Wastes from inorganic chemical processes					121 621	
07	Wastes from organic chemical processes					16 460	
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks					7 681	
09	Wastes from the photographic industry					4 681	
10	Inorganic wastes from thermal processes					27 394	
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy					124 699	
12	Wastes from shaping and surface treatment of metals and plastics					16 733	
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)					65 672	
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)					10 564	
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified					3 631	
16	Waste not otherwise specified in the catalogue					27 071	
17	Construction and demolition waste (including road construction)					9 182	
18	Wastes from human or animal healthcare and/or related research					287	
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry					28 318	
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions					8 509	
Total amount related to the HWL/EWC/add. EWC						480 985	
Total amount not possible to relate to the HWL/EWC/add. EWC							
<b>Total hazardous waste generation</b>						<b>480 985</b>	

The 20 largest hazardous waste types generated in Finland classified according to the European waste catalogue at six-digit level, stated in tonnes II

EWC 6-digit or National code	Description	H: HWL. E:EWC A:add. EWC	1993	1994	1995	1996	1997	1998

No information

The relationship between the national hazardous waste classification codes used in Finland and the European waste catalogue and hazardous waste list III

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?      Yes       No

If yes, please enclose the conversion listing.

IV		Hazardous waste generation in Finland classified according to economic activity (NACE code), stated in tonnes					
NACE code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying					733	
DA	Manufacture of food, beverages and tobacco					3 738	
DB	Manufacture of textiles, wearing, apparel					260	
DC	Manufacture of leather					28	
DD	Manufacture of wood products					1 988	
DE	Manufacture of printing and publishing					43 975	
DF	Manufacture of refined petroleum products					147 352 (!)	
DG	Manufacture of chemicals					(!)	
DH	Manufacture of rubber and plastics products					919	
DI	Manufacture of other non-metallic mineral products					703	
DJ	Manufacturing and processing of basic metals					169 983	
DK	Manufacture of machinery and equipment					6 830	
DL	Manufacture of electrical and optical equipment					3 261	
DM	Manufacture of transport equipment					4 340	
DN	Manufacture of furniture, manufacturing n.e.c.					976	
	Manufacturing which can not be related to a specific D-category						
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category					384 353	
E	Electricity, gas and water supply					3 700	
F	Construction						
G-50.2	Maintenance and repair of motor vehicles						
<b>G total</b>	Wholesale and retail trade incl. G-50.2						
H	Hotel, restaurants						
I-61	Shipping						
<b>I total</b>	Transport, storage and communication including I-61						
K-74.81	Photographic activities						
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81						
L	Public and personal services						
M	Education						
N	Human health activities						
O	Refuse disposal					72 833	
X	Activity not stated					19 366	
	<b>Total</b>					<b>480 985</b>	

## General questions on hazardous waste data in Finland

V

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers		X	X	X	
Collectors					
Treatment/disposal facilities					X
Reporting from municipalities					
Estimates		X	X	X	X

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list		X	X	X	X
The national hazardous waste classification					

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste
The hazardous waste list or the national Implementation of the hazardous waste list		X	X	X
The national hazardous waste classification				

# North Rhine-Westphalia

		Hazardous waste generation in North Rhine-Westphalia classified according to the European waste catalogue at two-digit level, stated in tonnes				
EWC 2-digit	Description	1993	1994	1995	1996	1997 1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry					
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing					
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture					
04	Wastes from the leather and textile industries					
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal					
06	Wastes from inorganic chemical processes	44 073				
07	Wastes from organic chemical processes					
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks					
09	Wastes from the photographic industry					
10	Inorganic wastes from thermal processes	154 810				
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy	243 064				
12	Wastes from shaping and surface treatment of metals and plastics	107 259				
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)	75 356				
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)					
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	155 592				
16	Waste not otherwise specified in the catalogue					
17	Construction and demolition waste (including road construction)	317 729				
18	Wastes from human or animal healthcare and/or related research					
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry	499 788				
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions					
	Total amount related to the HWL/EWC/add. EWC	1 597 671				
	Total amount not possible to relate to the HWL/EWC/add. EWC	2 478 729				
	<b>Total hazardous waste generation</b>	<b>4 076 400</b>				

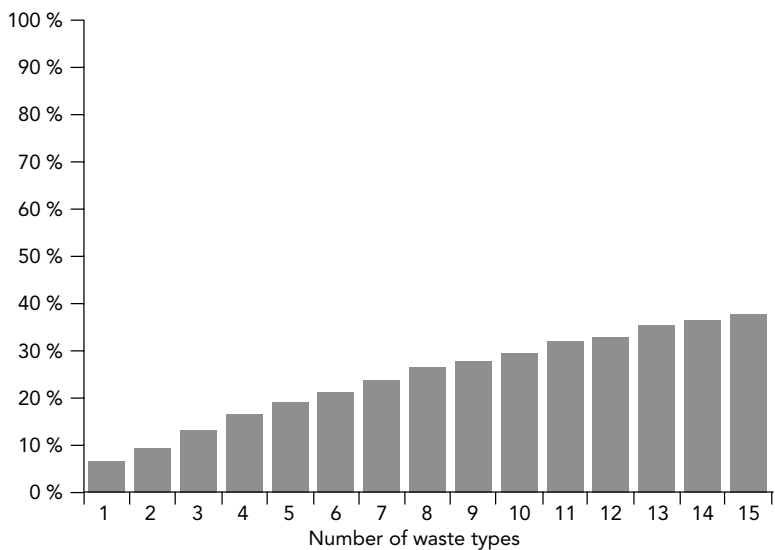


The 20 largest hazardous waste types generated in North Rhine-Westphalia classified according to the European waste catalogue at six-digit level, stated in tonnes

II A

EWC 6-digit or national code	Description	H: HWL E: EWC A: add. EWC	1993	1994	1995	1996	1997	1998
19 01 06	Aqueous liquid waste from gas treatment and other aqueous liquid waste		292 883					
10 03 04	Primary smelting slags/white drosses		154 810					
17 01 99 D1	Bricks, concrete, tiles and gypsum-based or asbestos-based materials with noxious contaminants		147 973					
11 01 04	Cyanide-free wastes containing chromium		130 573					
17 02 99 D1	Wood, glass and plastic with noxious contaminants		112 524					
11 01 05	Acidic pickling solutions		112 491					
12 01 09	Waste machining emulsions free of halogens		107 259					
19 02 01	Metal hydroxide sludges and other sludges from metal insolubilisation treatment		102 616					
15 02 99 D1	Absorbents, filter materials, wiping cloths and protective clothing with noxious contaminants		86 846					
13 02 02	Non-chlorinated engine, gear, lubricating oils		75 356					
15 01 99 D1	Packaging material with noxious contaminants		68 746					
19 01 03	Fly ash		61 046					
17 05 99 D1	Excavated material, dredged spoil and wastes from soil treatment plants with noxious contaminants		57 232					
06 01 02	Hydrochloric acid		44 073					
19 01 99 D2	Slags from special waste treatment		43 243					

**II B** Cumulative percentage of hazardous waste quantities according to number of waste types included (1993)



**III** The relationship between the national hazardous waste classification codes used in North Rhine-Westphalia and the European waste catalogue and hazardous waste list

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list? Yes  No

If yes, please enclose the conversion listing.

