



# **Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations –**

## **Guide to Hazardous Waste and Hazardous Recyclable Material Classification**

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Environment and Climate Change Canada  
Waste Reduction and Management Division

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## 1. Introduction

The *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* (hereafter referred to as the Regulations) adopted under the *Canadian Environmental Protection Act, 1999* (CEPA), regulate hazardous waste and hazardous recyclable materials transported across international borders (as exports from , imports into, or transits through, Canada). The Regulations are the mechanism by which Canada implements its international obligations under the Basel Convention<sup>1</sup>, the Canada-US Agreement on the Transboundary Movement of Hazardous Waste<sup>2</sup> and relevant decisions of the Organisation for Economic Co-operation and Development (OECD)<sup>3</sup>.

The Regulations specify what is considered to be “hazardous waste” and “hazardous recyclable material”, for the purpose of CEPA and the Regulations, and establish a permitting regime to control and track their transboundary movements between Canada and other countries. It is through this permitting process that Canada obtains consent from foreign importing and transit countries and provides consent for imports into Canada.

### 1.1 Purpose of the Guide to Classification

The Guide to Classification is a companion document to the *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations User Guide* (also referred to as EIHWHRMR User Guide)<sup>4</sup>. Readers should have familiarized themselves with the Regulations by first reading the EIHWHRMR User Guide. Familiarity with the *Transportation of Dangerous Goods Regulations* (TDGR)<sup>5</sup> administered by Transport Canada is also needed to fully understand some of the information provided in this guide. The Classification Guide is intended to provide practical advice to help determine if waste or recyclable material is subject to the Regulations, and to classify hazardous waste or hazardous recyclable material by selecting the codes that describe the waste or recyclable material for the purposes of notification (using the electronic system or administrative form) and movement tracking. However, should there be any discrepancy between this guide and the Regulations, the Regulations take precedence.

### 1.2 Approach to Classification

The basic approach relies on lists and hazard criteria. The lists are not intended to be comprehensive and therefore the list and hazard criteria are complementary. The hazard criteria, that include tests such as the Toxicity Characteristic Leaching Procedure, are needed to characterize the hazards of wastes and recyclable materials that are not specifically listed.

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<sup>1</sup> Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (see <http://www.basel.int> for more information)

<sup>2</sup> Agreement Between the Government of Canada and the Government of the United States of America Concerning the Transboundary Movement of Hazardous Waste and Other Waste (see <https://www.ec.gc.ca/gdd-mw/default.asp?lang=en&n=EB0B92CE-1> for more information)

<sup>3</sup> Decision C(2001) 107/Final of the OECD, “Decision of the Council Concerning the Revision of Decision C(92)39/FINAL on the Control of Transboundary Movements of Wastes Destined for Recovery Operations” (see <https://www.ec.gc.ca/gdd-mw/default.asp?lang=en&n=6E36C8C4-1> for more information)

<sup>4</sup> Available at <http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=8BBB8B31-1>.

<sup>5</sup> See <http://www.tc.gc.ca/eng/tdg/safety-menu.htm> for more information.

## 1.3 Use of this Guide

This guide contains the following seven sections:

1. Introduction
2. What is Hazardous Waste under the Regulations?
3. What is Hazardous Recyclable Material under the Regulations?
4. Classifying Hazardous Waste and Hazardous Recyclable Material using Codes Required under the Regulations
5. Classification Examples
6. Sources of Additional Information
7. Appendices

The appendices in this guide contain tables used in the classification of hazardous wastes and hazardous recyclable materials that are not directly found in the Regulations but are referenced in it (e.g., relevant lists and schedules from the OECD decisions and annexes to the Basel Convention). In some cases where it was not practical to provide a table (for example, the listing of all HS Codes would result in a large table), the appropriate reference is provided. A list of appendices is provided on Page 2 of this guide.

The Guide is intended for use by individuals who have some familiarity with the TDGR; however, it does not provide guidance on complying with the classification, placarding, or labeling requirements of the TDGR.

## 2. What is Hazardous Waste under the Regulations?

### 2.1 Hazardous Waste Definition

Paragraph 1 of Section 1 of the Regulations defines “hazardous waste” as anything that is **to be disposed** of using a disposal operation set out in Schedule 1 (reproduced in Appendix 2 of this document), and that also meets **at least one** of the six requirements outlined in sections 2.1.1 to 2.1.6:

Note that the descriptions in sections 2.1.1 to 2.1.6 as well as section 2.2 of this guide also apply to the definition of “hazardous recyclable material” outlined in section 3.1. References to hazardous recyclable material are made throughout sections 2.1.1 to 2.1.6 of this guide to avoid having to repeat the descriptions provided in section 3.1. Also, a reference to waste in those sections can be substituted for a reference to recyclable material.

### 2.1.1 It is listed in **column 2 of Schedule 3** of the Regulations

These wastes are designated as hazardous for the purpose of exports, imports and transits. They may not meet any of the hazard criteria but are included to comply both with Canada's international obligations and CEPA requirements. Examples include biomedical waste, used oil and some substances that are toxic under CEPA such as dioxins and furans.

Note that biomedical waste cannot be imported or exported for the purposes of recycling as it can only be disposed.