Hazardous waste generation in North Rhine-Westphalia classified according to economic activity (NACE code), stated in tonnes		IV					
NACE code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying	105 000					
DA	Manufacture of food, beverages and tobacco	144 000					
DB	Manufacture of textiles, wearing, apparel						
DC	Manufacture of leather						
DD	Manufacture of wood products						
DE	Manufacture of printing and publishing						
DF	Manufacture of refined petroleum products	108 000					
DG	Manufacture of chemicals	2 291 000					
DH	Manufacture of rubber and plastics products						
DI	Manufacture of other non-metallic mineral products						
DJ	Manufacturing and processing of basic metals	908 000					
DK	Manufacture of machinery and equipment	455 000					
DL	Manufacture of electrical and optical equipment						
DM	Manufacture of transport equipment	552 000					
DN	Manufacture of furniture, manufacturing n.e.c.						
	Manufacturing which can not be related to a specific D-category						
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category	4 458 000					
E	Electricity, gas and water supply	1 257 000					
F	Construction	490 000					
G-50.2	Maintenance and repair of motor vehicles						
<b>G total</b>	Wholesale and retail trade incl. G-50.2						
H	Hotel, restaurants						
I-61	Shipping						
<b>I total</b>	Transport, storage and communication including I-61						
K-74.81	Photographic activities						
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81						
L	Public and personal services						
M	Education						
N	Human health activities	32 000					
O	Refuse disposal	11 000					
X	Activity not stated	2 739 000					
	<b>Total</b>	9 092 000					

V

## General questions on hazardous waste data in North Rhine-Westphalia

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
Treatment/disposal facilities					
Reporting from competent authorities?		X	X	X	X
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste	Municipalities
The hazardous waste list or the national implementation of the hazardous waste list		X	X	X	X
The national hazardous waste classification					

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste
The hazardous waste list or the national implementation of the hazardous waste list		X	X	X
The national hazardous waste classification				



II		The 20 largest hazardous waste types generated in Greece classified according to the European waste catalogue at six-digit level, stated in tonnes						
EWC 6-digit or national code	Description	H: HWL E: EWC A: add. EWC	1993	1994	1995	1996	1997	1998
190200/060403	Sludge from wastewater treatment							85 000
100202	Unprocessed slag							85 000
190201	Metal hydroxide sludges and other sludges from metal							33 458
130502/050103	Oily sludge (wastewater treatment, oil/wastewater separation, storage tank sludge)							24 000
100203	Solid wastes from gas treatment							13 700
050103	Tank Bottom sludges							10 050
100307	Spent pot linings							10 000
070202/080406	Sludge							8 800
050802	Acid tars							4 800
040106/190201	Sludge from wastewater treatment							3 148
190200	Wastes from specific physico/chemical treatments of industrial wastes (e.g. dechromatation, decyanidation, neutralisation)							3 000
070202/070208	Sludge							2 000
160702	Waste from marine transport tank cleaning, containing oil							1 000
120201	Spent blasting grit							1 000
160206	Wastes from the asbestos processing industry							900
010501/130502	Sludge from oil/wastewater separation							500
070499	Wastes not otherwise specified							500
	Total							286 856

III	The relationship between the national hazardous waste classification codes used in Greece and the European waste catalogue and hazardous waste list
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Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.



V

## General questions on hazardous waste data in Greece

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers			X		
Collectors					
Treatment/disposal facilities			X		
Reporting from municipalities			X		X
Estimates			X	X	X

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list					
The national hazardous waste classification					

No information

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste
The hazardous waste list or the national Implementation of the hazardous waste list				
The national hazardous waste classification				

No information



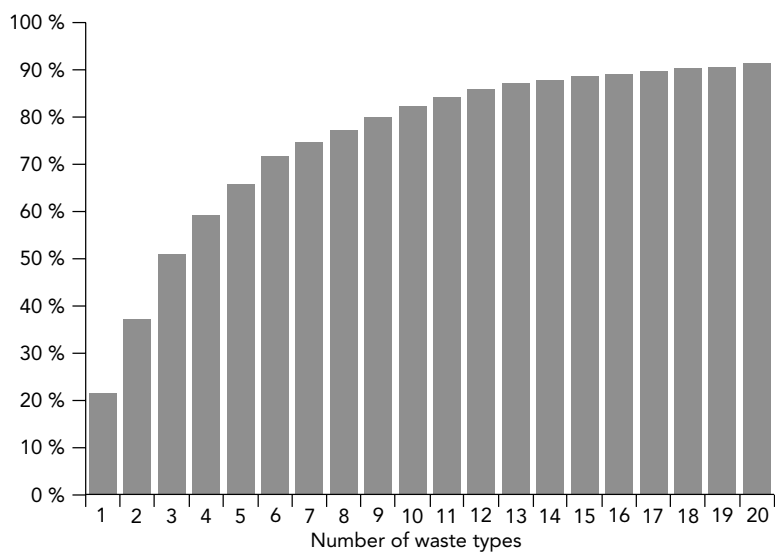
# Ireland

Hazardous waste generation in Ireland classified according to the European waste catalogue at two-digit level, stated in tonnes		I					
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry				21 141		
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing						
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture				9		
04	Wastes from the leather and textile industries				317		
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal				6 009		
06	Wastes from inorganic chemical processes				2 766		
07	Wastes from organic chemical processes				145 899		
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks				2 245		
09	Wastes from the photographic industry				97		
10	Inorganic wastes from thermal processes				850		
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy				154		
12	Wastes from shaping and surface treatment of metals and plastics				34		
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)				28 298		
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)				3 878		
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified				97		
16	Waste not otherwise specified in the catalogue				5 770		
17	Construction and demolition waste (including road construction)				330		
18	Wastes from human or animal healthcare and/or related research				3 031		
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry				3 504		
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions				273		
Total amount related to the HWL/EWC/add. EWC					224 702		
Total amount not possible to relate to the HWL/EWC/add. EWC					4 857		
<b>Total hazardous waste generation</b>					<b>229 559</b>		

II A		The 20 largest hazardous waste types generated in Ireland classified according to the European waste catalogue at six-digit level, stated in tonnes						
EWC 6-digit or national code	Description	H: HWL E: EWC A: add. EWC	1993	1994	1995	1996	1997	1998
07 05 99	Wastes not otherwise specified	E				49 244		
07 07 04	Other organic solvents, washing liquids and mother liquors	H				37 689		
07 05 04	Other organic solvents, washing liquids and mother liquors	H				31 067		
01 03 99	Wastes not otherwise specified	E				20 900		
13 05 03	Interceptor sludges	H				14 349		
07 05 03	Organic halogenated solvents, washing liquids and mother liquors	H				14 107		
13 04 03	Bilge oils from other navigation	H				6 906		
13 01 01	Hydraulic oils, containing pcbs or pcts	H				6 612		
05 01 03	Tank bottom sludges	H				6 001		
16 06 01	Lead batteries	H				5 655		
07 05 01	Aqueous washing liquids and mother liquors	H				4 431		
07 05 02	Sludges from on-site effluent treatment	E				3 400		
14 01 03	Other solvents and solvent mixes	H				2 233		
19 02 01	Metal hydroxide sludges and other sludges from metal insolubilisation treatment	H				2 218		
18 01 03	Other wastes whose collection and disposal is subject to special requirements in view of the prevention of infection	H				2 115		
07 07 08	Other still bottoms and reaction residues	H				1 965		
06 04 02	Metallic salts (except 06 03 00)	H				1 300		
07 05 10	Other filter cakes, spent absorbents	H				1 064		
18 01 05	Discarded chemicals and medicines	E				908		
07 05 08	Other still bottoms and reaction residues	H				820		