### 2.1.2 It is included in at least one of **classes 2, 3, 4, 5, 6, 8 or 9** of the TDGR

The TDGR divide dangerous goods into nine classes according to the type of danger they present. The nine classes of dangerous goods are (see section 2.2 of this Guide for more information):

*Class 1: Explosives (NOT COVERED UNDER THE REGULATIONS)*

**Note:** Explosives are administered by the *Explosives Act* and Regulations.

**Class 2: Gases**

**Class 3: Flammable Liquids**

**Class 4: Flammable Solids; Substances Liable to Spontaneous Combustion; Substances That, on Contact with Water Emit Flammable Gases (Water-Reactive Substances)**

**Class 5: Oxidizing Substances and Organic Peroxides**

**Class 6: Toxic and Infectious Substances**

*Class 7: Radioactive Materials (NOT COVERED UNDER THE REGULATIONS)*

**Note:** Radioactive materials are administered by the Canadian Nuclear Safety Commission.

**Class 8: Corrosives**

**Class 9: Miscellaneous Products, Substances or Organisms**

Under the TDGR, Part 2 sets out how to determine when a substance is included in one of the nine classes. Specifically, a substance would need to:

- be listed by name in Schedule 1 of the TDGR<sup>6</sup> and be in any form, state or concentration that meets the criteria for inclusion in one of the classes as set out in Part 2; or
- simply meet the criteria for inclusion in one of the classes as set out in Part 2.

Therefore Schedule 1 of the TDGR can be used as a first indication of whether or not a substance may be included in one of the nine classes, but the criteria set out in Part 2 of the TDGR essentially need to be met. Note that Class 1 and Class 7 are not covered by the *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*.

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<sup>6</sup> A searchable database for Schedule 1 of the TDGR is found at <http://wwwapps.tc.gc.ca/saf-sec-sur/3/sched-ann/schedule1form.aspx>

2.1.3 It is listed in **column 2 of Schedule 4 of the Regulations** and is included in at least one of **classes 2, 3, 4, 5, 6, 8, or 9** of the TDGR

The Schedule 4 lists of hazardous waste and hazardous recyclable material include the additions made by the US since the mid-1990s and by the province of Ontario. Both parts of this schedule include the F&K lists from the United States Environmental Protection Agency (US EPA) generated through particular processes or industries. In addition, Part 1 of Schedule 4 reflects the US wording for items 1 to 5, which include a 10 per cent concentration as a threshold for inclusion. The lists set out in Schedule 4 allow for closer harmonization with the US and Ontario lists of hazardous industrial wastes, in addition to other industry-oriented international lists.

2.1.4 It is listed in **column 1 of Schedule 5** of the Regulations in a concentration equal to or greater than the applicable concentration set out in **column 2** of that schedule

2.1.5 It produces a leachate containing a constituent set out in **column 2 of Schedule 6** of the Regulations in a concentration equal to or greater than the applicable concentration set out in **column 3** of that schedule

This schedule sets the constituents and limits for the prescribed test for determining leachability, the US EPA Method 1311. Method 1311, Toxicity Characteristic Leaching Procedure (TCLP), is used as a measure of the availability and mobility of these hazardous constituents to migrate from the waste into the environment, where they pose a hazard to human health and the environment. The test is also applied to recyclable material because, in circumstances where the opportunity for recycling would vanish, those materials could end up being disposed.

2.1.6 It is listed in **column 2 of Schedule 7 of the Regulations**, is pure or is the only active ingredient, and is unused

These wastes include commercial chemical wastes and recyclables included on the US EPA P&U lists. These substances are commercial chemical products or manufacturing intermediates that, from time to time, are off-specification or otherwise unacceptable for use. This list is consistent with the current approach used by both the US and Ontario.

## **2.2 Hazard Characteristics Criteria for Classes 2, 3, 4, 5, 6, 8 and 9 of the TDGR**

This section summarizes requirements in Part 2 of TDGR. Please refer to Transport Canada's website for full details. If there is a discrepancy between the information in this *Classification Guide* and Part 2 of the TDGR, the TDGR take precedence. Note that a reference to waste in this section can be substituted for a reference to recyclable material.

### **Class 2: Gases**

Waste is included in Class 2 if it is

- (a) a gas included in one of the divisions described below;
- (b) a mixture of gases;



- (c) a mixture of one or more gases with one or more vapours of substances included in other classes;
- (d) an article charged with a gas;
- (e) tellurium hexafluoride; or
- (f) an aerosol.

### **Divisions**

Class 2 contains the following three divisions:

**Class 2.1:** Flammable Gases, consisting of gases that, at 20°C and an absolute pressure of 101.3 kPa,

- (i) are ignitable when in a mixture of 13 per cent or less by volume with air, or
- (ii) have a flammability range with air of at least 12 percentage points determined in accordance with tests or calculations in ISO 10156;

**Class 2.2:** Non-flammable and Non-toxic Gases, consisting of gases that are transported at an absolute pressure is greater or equal to 280 kPa at 20°C or as refrigerated liquids, and that are not included in Class 2.1, Flammable Gases, or Class 2.3, Toxic Gases; and

**Class 2.3:** Toxic Gases, consisting of gases that

- (i) are known to be toxic or corrosive to humans according to CGA P-20, ISO Standard 10298 or other documentary evidence published in technical journals or government publications, or
- (ii) have an LC<sub>50</sub> value less than or equal to 5 000 mL/m<sup>3</sup>.

### **Packing Groups**

There are no packing groups for Class 2, Gases.

Guidance on the determination of the LC<sub>50</sub> value is found in sections 2.16 and 2.17 of Part 2 of the TDGR.

### **Class 3: Flammable Liquids**

Waste included in Class 3 are substances that are liquids or liquids containing solids in solution or suspension, that

- (a) have a flash point less than or equal to 60°C using the closed-cup test method referred to in Chapter 2.3 of the *United Nations (UN) Recommendations on the Transport of Dangerous Goods*<sup>7</sup> (hereafter referred to as the UN Recommendations); or
- (b) are intended or expected to be at a temperature that is greater than or equal to their flash point at any time while the substances are in transport.

Note: A flash point of 65.6°C, using the open-cup test method referred to in Chapter 2.3 of the UN Recommendations, is equivalent to 60°C using the closed-cup test.

Liquids that have a flash point greater than 35°C are **not** included in Class 3 if they

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<sup>7</sup> Refer to the most up-to-date version of the UN Recommendations. The UN Recommendations can be found at <http://www.unece.org/?id=3598>.

- (a) do not sustain combustion, as determined in accordance with the sustained combustibility test referred to in section 2.3.1.3 of Chapter 2.3 of the UN Recommendations;
- (b) have a fire point greater than 100°C, as determined in accordance with ISO 2592; or
- (c) are water-miscible solutions with a water content greater than 90 per cent by mass.

### **Packing Groups**

Flammable liquids included in Class 3 are grouped into one of the following packing groups:

<b>Packing Group</b>	<b>Boiling Point</b>	<b>Flash Point</b>
Group I	less than or equal to 35°C at 101.3 kPa	Any
Group II	greater than 35°C at 101.3 kPa	less than 23°C
Group III	If the criteria for inclusion in packing groups I and II are not met, the waste is included in Packing Group III.	

Exceptions to the above packing groups are listed in TDGR Part 2, section 2.19.

### **Class 4: Flammable Solids; Substances Liable to Spontaneous Combustion; Substances That on Contact with Water Emit Flammable Gases (Water-Reactive Substances)**

#### **Divisions**

Waste included in Class 4 are divided into the following three divisions (additional detail is provided in TDGR Part 2, section 2.21):

**Class 4.1:** Flammable Solids;

**Class 4.2:** Substances Liable to Spontaneous Combustion; and

**Class 4.3:** Water-Reactive Substances.

#### **Packing Groups**

As set out in section 2.22 and compiled in column 4 of Schedule 1 of the TDGR

### **Class 5: Oxidizing Substances and Organic Peroxides**

#### **Divisions**

Class 5 has two divisions:

**Class 5.1:** Oxidizing Substances, which consists of substances that yield oxygen thereby causing or contributing to combustion of other material (as determined in accordance with section 2.5.2 of Chapter 2.5 of the UN Recommendations); and

**Class 5.2:** Organic Peroxides, which consists of substances that

- (i) are thermally unstable organic compounds that contain oxygen in the bivalent “-O-O-” structure (as determined in accordance with section 2.5.3 of Chapter 2.5 of the UN Recommendations);
- (ii) are liable to undergo exothermic self-accelerating decomposition;

- (iii) have one or more of the following characteristics:
  - (A) liable to explosive decomposition
  - (B) burn rapidly
  - (C) sensitive to impact or friction
  - (D) react dangerously with other substances
  - (E) cause damage to the eyes; or
- (iv) are in the list of currently assigned organic peroxides in section 2.5.3.2.4 of Chapter 2.5 of the UN Recommendations.

### **Packing Groups**

As set out in section 2.25 and compiled in column 4 of Schedule 1 in the TDGR.

### **Class 6: Toxic and Infectious Substances**

#### **Divisions**

Class six has two divisions:

**Class 6.1:** Toxic Substances, which consists of substances that are liable to cause death or serious injury or to harm to human health if swallowed or inhaled or if they come into contact with human skin. The groups of toxic substances are outlined in the chart below.

<b>Form</b>	<b>Toxicity</b>	<b>LD<sub>50</sub></b>	<b>LC<sub>50</sub></b>
Any	Oral	Less than or equal to 300 mg/kg	
Any	Dermal	Less than or equal to 1000 mg/kg	
Vapour	Inhalation		Less than or equal to 5 000 mL/m <sup>3</sup>
Dusts/mists	Inhalation		Less than or equal to 4 mg/L

Guidance for determination of the LD<sub>50</sub> value is provided in sections 2.30 and 2.31 of Part 2 of the TDGR.

**Class 6.2:** Infectious Substances, which consists of infectious substances defined in Part 1 of TDGR as substances known or reasonably believed to contain viable micro-organisms such as bacteria, viruses, rickettsia, parasites, fungi and other agents such as prions that are known or reasonably believed to cause disease in humans or animals and that are listed in Appendix 3 of the TDGR, or that exhibit characteristics similar to substances listed in Appendix 3 of the TDGR.

Waste included in this class are divided into two categories: Category A and Category B (see section 2.36 and Appendix 3 - Guide to Category A and Category B Assignment) of the TDGR

### **Packing Groups**

Packing Groups for waste included in Class 6.1 are set out in sections 2.29, 2.34 and 2.35 under Part 2 of the TDGR.

### **Class 8: Corrosive Substances**

Substances are included in Class 8 if they

- (a) are known to cause full thickness destruction of human skin, that is, skin lesions that are permanent and destroy all layers of the outer skin through to the internal tissues;
- (b) cause full thickness skin destruction, as determined in accordance with OECD Guidelines 430 or 431
- (c) do not cause full thickness destruction of skin, but exhibit a corrosion rate that exceeds 6.25mm per year at a test temperature of 55°C, as determined in accordance with the ASTM (American Society for Testing Materials) Corrosion Test.