Cumulative percentage of hazardous waste quantities according to number of waste types included (1996)

II B



The relationship between the national hazardous waste classification codes used in Ireland and the European waste catalogue and hazardous waste list

III

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

IV		Hazardous waste generation in Ireland classified according to economic activity (NACE code), stated in tonnes					
NACE code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying				8		
DA	Manufacture of food, beverages and tobacco				164		
DB	Manufacture of textiles, wearing, apparel				7		
DC	Manufacture of leather				22		
DD	Manufacture of wood products				34		
DE	Manufacture of printing and publishing				2 250		
DF	Manufacture of refined petroleum products				6 642		
DG	Manufacture of chemicals				174 040		
DH	Manufacture of rubber and plastics products				1 568		
DI	Manufacture of other non-metallic mineral products				366		
DJ	Manufacturing and processing of basic metals				3 555		
DK	Manufacture of machinery and equipment						
DL	Manufacture of electrical and optical equipment				1 977		
DM	Manufacture of transport equipment				1 014		
DN	Manufacture of furniture, manufacturing n.e.c.				445		
	Manufacturing which can not be related to a specific D-category						
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category				192 083		
E	Electricity, gas and water supply				661		
F	Construction				159		
G-50.2	Maintenance and repair of motor vehicles						
<b>G total</b>	Wholesale and retail trade incl. G-50.2				18 180		
H	Hotel, restaurants						
I-61	Shipping				6 906		
<b>I total</b>	Transport, storage and communication including I-61				12 688		
K-74.81	Photographic activities						
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81				61		
L	Public and personal services				8		
M	Education				5		
N	Human health activities				3 017		
O	Refuse disposal				2 691		
X	Activity not stated						
	Total				229 561		

## General questions on hazardous waste data in Ireland

V

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
Treatment/disposal facilities					
Reporting from municipalities					
Estimates					

**No information**

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list					
The national hazardous waste classification					

**No information**

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste
The hazardous waste list or the national Implementation of the hazardous waste list				
The national hazardous waste classification				

**No information**

# Italy

I		Hazardous waste generation in Italy classified according to the European waste catalogue at two-digit level, stated in tonnes	
Code	Description	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry	not hazardous	not hazardous
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing	90	53.4
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture	380	4.8
04	Wastes from the leather and textile industries	514	0.8
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	28.9	48.7
06	Wastes from inorganic chemical processes	261.4	368.6
07	Wastes from organic chemical processes	841.5	961.9
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	36.8	37.9
09	Wastes from the photographic industry	163.6	77.2
10	Inorganic wastes from thermal processes	367.5	459.0
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy	297.8	484.3
12	Wastes from shaping and surface treatment of metals and plastics	232.9	302.8
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)	392.3	401.9
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)	137.4	74.9
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified	not hazardous	0.0
16	Waste not otherwise specified in the catalogue	317.7	244.4
17	Construction and demolition waste (including road construction)	21.4	17.2
18	Wastes from human or animal healthcare and/or related research	132.9	251.9
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry	163.5	252.4
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions	4.6	15.3
Total amount related to the HWL/EWC/add. EWC		3 401.1	
Total amount not possible to relate to the HWL/EWC/add. EWC			
<b>Total hazardous waste generation</b>			<b>4 057.7</b>

**The 20 largest hazardous waste types generated in Italy classified according to the European waste catalogue at six-digit level, stated in tonnes**

II

EWC code	Description	H: HWL E: EWC A: add. EWC	1993	1994	1995	1996	1997	1998
070101	Aqueous washing liquids and mother liquors						242	470
100401	Slags (first and second smelting)						241	223
130202	Non-chlorinated engine, gear, lubricating oils						197	156
160601	Lead batteries						186	690
180103	Other wastes whose collection and disposal is subject to special requirements in view of the prevention of infection						131.	181
110105	Acidic pickling solutions						120	220
070104	Other organic solvents, washing liquids & mother liquors						113	639
120109	Waste machining emulsions free of halogens						102	760
120301	Aqueous washing liquids						101	432
060199	Waste not otherwise specified						100	487
090101	Water-based developer and activator solutions						99	775
070701	Aqueous washing liquids and mother liquors						94	374
110202	Sludges from zinc hydrometallurgy (incl. jarosite, goethite)						91	650
070108	Other still bottoms and reaction residues						84	569
100308	Salt slags from secondary smelting						68	818
140201	Halogenated solvents and solvent mixes						66	239
070601	Aqueous washing liquids and mother liquors						64	637
190201	Metal hydroxide sludges and other sludges from metal insolubilisation treatment						64.	263
070501	Aqueous washing liquids and mother liquors						57	762
190106	Aqueous liquid waste from gas treatment and other aqueous liquid						53	958
							2 283	302

**The relationship between the national hazardous waste classification codes used in Italy and the European waste catalogue and hazardous waste list**

III

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

IV		Hazardous waste generation in Italy classified according to economic activity (NACE code), stated in tonnes	
NACE code	Economic area	1997	1998
A	Agriculture	8 581	
B	Fishing	144	
C	Quarrying	4 206	
DA	Manufacture of food, beverages and tobacco	31 438	
DB	Manufacture of textiles, wearing, apparel	16 569	
DC	Manufacture of leather	1 284	
DD	Manufacture of wood products	3 836	
DE	Manufacture of printing and publishing	212 575	
DF	Manufacture of refined petroleum products	28 524	
DG	Manufacture of chemicals	655 758	
DH	Manufacture of rubber and plastics products	29 033	
DI	Manufacture of other non-metallic mineral products	12 296	
DJ	Manufacturing and processing of basic metals	854 697	
DK	Manufacture of machinery and equipment	88 692	
DL	Manufacture of electrical and optical equipment	62 983	
DM	Manufacture of transport equipment	96 358	
DN	Manufacture of furniture, manufacturing n.e.c.	71 881	
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category		
E	Electricity, gas and water supply	48 457	
F	Construction	26 376	
G-50.2	Maintenance and repair of motor vehicles		
<b>G total</b>	Wholesale and retail trade incl. G-50.2	506 204	
H	Hotel, restaurants	314	
I-61	Shipping		
<b>I total</b>	Transport, storage and communication including I-61	33 163	
K-74.81	Photographic activities		
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81	68 807	
L	Public and personal services	75 995	
M	Education	996	
N	Human health activities	141 013	
O (90)	Refuse disposal	273 428	
X	Activity not stated	47 533	
	<b>Total</b>	3 632 116	3 401 141



## General questions on hazardous waste data in Italy

V

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Municipalities
Producers?		X	X	X	X
Collectors?		X	X	X	X
Treatment/disposal facilities?		X	X	X	X
Reporting from municipalities?					
Estimates?					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