### ***Packing Groups***

As set out in section 2.42 under Part 2 of the TDGR

### ***Class 9: Miscellaneous Products, Substances, or Organisms***

As per section 2.43 under the TDGR waste is included in Class 9 if it:

- (a) is included in Class 9 in column 3 of Schedule 1 of the TDGR, or
- (b) is not included in Class 9 in column 3 of Schedule 1 and does not meet the criteria for inclusion in any of Classes 1 to 8, and
  - (ii) is a marine pollutant under section 2.7 of Part 2 (Classification), or
  - (iii) except for asphalt or tar, is offered for transport or transported at a temperature greater than or equal to 100°C if it is in a liquid state or at a temperature greater than or equal to 240°C if it is in a solid state,

Note: In circumstances where waste does not meet the criteria for inclusion in any of the classes 2, 3, 4, 5, 6, 8 and 9 (as per section 2.43) of the TDGR (i.e. there is no applicable UN number based on those hazard criteria), and this waste is considered to be hazardous waste under the Regulations, one of the following UN numbers applies to the hazardous waste and must be used<sup>8</sup>:

- For a liquid, the UN number 3082 (shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.),
- For a solid, the UN number 3077 (shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.),
- Either UN number 3082 or UN number 3077 in the case of sludge (using the corresponding shipping name).

Therefore, the hazardous waste is designated as a dangerous good of Class 9 and applicable TDGR requirements are triggered for its transportation.

### ***Packing Groups***

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<sup>8</sup> For more details, see section 2.9.2 of UN Recommendations with respect to these designations and paragraph 2.2(4) of the TDGR and the Advisory Note Regarding recent amendments to TDGR and their impacts on Permits Issued under the Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (EIHWHMR) and the Interprovincial Movement of Hazardous Waste Regulations (IMHWR) (December 9, 2015) (<https://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=D15CF25D-1>)

Substances included in Class 9 are included in Packing Group III, unless they are included in a different packing group, as set out in column 4 of Schedule 1 of the TDGR.

### **2.3 Exclusions from the definition of Hazardous Waste**

Paragraph 2 of section 1 of the Regulations excludes from the definition in paragraph 1 anything exported, imported, or conveyed in transit that meets at least one of the following three criteria

1. in a quantity of less than 5 kg or 5 L per shipment or, in the case of mercury, in a quantity less than 50ml per shipment (other than anything included in class 6.2 of the TDGR),
2. that is collected from households in the course of regular municipal waste collection services, or
3. that is part of the exporter's or importer's personal or household effects, not resulting from commercial use.

Note that hazardous waste excluded under these criteria may still be subject to the regulations if it is exported and meets the criteria described in section 2.4 of this guide.

Also note that the exemption for waste "collected from households in the course of regular municipal waste collection services" applies to municipal governments' collection and disposal programs. Hazardous waste or hazardous recyclable material separated out and gathered by depots or transfer stations for subsequent export or import is subject to the Regulations.

### **2.4 Waste Considered Hazardous for the Purpose of Export**

Further to the hazardous waste identified in section 1 of the Regulations, any waste is considered to be hazardous waste if it will be exported to a country of import or conveyed in transit through a country and it meets at least one of the following conditions:

- (a) it is defined as, or considered to be, hazardous under the legislation of the country of import or a country of transit;
- (b) its importation is prohibited under the legislation of the country of import; or
- (c) it is one of the hazardous wastes covered under the Basel Convention.

Anyone who arranges the shipment of any type of waste to be exported, should determine if the countries to which the waste or recyclable material will be exported and through which the waste or recyclable material will transit have national laws that in any way prohibit, restrict, or control the import or transit of the waste or material.

The Basel Convention Export and Import Control Tool is a searchable database providing quick access to specific information for the countries of export, import, and transit, such as their national definitions of hazardous waste and import restrictions.

If the import or transit of the waste or material is prohibited in the receiving country or in any of the transit countries, this waste or recyclable material cannot be sent to those countries. If there are laws in the import or transit countries restricting or controlling the import or transit of the waste or material, a notification must be submitted to

Environment and Climate Change Canada for the proposed shipment. Environment and Climate Change Canada will contact the competent authority of the import and transit countries to seek their consent before the waste or recyclable material is shipped. In the case of imports into Canada, each provincial or territorial government must provide authorization for recycling or disposal operations at authorized facilities in their province or territory and communicate it to Environment and Climate Change Canada.

### **3. What is Hazardous Recyclable Material under the Regulations?**

#### **3.1 Hazardous Recyclable Material Definition**

Paragraph 1 of Section 2 of the Regulation defines “hazardous recyclable material” as anything that is **to be recycled** using one of the recycling operations set out in Schedule 2 (Recycling Operations for Hazardous Recyclable Materials) (reproduced in Appendix 3 of this Guide), and that also **meets at least one** of the same six requirements outlined under sections 2.1.1 to 2.1.6 of this Guide.

### **3.2 Exclusions from the definition of hazardous recyclable material**

Paragraph 2 of section 2 of the Regulations excludes from the definition in paragraph 1 anything exported, imported or conveyed in transit that meets at least one of the following three criteria:

1. is in a quantity of less than 5 kg or 5 L per shipment or in the case of mercury in a quantity less than 50ml per shipment (other than anything included in class 6.2 of the TDGR);
2. is collected from households in the course of regular municipal waste collection services; or
3. is part of the exporter's or importer's personal or household effects, not resulting from commercial use.