**It is based on the EWC.**

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

**It is based on the EWC.**

# Iceland

I		Hazardous waste generation in Iceland classified according to the European waste catalogue at two-digit level, stated in tonnes					
EWC Description 2-digit		1993	1994	1995	1996	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry						
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing						
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture						
04	Wastes from the leather 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 (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks	100	200	300	300	300	300
09	Wastes from the photographic industry	100	200	300	300	300	300
10	Inorganic wastes from thermal processes						
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy						
12	Wastes from shaping and surface treatment of metals and plastics						
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)	4 000	4 500	2 800	4 200	4 300	5 300
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)	100	100	100	100	100	100
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified						
16	Waste not otherwise specified in the catalogue	500	600	700	700	700	700
17	Construction and demolition waste (including road construction)						
18	Wastes from human or animal healthcare and/or related research	100	100	100	100	100	100
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry						
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions						
	Total amount related to the HWL/EWC/add. EWC	4 900	5 700	4 300	5 700	5 800	6 800
	Total amount not possible to relate to the HWL/EWC/add. EWC						
	<b>Total hazardous waste generation</b>	<b>4 900</b>	<b>5 700</b>	<b>4 300</b>	<b>5 700</b>	<b>5 800</b>	<b>6 800</b>

The 20 largest hazardous waste types generated in Iceland classified according to the European waste catalogue at six-digit level, stated in tonnes

II

EWC 6-digit or national code	Description	H: HWL E: EWC A: add. EWC	1993	1994	1995	1996	1997	1998
13 00 00	Waste oils	H/E	4 000	4 500	2 800	4 200	4 300	5 300
16 06 00	Batteries and accumulators	H/E	500	600	700	700	700	700
09 00 00	Wastes form the photographic industries	H/E	100	200	300	300	300	300
08 00 00	Wastes from MFSU coatings etc.	H/E	100	200	300	300	300	300
14 00 00	Wastes from solvents and coolants	H/E	100	100	100	100	100	100
18 00 00	Wastes from Human or animal healthcare	H/E	100	100	100	100	100	100

The relationship between the national hazardous waste classification codes used in Iceland and the European waste catalogue and hazardous waste list

III

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

IV		Hazardous waste generation in Iceland classified according to economic activity (NACE code), stated in tonnes					
NACE Code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying						
DA	Manufacture of food, beverages and tobacco						
DB	Manufacture of textiles, wearing, apparel						
DC	Manufacture of leather						
DD	Manufacture of wood products						
DE	Manufacture of printing and publishing						
DF	Manufacture of refined petroleum products						
DG	Manufacture of chemicals						
DH	Manufacture of rubber and plastics products						
DI	Manufacture of other non-metallic mineral products						
DJ	Manufacturing and processing of basic metals						
DK	Manufacture of machinery and equipment						
DL	Manufacture of electrical and optical equipment						
DM	Manufacture of transport equipment						
DN	Manufacture of furniture, manufacturing n.e.c. Manufacturing which can not be related to a specific D-category						
<b>D</b>	<b>Manufacturing total incl. amounts which can not be related to a specific D-category</b>						
<b>total</b>							
E	Electricity, gas and water supply						
F	Construction						
G-50.2	Maintenance and repair of motor vehicles						
<b>G</b>	<b>Wholesale and retail trade incl. G-50.2</b>						
<b>total</b>							
H	Hotel, restaurants						
I-61	Shipping						
<b>I</b>	<b>Transport, storage and communication including I-61</b>						
<b>total</b>							
K-74.81	Photographic activities						
<b>J+K</b>	<b>Financial intermediation, business activities incl. K-74.81</b>						
<b>total</b>							
L	Public and personal services						
M	Education						
N	Human health activities						
O	Refuse disposal						
X	Activity not stated						
<b>Total</b>							

No information

## General questions on hazardous waste data in Iceland

V

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
Treatment/disposal facilities					
Reporting from municipalities					
Estimates					

**No information**

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list					
The national hazardous waste classification					

**No information**

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste
The hazardous waste list or the national Implementation of the hazardous waste list				
The national hazardous waste classification				

**No information**

# The Netherlands

		Hazardous waste generation in the Netherlands classified according to the European waste catalogue at two-digit level, stated in tonnes					
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry						
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing						
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture						
04	Wastes from the leather 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 (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks						
09	Wastes from the photographic industry						
10	Inorganic wastes from thermal processes						
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy						
12	Wastes from shaping and surface treatment of metals and plastics						
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)						
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)						
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified						
16	Waste not otherwise specified in the catalogue						
17	Construction and demolition waste (including road construction)						
18	Wastes from human or animal healthcare and/or related research						
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry						
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions						
Total amount related to the HWL/EWC/add. EWC							
Total amount not possible to relate to the HWL/EWC/add. EWC							
<b>Total hazardous waste generation</b>		836 000	890 000	868 000	959 000	1 271 000	

**The 20 largest hazardous waste types generated in the Netherlands classified according to the European waste catalogue at six-digit level, stated in tonnes**

II

<b>EWC 6-digit or national code</b>	<b>Description</b>	<b>H: HWL E: EWC A: add. EWC</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
—	Halogenated hydrocarbon-containing wastes				24 500	28 000	26 700	
—	Low-halogen solvents				35 700	47 400	58 400	
—	Photographic wastes				17 600	19 000	19 200	
—	Acids and bases wastes				44 900	50 900	61 300	
—	Used oil				40 100	50 400	48 700	
—	Oil-containing sludges				103 600	138 600	161 300	
—	Contaminated wastewater				119 900	103 000	204 500	
—	Sulphur-containing wastes				16 000	18 000	19 100	
—	Paint and ink-containing wastes				34 100	36 800	40 200	
—	Other organic wastes				133 400	140 200	152 600	
—	C1-wastes				500	600	300	
—	C2-wastes				87 400	84 600	88 100	
—	C3-wastes				109 200	136 200	238 200	
—	Contaminated blasting grit				28 800	31 500	41 800	
—	Ferrous and non-ferrous hazardous wastes				13 800	13 600	18 000	
—	Batteries				1 600	1 600	1 800	
—	Lead accumulators				25 000	30 700	32 200	
—	Fluorescent lamps				1 800	2 100	1 800	
—	Specific (hazardous) hospital waste				5 500	5 700	4 800	
—	Other hazardous wastes				24 900	19 800	52 100	
	Total (excluding contaminated soil and shipping waste)		836 000	890 000	868 300	958 700	1 271 100	
	Contaminated soil		791 000	459 000	564 500	570 900	928 900	
	Shipping waste		596 000	560 000	754 500	749 400	716 600	

**The relationship between the national hazardous waste classification codes used in the Netherlands and the European waste catalogue and hazardous waste list**