Note that hazardous recyclable material excluded under these criteria may still be subject to the regulations if it is exported and meets the criteria described in section 3.3 of this guide.

Also note that the exemption for recyclable material "collected from households in the course of regular municipal waste collection services" applies to municipal governments' collection and disposal programs. Hazardous waste or hazardous recyclable material separated out and gathered by depots or transfer stations for subsequent export or import is subject to the Regulations.

For shipments of hazardous recyclable material that are exported, imported, or conveyed in transit within the OECD<sup>9</sup>, the definition of "hazardous recyclable material" does not include anything that

(a) meets all four of the following criteria:

- is in a quantity of 25 kg or 25 L or less;
- is exported or imported for the purpose of conducting measurements, tests, or research with respect to the recycling of that material;
- is accompanied by a shipping document, as defined in section 1.4 of the TDGR, that includes the name and address of the exporter or importer and the words "test samples" or "échantillons d'épreuve"; and
- is not and does not contain an infectious substance as defined in section 1.4 of the TDGR;

**or,**

(b) meets all three of the following criteria:

- is set out in Schedule 8;
- does not exhibit any of the hazard characteristic for Classes 2, 3, 4, 5, 6, 8 or 9 in Part 2 of the TDGR but has a leachate extraction concentration that exceeds the leachate extraction concentration listed for that substance in Schedule 6 of the Regulations; and
- is to be recycled at an authorized facility in the country of import, using one of the operations set in Schedule 2 of the Regulations.

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<sup>9</sup> A list of OECD countries can be found at [http://www.oecd.org/document/58/0,2340,en\\_2649\\_201185\\_1889402\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/58/0,2340,en_2649_201185_1889402_1_1_1_1,00.html)

### **3.3 Recyclable Material Considered Hazardous for the Purpose of Export**

Further to the hazardous recyclable material identified in section 2 of the Regulations, any recyclable material is considered to be hazardous recyclable material if it will be exported to a country of import or conveyed in transit through a country and it meets at least one of the following conditions:

- (a) it is defined as, or considered to be, hazardous under the legislation of the country of import or a country of transit;
- (b) its importation is prohibited under the legislation of the country of import;  
or
- (c) it is one of the hazardous wastes covered under the Basel Convention.

Anyone who arranges the shipment of any type of recyclable material to be exported should determine if the countries to which the waste or recyclable material will be exported and through which the waste or recyclable material will transit have national laws that in any way prohibit, restrict, or control the import or transit of the waste or material.

The Basel Convention Export and Import Control Tool is a searchable database providing quick access to specific information for the countries of export, import, and transit, such as their national definitions of hazardous waste and import restrictions. If the import or transit of the waste or material is prohibited in the receiving country or any of the transit countries, this waste or recyclable material cannot be sent to those countries. If there are laws in the import or transit countries restricting or controlling the import or transit of the waste or material, a notification must be submitted to Environment and Climate Change Canada for the proposed shipment. Environment and Climate Change Canada will contact the competent authority of the import and transit countries to seek their consent before the waste or recyclable material is shipped. In the case of imports into Canada, each provincial or territorial government provides authorization for recycling or disposal operations at authorized facilities in their province or territory and communicate it to Environment and Climate Change Canada.

## **4. Classifying Hazardous Waste and Hazardous Recyclable Material Using Codes Required under the Regulations**

Paragraph 8(j) of the Regulations specifies information required in a notice of import, export, or transit with respect to each hazardous waste or hazardous recyclable material. Distinct line item numbers are required for each hazardous waste or hazardous recyclable material entry, as well as any information associated with that entry.



## 4.1 Specific information required in a notice to classify the hazardous waste or hazardous recyclable material

1. The **International Waste Identification Code** and Basel “Y” codes make up a seven-part code (thereafter referenced in this Guide to Classification as the IWIC) that provides a way of classifying hazardous waste and hazardous recyclable material for export/import/transit purposes

Each part of the IWIC is prefixed with a specific letter, to indicate the type of information it contains. The different parts of the code are separated by two slashes (/). In some portions of the code, more than one number can be entered. When more than one entry from a specific appendix of this Guide is used, a plus sign (+) must separate those entries.

The completed code will have the following form:

Q a (+ a) \* // D, R \*\* b // L, P, S, G \*\*\* c // C d (+ d + d + d) // H e (+ e + e) // A  
f // Y g (+ g + g + g)

**Note:** \* The portions of the code in brackets ( ) may or may not be required, depending on the waste in question.

\*\* Enter only one letter: “D” for disposal or “R” for recycling, as set out in column 1 of Appendix 2 or 3, respectively, of this Guide.

\*\*\* Enter only one letter: “L” for liquid, “P” for sludge, “S” for solid, or “G” for gas.