III

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

IV		Hazardous waste generation in the Netherlands classified according to economic activity (NACE code), stated in tonnes					
NACE code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying (oil and gas extraction)			31 000	52 900	62 000	
DA	Manufacture of food, beverages and tobacco			6 100	7 100	26 000	
DB	Manufacture of textiles, wearing, apparel			3 600	4 400	3 400	
DC	Manufacture of leather			3 800	2 100	3 600	
DD+DN	Manufacture of wood products + furniture, manufacturing n.e.c.			2 300	3 000	2 100	
DE	Manufacture of printing and publishing			12 700	13 100	12 300	
DF	Manufacture of refined petroleum products			46 200	48 500	64 300	
DG	Manufacture of chemicals			191 800	193 100	221 300	
DH	Manufacture of rubber and plastics products			5 100	5 400	26 000	
DI	Manufacture of other non-metallic mineral products			5 200	4 500	4 200	
DJ	Manufacturing and processing of basic metals			70 600	80 400	100 600	
DK	Manufacture of machinery and equipment			11 400	11 200	12 000	
DL	Manufacture of electrical and optical equipment			18 500	20 700	20 400	
DM	Manufacture of transport equipment			24 000	26 000	26 500	
	Other industry			2 400	3 400	4 300	
<b>D total</b>	Total industry (excluding contaminated soil)			403 700	422 900	527 000	
E	Electricity, gas and water supply						
F	Construction			45 400	25 900	36 700	
G-50.2	Maintenance and repair of motor vehicles			36 300	43 800	44 000	
<b>G total</b>	Retail trade			13 900	18 200	15 400	
H	Hotel, restaurants						
I-61	Shipping	596 000	560 000	755 000	749 000	717 000	
<b>I total</b>	Transport, storage and communication including I-61						
K-74.81	Photographic activities						
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81						
L	Public and personal services						
M	Education						
N	Human health activities						
O	Refuse disposal						
X	Other (including the not filled in sectors)			337 700	395 300	585 900	
	Total (excluding contaminated soil)	1 432 000	1 450 000	1 623 000	1 708 000	1 988 000	
	Total (excl. contaminated soil and shipping waste)	836 000	890 000	868 000	959 000	1 271 000	
	Contaminated soil	791 000	459 000	565 000	571 000	929 000	



## General questions on hazardous waste data in the Netherlands

V

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors		X	X	X	
Treatment/disposal facilities		X	X	X	
Reporting from municipalities					X
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste	Municipalities
The hazardous waste list or the national implementation of the hazardous waste list					
The national hazardous waste classification		X	X	X	X

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

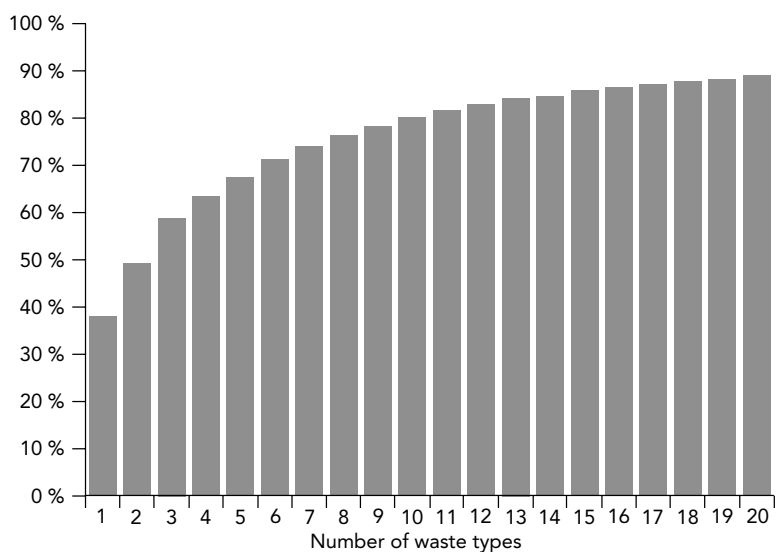
Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste
The hazardous waste list or the national implementation of the hazardous waste list				
The national hazardous waste classification		X	X	X





II B

**Cumulative percentage of hazardous waste quantities according to number of waste types included (1998)**



III

**The relationship between the national hazardous waste classification codes used in Norway and the European waste catalogue and hazardous waste list**

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

		Hazardous waste generation in Norway classified according to economic activity (NACE code), stated in tonnes						IV
NACE code	Economic area	1990	1994	1995	1996	1997	1998	
A	Agriculture	30	106	117	158	226	110	
B	Fishing	295	181	123	276	357	195	
C	Quarrying	11 071	15 329	25 366	33 802	29 525	32 937	
DA	Manufacture of food, beverages and tobacco	365	635	626	459	534	469	
DB	Manufacture of textiles, wearing, apparel	88	736	303	63	74	59	
DC	Manufacture of leather	31	9	3	20	2	4	
DD	Manufacture of wood products	216	213	344	405	484	390	
DE	Manufacture of printing and publishing	667	2 769	2 558	2 993	3 684	7 400	
DF	Manufacture of refined petroleum products	428	333	191	327	2 535	2 209	
DG	Manufacture of chemicals	6 338	9 944	5 439	414 842	409 975	476 028	
DH	Manufacture of rubber and plastics products	238	241	204	211	248	295	
DI	Manufacture of other non-metallic mineral products	231	367	230	405	400	493	
DJ	Manufacturing and processing of basic metals	1 713	7 344	3 245	4 839	5 151	5 065	
DK	Manufacture of machinery and equipment	1 366	2 464	1 918	2 779	3 211	2 819	
DL	Manufacture of electrical and optical equipment	871	996	990	956	883	692	
DM	Manufacture of transport equipment	2 452	4 130	3 712	5 206	6 196	4 948	
DN	Manufacture of furniture, manufacturing n.e.c.	183	407	305	416	462	537	
	Manufacturing which can not be related to a specific D-category							
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category	15 187	30 589	20 068	433 919	433 840	501 408	
E	Electricity, gas and water supply	1 034	1 070	661	572	2 045	1 697	
F	Construction	1 699	2 036	1 871	2 329	2 078	2 140	
G-50.2	Maintenance and repair of motor vehicles	19	12	5	20	56	39	
<b>G total</b>	Wholesale and retail trade incl. G-50.2	14 017	19 076	18 104	18 990	21 106	17 889	
H	Hotel, restaurants	85	51	123	46	54	49	
I-61	Shipping	1 961	3 735	3 187	3 559	3 951	3 444	
<b>I total</b>	Transport, storage and communication including I-61	5 735	8 884	7 953	10 301	11 772	8 943	
K-74.81	Photographic activities	1	566	441	963	605	398	
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81	1 942	2 552	2 397	4 393	3 718	1 863	
L	Public and personal services	2 080	3 895	2 661	4 220	4 298	2 283	
M	Education	404	396	343	310	491	471	
N	Human health activities	130	691	686	792	941	826	
O	Refuse disposal	337	2 978	1 306	1 487	1 600	3 206	
X	Activity not stated	5 620	4 385	20 178	17 249	22 888	33 471	
	<b>Total</b>	<b>59 668</b>	<b>92 219</b>	<b>101 956</b>	<b>528 843</b>	<b>534 939</b>	<b>607 489</b>	

V

## General questions on hazardous waste data in Norway

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers		X	X	X	
Collectors		X	X	X	X
Treatment/disposal facilities		X	X	X	
Reporting from municipalities		X	X	X	X
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste	Municipalities
The hazardous waste list or the national implementation of the hazardous waste list		X	X	X	X
The national hazardous waste classification		X	X	X	X

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste
The hazardous waste list or the national implementation of the hazardous waste list				
The national hazardous waste classification		X	X	X

# Portugal

		Hazardous waste generation in Portugal classified according to the European waste catalogue at two-digit level, stated in tonnes					1
EWC 2-digit	Description	1994	1995	1996	1997	1998	
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry						
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing						
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture					1 271	
04	Wastes from the leather and textile industries					16	
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal				4 670	20 321	
06	Wastes from inorganic chemical processes				2 647	10 103	
07	Wastes from organic chemical processes				7 569	20 307	
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks				3 387	3 500	
09	Wastes from the photographic industry				286		
10	Inorganic wastes from thermal processes				6 488	3 882	
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy				19 674	71 535	
12	Wastes from shaping and surface treatment of metals and plastics					24 371	
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)				40 397	83 171	
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)				872	11 139	
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified						
16	Waste not otherwise specified in the catalogue				1 927	19 843	
17	Construction and demolition waste (including road construction)					105	
18	Wastes from human or animal healthcare and/or related research				14 282	13 093	
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry				33 746	10 993	
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions					39 394	
Total amount related to the HWL/EWC/add. EWC					135 945	319 952	
Total amount not possible to relate to the HWL/EWC/add. EWC							
<b>Total hazardous waste generation</b>		<b>1 356 443<sup>1</sup></b>			<b>135 945<sup>2</sup></b>	<b>333 044<sup>2</sup></b>	

<sup>1</sup> Data collected according with the OECD classification.

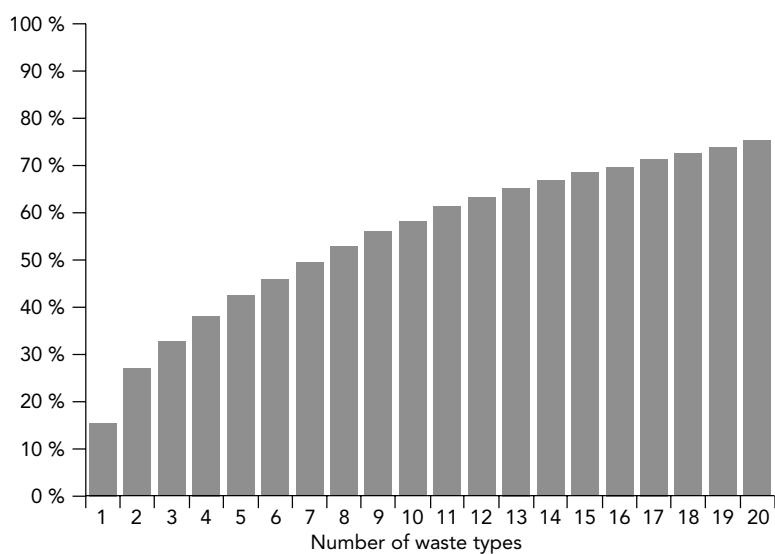
<sup>2</sup> Data collected according with the EWC.

II A		The 20 largest hazardous waste types generated in Portugal classified according to the European waste catalogue at six-digit level, stated in tonnes						
EWC 6-digit or national code	Description	H: HWL E: EWC A: add. EWC	1993	1994	1995	1996	1997	1998
20 01 21	Fluorescent tubes and other mercury-containing waste	H						38 772
12 01 00	Wastes from shaping	H						20 212
13 02 03	Other engine, gear and lubricating oils	H						19 336
13 02 02	Non-chlorinated engine, gear and lubricating oils	H						13 538
16 07 02	Waste from marine transport tank cleaning, containing oil	H						12 236
05 06 03	Other tars	H						11 850
13 01 07	Other hydraulic oils	H						10 812
13 02 00	Waste engine, gear & lubricating oils	H						10 525
14 01 03	Other solvents and solvent mixes	H						10 174
13 01 01	Hydraulic oils, containing pcbs or pcts	H						10 171
16 06 01	Lead batteries	H						6 790
19 08 03	Grease and oil mixture from oil/wastewater separation	H						5 991
13 01 06	Hydraulic oils containing only mineral oil	H						5 609
07 05 04	Other organic solvents, washing liquids and mother liquors	H						5 386
11 01 01	Cyanidic (alkaline) wastes containing heavy metals other than chromium	H						5 254
11 01 07	Alkalis not otherwise specified	H						4 827
05 01 05	Oil spills	H						4 080
07 05 10	Other filter cakes, spent absorbents	H						4 076
11 01 03	Cyanide-free wastes containing chromium	H						4 052



Cumulative percentage of hazardous waste quantities according to number of waste types included (1996)

II B



The relationship between the national hazardous waste classification codes used in Portugal and the European waste catalogue and hazardous waste list

III

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

IV		Hazardous waste generation in Portugal classified according to economic activity (NACE code), stated in tonnes				
NACE code	Economic area	1994	1995	1996	1997	1998
A	Agriculture					
B	Fishing					
C	Quarrying	471 800				6 418
DA	Manufacture of food, beverages and tobacco					3 111
DB	Manufacture of textiles, wearing, apparel	55 090				3 131
DC	Manufacture of leather	75 950				470
DD	Manufacture of wood products					14 766
DE	Manufacture of printing and publishing	189 848			599	2 993
DF	Manufacture of refined petroleum products	9 570			4 210	5 577
DG	Manufacture of chemicals	22 793			11 167	35 442
DH	Manufacture of rubber and plastics products	2 957				955
DI	Manufacture of other non-metallic mineral products	4 914				4 471
DJ	Manufacturing and processing of basic metals	33 891				70 180
DK	Manufacture of machinery and equipment	22 559			27 362	6 190
DL	Manufacture of electrical and optical equipment					10 383
DM	Manufacture of transport equipment					24 176
DN	Manufacture of furniture, manufacturing n.e.c.					7 771
	Manufacturing which can not be related to a specific D-category					
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category	417 572			43 338	189 616
E	Electricity, gas and water supply	391 407			6 200	39 568
F	Construction					11 581
G-50.2	Maintenance and repair of motor vehicles					
<b>G total</b>	Wholesale and retail trade incl. G-50.2	75 664			72 125	11 613
H	Hotel, restaurants					
I-61	Shipping					
<b>I total</b>	Transport, storage and communication including I-61					7 485
K-74.81	Photographic activities					
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81					53 651
L	Public and personal services					
M	Education					
N	Human health activities	6 332			14 282	13 093
O	Refuse disposal					
X	Activity not stated					20
	<b>Total</b>	1 356 443			135 945	333 044

## General questions on hazardous waste data in Portugal

V

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers		X	X		
Collectors					
Treatment/disposal facilities		X	X	X	
Reporting from municipalities					
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste	Municipalities
The hazardous waste list or the national implementation of the hazardous waste list		X	X	X	X
The national hazardous waste classification					

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. waste
The hazardous waste list or the national implementation of the hazardous waste list		X	X	X
The national hazardous waste classification				

# Basque Country

		Hazardous waste generation in the Basque Country classified according to the European waste catalogue at two-digit level, stated in tonnes				
EWC 2-digit	Description	1993	1994	1995	1996	1997 1998
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry					
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing		462			
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture					
04	Wastes from the leather and textile industries		1 010			
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal		55 071			
06	Wastes from inorganic chemical processes		54 464			
07	Wastes from organic chemical processes		16 845			
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks		1 318			
09	Wastes from the photographic industry		4 250			
10	Inorganic wastes from thermal processes		104 134			
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy		92 592			
12	Wastes from shaping and surface treatment of metals and plastics		69 425			
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)		16 950			
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)		881			
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified		1 230			
16	Waste not otherwise specified in the catalogue		564			
17	Construction and demolition waste (including road construction)					
18	Wastes from human or animal healthcare and/or related research					
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry		39 770			
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions		9 840			
Total amount related to the HWL/EWC/add. EWC						
Total amount not possible to relate to the HWL/EWC/add. EWC						
<b>Total hazardous waste generation</b>			<b>468 806</b>			