The IWIC can be obtained as follows using the tables included in appendices of this Guide:

- a. Choose the one (or, at most, two) major reason(s) why the waste or recyclable material is intended for disposal or recycling from the list in [Appendix 1](#). Mark your selection as “Q” plus the code number(s).
- b. Indicate the method selected for disposal or recycling by choosing the one operation from either [Appendix 2](#) or [Appendix 3](#) that most closely describes the fate intended for the material. Mark your selection as “D” or “R” plus the code number (only one method by line item is accepted).
- c. Indicate whether the waste or recyclable material is a liquid (L), sludge (P), solid (S) (powders are considered to be solids) or gas (G). Select the one descriptor from [Appendix 4](#) that most closely describes the generic form of the waste or recyclable material. Mark your selection as “L”, “P”, “S” or “G” plus the code number.
- d. Indicate whether the waste or recyclable material does or does not contain any of the constituents listed in Appendix 5. If it does not, mark “C0”. If it contains one, mark the appropriate code number. If it contains more than one, estimate the hazard of each constituent (to a maximum of four entries) and indicate them in descending order of importance, using the appropriate C code numbers. The order of importance is an estimate by the notifier based on the quantity, concentration, and hazard characteristic of the waste or recyclable material constituents which is meant to be qualitative. ; Testing is

not required to establish the order of importance. It is based upon the best judgment of the notifier.

e. Select from [Appendix 6](#) the one (or, at most, three) major potential hazard(s) presented by the waste or recyclable material. Mark your selection as “H” plus the code number(s) indicated for the corresponding TDGR class in the chart below.

For Classes 2 to 6 and 8 of the TDGR, the corresponding Class is the first “H” code in the IWIC. The subclasses is the corresponding second and third “H” codes (if applicable). For example: for UN1816 the Class is 8 and the first “H” code will be H8. The subclass is 3, therefore the second “H” code would be H3. If there was a sub-subclass, this would be the corresponding third “H” code (except when there is an applicable leachate code (see item 5 below), then H13 would be reported as the second H code, if there is no subclass, or third if there is a subclass. When dealing with cases where there is a leachate code and a sub-subclass, the sub-subclass would be omitted from the IWIC).

For Class 9, the “H” code does not correspond directly as they can be H10, H11, H12 or H13.

- H10 is reserved for substances releasing a gas.
- H11 is reserved almost exclusively to waste or recyclable material containing or composed of asbestos.
- H12 is substances or wastes, that if released, present or may cause immediate or delayed adverse impacts to the environment by means of bioaccumulation or have toxic effects on biotic systems.
- H13 is reserved for substances or wastes producing a leachate, which would have a corresponding “L” code from Schedule 6 of the Regulations (see point 5 below).

<b>TDGR CLASS</b>	<b>"H" ENTRY</b>
<i>Classes 2.1, 2.2, 2.3</i>	<i>H0</i>
<i>Class 3</i>	<i>H3</i>
<i>Class 4.1</i>	<i>H4.1</i>
<i>Class 4.2</i>	<i>H4.2</i>
<i>Class 4.3</i>	<i>H4.3</i>
<i>Class 5.1</i>	<i>H5.1</i>
<i>Class 5.2</i>	<i>H5.2</i>
<i>Class 6.1</i>	<i>H6.1</i>
<i>Class 6.2</i>	<i>H6.2</i>
<i>Class 8</i>	<i>H8</i>
<i>Class 9</i>	<i>H10, H11, H12, or H13</i>

- f. Indicate the one activity that generated most of the hazardous waste or recyclable material from the list in Appendix 7. Mark your selection as "A" plus the code number.
- g. Select the appropriate "Y" code(s) (four codes at the most) from Appendix 8. If none of the "Y" codes apply, mark "Y0". While this code sometimes duplicates information in the "L", "P", "S", "G", and "C" codes, it is required to meet international reporting obligations. Please note that if the number of the "L", "P", "S", "G" code is between 1 and 18, the first "Y" code provided must be the "Y" code of the same number between 1 and 18. For the remaining "Y" codes, if they provide the same information as the "C" codes (see (d) above), they must be provided in the same order as those matching "C" codes.
2. The applicable **code set out in Appendix 9** (corresponding to Annex VIII of the Basel Convention)
  3. For exports to, imports from, or transits through a country that *is* subject to the OECD Decision C(2001) 107/Final, the applicable **code set out in Appendix 10** (corresponding to Part II of Appendix 4 of the OECD Decision)<sup>10</sup>
  4. The **Customs Code (tariff item and statistical suffix)** set out in Customs Tariff Departmental Consolidation, published by the Canada Border Services Agency (CBSA)<sup>11</sup>

Under the Canadian Harmonized System for these codes, the first six digits of the Customs Code are based on the World Customs Organization's Harmonized Commodity Description and Coding System. The seventh and eighth digits are for Canadian trade purposes, and the ninth and tenth are the statistical suffix. This code is also a requirement for reporting purposes under the CBSA and Statistics Canada. The HS codes are updated throughout the year by CBSA, therefore please ensure that you consult the latest CBSA Tariff List on the CBSA website prior to submitting your notification to Environment and Climate Change Canada to ensure your notification includes the most updated HS code.

5. The applicable **identification number or hazardous constituent code** set out in column 1 of Schedule 3, 4, 6, or 7 of the Regulations (e.g. HAZ 1, T1, L1, P001, U001).

6. The **UN number, hazard class, and packing or category** (as applicable) as set out in Schedule 1 of the TDGR.

Schedule 1 of the TDGR is periodically updated by Transport Canada and as such some UN numbers are removed and packing groups may have changed. Please ensure you verify the latest Schedule 1 of the TDGR on the Transport Canada website prior to submitting your notification to Environment and Climate Change Canada to ensure your notification includes the most recent UN number as well as associated class(es), and packing group(s).

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<sup>10</sup> All hazardous wastes for disposal and all hazardous recyclable materials for recycling require a Basel Code; all hazardous recyclable materials for recycling within the OECD require an OECD code.

<sup>11</sup> Custom codes are available through a customs broker, as well as on the CBSA's website at <http://www.cbsa-asfc.gc.ca/trade-commerce/tariff-tarif/menu-eng.html>

Note: In circumstances where waste or recyclable material does not meet the criteria for inclusion in any of the classes 2, 3, 4, 5, 6, 8 and 9 (as per section 2.43) of the TDGR (i.e. there is no applicable UN number based on those hazard criteria), and this waste or recyclable material is considered to be hazardous under the Regulations, one of the following UN numbers applies to the hazardous waste or hazardous recyclable material and must be used<sup>12</sup>:

- For a liquid, the UN number 3082 (shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.),
- For a solid, the UN number 3077 (shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.),
- Either UN number 3082 or UN number 3077 in the case of sludge (using the corresponding shipping name).

Therefore, the hazardous waste or hazardous recyclable material is designated as a dangerous good of Class 9 and applicable TDGR requirements are triggered for its transportation.

7. *The applicable “D” or “R” code from Appendix 2 or 3 (corresponding to annex 1 or 2 of the Regulations), as well as the **name and description of the process** to be employed for every applicable operation associated with that entry*
8. *The **name, quantity, and concentration of any persistent organic pollutant (POP)** set out in Schedule 10 of the Regulations that is contained in the hazardous waste and hazardous recyclable material, if applicable.*

Please ensure that all codes utilized, to describe the hazardous waste or hazardous recyclable material, make sense together because many inconsistencies are still observed during the review process for notifications.

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<sup>12</sup> For more details, see section 2.9.2 of UN Recommendations with respect to these designations and paragraph 2.2(4) of the TDGR and the Advisory Note Regarding recent amendments to TDGR and their impacts on Permits Issued under the Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (EIHWHRMR) and the Interprovincial Movement of Hazardous Waste Regulations (IMHWR) (December 9, 2015) (<https://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=D15CF25D-1>)

## 4.2 Other information required

Paragraph 8(j) and (k) of the Regulations also require that additional information be provided for each type of hazardous waste or hazardous recyclable material recorded on the notice. This information includes:

- *The **total quantity** in kilograms or litres of each hazardous waste or hazardous recyclable material proposed for export, import, or transit.* Note that the same unit of measure must be used in the movement document (kilograms or litres). A common error on the movement document, in particular for shipments from the USA, is to use measures from the Imperial system (pounds and gallons) which don't match the unit of measure used on the notification.
- *For exports for final disposal, **a note in writing explaining the options considered** for reducing or phasing out the export, and the reason the final disposal is taking place outside Canada*

## 5. Classification Examples

### **Example 1: Spent sulphuric acid for import from an OECD member country, destined for recycling**

Under paragraph 8(j) and (k) of the Regulations

1. IWIC: Q7//R06//L40//C23//H8.0//A162//Y34
2. Basel Code: N/A
3. OECD Code: A4090
4. Commodity Code: 2807.00.00.00
5. ID Number: N/A
6. TDGR Information: UN1832, Class 8, PG II
7. R or D Code: R06 – Regeneration of acids or bases
8. POPs: N/A

### **Example 2: Contaminated soil (consisting mainly of arsenic and mercury and a little bit of lead) for import from a non-OECD member country, destined for disposal**

Under paragraph 8(j) and (k) of the Regulations

1. IWIC: Q15//D9//S23//C8+C16+C18//H13//A200//Y24+Y29+Y31
2. Basel Code: A1030
3. OECD Code: N/A
4. Commodity Code: 2620.60.00.00
5. ID Number: L4 (note: the leachate code for arsenic is more important (as the “C” codes order is showing) than the leachate code for lead, so L4 is used instead of L17)
6. TDGR Information: UN3077, Class 9, PG III
7. D Code: D9 – Physical or chemical treatment not otherwise referred to in this schedule, such as calcinations, neutralization, or precipitation
8. POPs: N/A

### **Example 3: Spent lead-acid batteries for export to an OECD member country, destined for recycling**

Under paragraph 8(j) and (k) of the Regulations

1. IWIC: Q6+7//R13//S38//C18+C23//H8//A842//Y31+Y34
2. Basel Code: N/A
3. OECD Code: A1160
4. Commodity Code: 8548.10.90.10
5. ID Number: N/A
6. TDGR Information: UN2794, Class 8, PG N/A
7. R Code: R13 – Accumulation prior to recycling by any operations R1 to R10 or R14. Note that if the “D” or “R” code is an interim operation, the final disposal or recycling operation must also be indicated and linked to the authorized facilities that will perform them – see box 5 on the notice form); R4 – Recovery of metals or metal compounds
8. POPs: N/A

**Example 4: Non-halogenated waste organic solvent containing cyanide for import from non-OECD member country, destined for disposal**

Under paragraph 8(j) and (k) of the Regulations

1. IWIC: Q07//D09//L06//C38+42//H3+6.1//A871//Y06+Y38+Y42
2. Basel Code: A3140 (note: A3140 is used here because it is more consistent with the leachate code "L06" instead of having A4050 match with the C38 code)
3. OECD Code: N/A
4. Commodity Code: 3825.49.00.00
5. ID Number: HAZ4
6. TDGR Information: UN1992, Class 3 (6.1), PG I,II,III
7. D Code: D09 – Physical or chemical treatment not otherwise referred to in this schedule, such as calcinations, neutralization, or precipitation
8. POPs: N/A