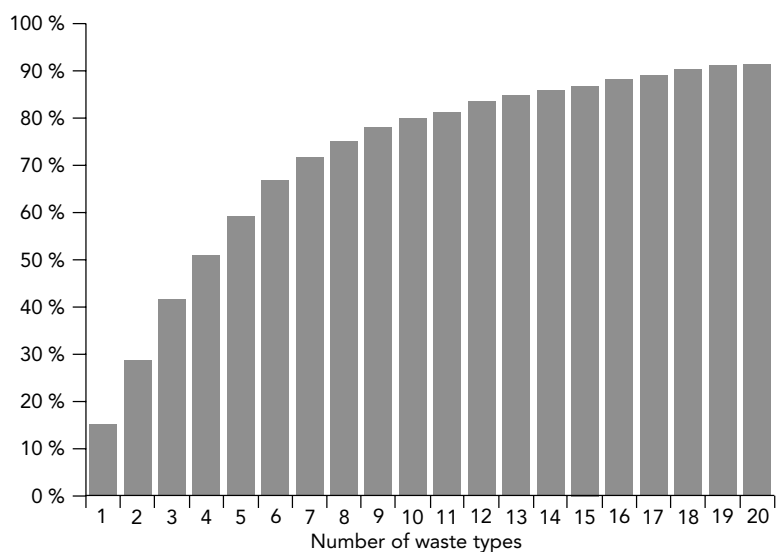
The 20 largest hazardous waste types generated in the Basque Country classified according to the European waste catalogue at six-digit level, stated in tonnes

II A

EWC 6-digit or national code	Description	H: HWL E: EWC A: add. EWC	1993	1994	1995	1996	1997	1998
12 01 09	Waste machining emulsions free of halogens	H		69 425				
11 01 05	Acidic pickling solutions	H		64 200				
10 02 03	Solid wastes from gas treatment	E		62 920				
05 05 01	Waste containing sulphur	E		45 532				
06 01 02	Hydrochloric acid	H		39 260				
10 03 08	Salt slags from secondary smelting	H		37 055				
19 02 01	Metal hydroxide sludges and other sludges from metal insolubilisation treatment	H		23 049				
19 03 01	Wastes stabilised/solidified with hydraulic binders	E		16 721				
11 01 07	Alkalis not otherwise specified	H		12 850				
13 02 02	Non-chlorinated engine, gear and lubricating oils	H		8 500				
2 001 16	Detergents	E		8 470				
13 04 02	Bilge oils from jetty sewers	H		8 450				
07 01 99.2	Ammoniacal wastewater containing phenols and cyanides	A		6 700				
06 02 01	Calcium hydroxide	H		6 025				
05 01 01	Sludges from on-site effluent treatment	E		5 575				
07 01 99.1.1	Phenols	A		5 330				
11 01 04	Cyanide-free wastes not containing chromium	E		4 768				
07 04 99.3	Waste from lindane production	A		4 500				
10 03 04	Primary smelting slags/white drosses	H		4 159				
11 01 08	Phosphatising sludges	H		3 800				
11 01 03	Cyanide-free wastes containing chromium	H		3 660				

II B

Cumulative percentage of hazardous waste quantities according to number of waste types included (1994)



III

The relationship between the national hazardous waste classification codes used in the Basque Country and the European waste catalogue and hazardous waste list

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

Hazardous waste generation in the Basque Country classified according to economic activity (NACE code), stated in tonnes		IV					
NACE code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture						
B	Fishing						
C	Quarrying						
DA	Manufacture of food, beverages and tobacco		462				
DB	Manufacture of textiles, wearing, apparel						
DC	Manufacture of leather		1 010				
DD	Manufacture of wood products						
DE	Manufacture of printing and publishing		318				
DF	Manufacture of refined petroleum products		55 071				
DG	Manufacture of chemicals		71 212				
DH	Manufacture of rubber and plastics products		107				
DI	Manufacture of other non-metallic mineral products						
DJ	Manufacturing and processing of basic metals		266 151				
DK	Manufacture of machinery and equipment						
DL	Manufacture of electrical and optical equipment						
DM	Manufacture of transport equipment						
DN	Manufacture of furniture, manufacturing n.e.c.		23 049				
	Manufacturing which can not be related to a specific D-category						
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category		417 380				
E	Electricity, gas and water supply						
F	Construction						
G-50.2	Maintenance and repair of motor vehicles		858				
<b>G total</b>	Wholesale and retail trade incl. G-50.2		9 358				
H	Hotel, restaurants						
I-61	Shipping		8 450				
<b>I total</b>	Transport, storage and communication including I-61		8 529				
K-74.81	Photographic activities		4 250				
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81		4 250				
L	Public and personal services						
M	Education						
N	Human health activities						
O	Refuse disposal		26 813				
X	Activity not stated		2 476				
	<b>Total</b>		468 806				

V

## General questions on hazardous waste data in Basque Country

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
Treatment/disposal facilities					
Reporting from municipalities					
Estimates					

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list					
The national hazardous waste classification					

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste
The hazardous waste list or the national Implementation of the hazardous waste list				
The national hazardous waste classification				



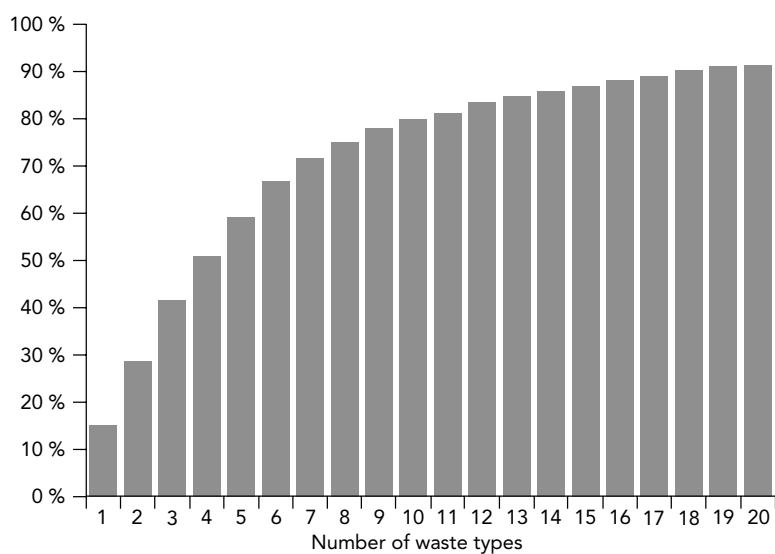
# Catalonia

		Hazardous waste generation in Catalonia classified according to the European waste catalogue at two-digit level, stated in tonnes						I
EWC 2-digit	Description	1993	1994	1995	1996	1997	1998	
01	Waste resulting from exploration, mining, dressing and further treatment of minerals and quarry		918	4 791	27 593			
02	Waste from agricultural, horticultural, hunting, fishing and aquaculture primary production, food preparation and processing		36 403	51 343	60 415			
03	Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture		46	5	44			
04	Wastes from the leather and textile industries		3 043	4 345	5 876			
05	Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal		13 684	13 384	5 686			
06	Wastes from inorganic chemical processes		83 209	67 678	56 165			
07	Wastes from organic chemical processes		172 542	214 350	198 019			
08	Wastes from the manufacture, formulation, supply and use (MSFU) of coating (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks		19 612	22 929	19 697			
09	Wastes from the photographic industry		281	102	200			
10	Inorganic wastes from thermal processes		200 516	187 713	185 780			
11	Inorganic waste with metals from metal treatment and the coating of metals; non-ferrous hydro-metallurgy		47 070	40 053	39 427			
12	Wastes from shaping and surface treatment of metals and plastics		2 534	3 611	5 406			
13	Oil wastes and other liquids (except edible oils 05 00 00 and 12 00 00)		32 552	18 862	25 149			
14	Wastes from organic substances employed as solvents and coolants (except 07 00 00 and 08 00 00)		42 593	49 835	97 529			
15	Packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified		46 534	47 834	47 015			
16	Waste not otherwise specified in the catalogue		23 281	17 416	21 287			
17	Construction and demolition waste (including road construction)		971	688	887			
18	Wastes from human or animal healthcare and/or related research		3	164	64			
19	Wastes from waste-treatment facilities, off-site wastewater-treatment plants and the water industry		57 618	78 648	95 701			
20	Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions		3 885	7 962	1 571			
	Total amount related to the HWL/EWC/add. EWC		787 295	831 713	893 511			
	Total amount not possible to relate to the HWL/EWC/add. EWC							
	<b>Total hazardous waste generation</b>		<b>787 295</b>	<b>831 713</b>	<b>893 511</b>			

II A		The 20 largest hazardous waste types generated in Catalonia classified according to the European waste catalogue at six-digit level, stated in tonnes						
EWC 6-digit or national code	Description	H: HWL E: EWC A: add. EWC	1993	1994	1995	1996	1997	1998
			03 02 01	Coal fly ash	E	149 398	131 392	125 513
03 03 03	Wastes stabilised/solidified with hydraulic binders	E	40 060	60 991	77 964			
05 04 01	Wastes not otherwise specified	E	10 458	43 655	51 105			
05 08 03	Sludges from on-site effluent treatment	E	45 020	30 654	42 137			
06 12 01	Animal tissue waste	E	22 153	38 260	40 835			
06 12 02	Other solvents and solvent mixes	H	13 542	21 265	36 524			
061301	Other halogenated solvents and solvent mixes	H	3 350	3 128	31 545			
07 01 09	Oil-containing drilling muds and wastes	E	917	2 447	27 553			
10 01 05	Other organic solvents, washing liquids & mother liquors	H	12 758	20 230	23 798			
14 05 01	Salt slags from secondary smelting	H	19 607	24 058	22 700			
16 01 99.1	Aqueous washing liquids and mother liquors	H	17 102	23 646	18 130			
16 04 01	Salts and solutions containing organic compounds	E	9 873	11 097	18 045			
16 04 03	Halogenated still bottoms and reaction residues	H	12 639	15 009	17 657			
19 01 99	Solid wastes from gas treatment	E	14 764	13 979	17 390			
19 08 99	Metallic	E	11 948	20 154	16 373			
20 01 01	Fly ash	H	8 352	15 343	14 779			
20 01 19	Other still bottoms and reaction residues	H	17 603	13 514	14 710			
13 03 02	Sludges from washing, cleaning, peeling, centrifuging and separation	E	2 336	2 542	13 456			
13 01 04	Cyanide-free wastes not containing chromium	E	14 117	8 770	11 734			
06 03 08	Casting cores and moulds containing organic binders which have not undergone pouring	E	11 484	10 825	10 722			

Cumulative percentage of hazardous waste quantities according to number of waste types included (1996)

II B



The relationship between the national hazardous waste classification codes used in Catalonia and the European waste catalogue and hazardous waste list

III

Has your country made a conversion between the existing national classification of hazardous waste and the European waste catalogue and the hazardous waste list?

The hazardous waste list?

Yes

No

If yes, please enclose the conversion listing.

IV		Hazardous waste generation in Catalonia classified according to economic activity (NACE code), stated in tonnes					
NACE code	Economic area	1993	1994	1995	1996	1997	1998
A	Agriculture		26 185	41 168	40 981		
B	Fishing						
C	Quarrying		918	4 791	27 593		
DA	Manufacture of food, beverages and tobacco		10 218	10 175	19 434		
DB	Manufacture of textiles, wearing, apparel		2 698	3 673	669		
DC	Manufacture of leather		345	0,0	5 207		
DD	Manufacture of wood products		5	5			
DE	Manufacture of printing and publishing		6 164	3 442	3 594		
DF	Manufacture of refined petroleum products		13 661	13 356	5 665		
DG	Manufacture of chemicals		252 481	276 416	250 477		
DH	Manufacture of rubber and plastics products		560	637	750		
DI	Manufacture of other non-metallic mineral products		1 128	1 288	106		
DJ	Manufacturing and processing of basic metals		99 532	98 601	104 878		
DK	Manufacture of machinery and equipment						
DL	Manufacture of electrical and optical equipment		13 278	18 925	15 798		
DM	Manufacture of transport equipment						
DN	Manufacture of furniture, manufacturing n.e.c.						
	Manufacturing which can not be related to a specific D-category						
<b>D total</b>	Manufacturing total incl. amounts which can not be related to a specific D-category		400 070	426 518	406 578		
E	Electricity, gas and water supply		149 499	131 520	125 632		
F	Construction		3 904	1 289	1 855		
G-50.2	Maintenance and repair of motor vehicles		35 470	22 303	23 130		
<b>G total</b>	Wholesale and retail trade incl. G-50.2		35 470	22 303	23 130		
H	Hotel, restaurants						
I-61	Shipping		1	48	371		
<b>I total</b>	Transport, storage and communication including I-61		15 284	7 309	14 518		
K-74.81	Photographic activities		281	102	200		
<b>J + K total</b>	Financial intermediation, business activities incl. K-74.81		281	102	200		
L	Public and personal services						
M	Education						
N	Human health activities		3	164	64		
O	Refuse disposal		92 673	128 184	155 917		
X	Activity not stated		58 854	60 484	89 773		
	<b>Total</b>		783 141	823 832	886 241		

## General questions on hazardous waste data in Catalonia

V

1. Is the information given to this survey about your country on generation of hazardous waste based on data reported to the national or regional authorities by the following sources:

Reporter	Generator	Agriculture, fishing & quarrying	Manufacturing, energy and water supply, construction	Wholesale, retail, transport public and private services	Households
Producers					
Collectors					
Treatment/disposal facilities					
Reporting from municipalities					
Estimates					

**No information**

2. When producers, collectors, treatment/disposal facilities or municipalities report information on generation of hazardous waste to the national or the regional authorities, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste	Municipalities
The hazardous waste list or the national Implementation of the hazardous waste list					
The national hazardous waste classification					

**No information**

3. When the authorities issue permits or licences for the generation, collection, treatment/disposal of hazardous waste, is the waste classification based on:

Applied classification	Kind of activity	Generation of haz. waste	Collection of haz. waste	Treatment/disposal of haz. Waste
The hazardous waste list or the national Implementation of the hazardous waste list				
The national hazardous waste classification				

**No information**

European Environment Agency

**Hazardous waste generation in EEA member countries — Comparability of classification systems and quantities, Topic report 14/2001**

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