## **6. Additional Sources of Information**

**Environment Canada, Waste Reduction and Management Division:**

<http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=678F98BC-1>

**Transport Canada:**

<https://www.tc.gc.ca/eng/menu.htm>

**Basel Convention:**

<http://www.basel.int/>

**Organisation for Economic Co-operation and Development:**

<http://www.oecd.org/env/waste/>

**Canada Border Services Agency:**

<http://www.cbsa-asfc.gc.ca/menu-eng.html>

**Harmonized System Codes:**

<http://www.cbsa-asfc.gc.ca/trade-commerce/tariff-tarif/menu-eng.html>



## 7. Appendices

### **Appendix 1: Reasons Why Wastes or Materials Are Intended for Disposal or Recycling (Table 1 of OECD Decision C(88)90/Final)**

- Q1 Production residues not otherwise specified below
- Q2 Off-specification products
- Q3 Products whose date for appropriate use has expired
- Q4 Materials spilled, lost, or having undergone other mishap, including any materials, equipment, etc. contaminated as a result of the mishap
- Q5 Materials contaminated or soiled as a result of planned actions, (e.g., residues from cleaning operations, packing materials, containers)
- Q6 Unusable parts (e.g., reject batteries, exhausted catalysts)
- Q7 Substances that no longer perform satisfactorily (e.g., contaminated acids, contaminated solvents, exhausted tempering salts)
- Q8 Residues of industrial processes (e.g., slags, still bottoms)
- Q9 Residues from pollution abatement processes ((e.g., scrubber sludges, baghouse dusts, spent filters))
- Q10 Machining/finishing residues (e.g., lathe turning, mill scales)
- Q11 Residues from raw material processing (e.g., mining residues, oil field slop)
- Q12 Adulterated materials (e.g., oils contaminated with polychlorinated biphenyls)
- Q13 Any materials, substances, or products whose use has been banned by law in the country of exportation
- Q14 Products for which there is no further use (e.g., agricultural, household, office, commercial, and shop discards)
- Q15 Materials, substances, or products resulting from remedial actions with respect to contaminated land
- Q16 Any materials, substances, or products the generator or exporter declares to be wastes, and which are not contained in the above categories

## **Appendix 2: Disposal Operations for Hazardous Waste (Schedule 1 of the Regulations)**

- D1 Release into or onto land, other than by any of operations D3 to D5 or D12
- D2 Land treatment, such as biodegradation of liquid or sludges in soil
- D3 Deep injection, such as injection into wells, salt domes, mines or naturally occurring repositories
- D4 Surface impoundment, such as placing liquids or sludges into pits, ponds, or lagoons
- D5 Specially engineered landfilling, such as placement into separate lined cells that are isolated from each other and the environment
- D6 Release into water other than a sea or ocean, other than by operation D4
- D7 Release into a sea or ocean, including sea-bed insertion, other than by operation D4
- D8 Biological treatment not otherwise specified in this schedule
- D9 Physical or chemical treatment not otherwise specified in this schedule, such as calcination, neutralization, or precipitation
- D10 Incineration or thermal treatment on land
- D11 Incineration or thermal treatment at sea
- D12 Permanent storage
- D13 Blending or mixing prior to any of operations D1 to D12 (note: this is an interim operation)
- D14 Repackaging prior to any of operations D1 to D13 (note: this is an interim operation and apply up to D12)
- D15 Release, including the venting of compressed or liquefied gases, or treatment, other than by any of operations D1 to D12
- D16 Testing of a new technology to dispose of hazardous waste
- D17 Interim storage prior to any of operations D1 to D12 (note: this is an interim operation)

### **Appendix 3: Recycling Operations for Hazardous Recyclable Material (Schedule 2 of the Regulations)**

- R1 Use as a fuel in an energy recovery system, where the net heating value of the material is at least 12 780 kJ/kg
- R2 Recovery or regeneration of substances that have been used as solvents
- R3 Recovery of organic substances that have not been used as solvents
- R4 Recovery of metals and metal compounds
- R5 Recovery of inorganic materials other than metals or metal compounds
- R6 Regeneration of acids or bases
- R7 Recovery of components used for pollution abatement
- R8 Recovery of components from catalysts
- R9 Re-refining or re-use of used oil, other than by operation R1
- R10 Land treatment resulting in agricultural or ecological improvement
- R11 Use of residual materials obtained by any of operations R1 to R10 or R14
- R12 Exchange of a recyclable material for another recyclable material prior to recycling by any of operations R1 to R11 or R14 (note: this is an interim operation)
- R13 Accumulation prior to recycling by any of operations R1 to R11 or R14 (note: this is an interim operation)
- R14 Recovery or regeneration of a substance or use or re-use of a recyclable material, other than by any of operations R1 to R10
- R15 Testing of a new technology to recycle a hazardous recyclable material
- R16 Interim storage prior to any of operations R1 to R11 or R14 (note: this is an interim operation)

## **Appendix 4: Generic Types of Potentially Hazardous Wastes<sup>13</sup> (Table 3 of OECD Decision C(94)152/Final)**

1. Clinical wastes from medical care in hospitals, medical centres, and clinics
2. Wastes from the production and preparation of pharmaceutical products
3. Waste pharmaceuticals, drugs, and medicines
4. Wastes from the production, formulation, and use of biocides and phytopharmaceuticals
5. Wastes from the manufacture, formulation, and use of wood-preserving chemicals
6. Wastes from the production, formulation, and use of organic solvents
7. Wastes from heat treatment and tempering operations containing cyanides
8. Waste mineral oils unfit for their originally intended use
9. Waste oil/water, hydrocarbon/water mixtures, and emulsions
10. Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated terphenyls, or polybrominated biphenyls
11. Waste tarry residues arising from refining, distillation, and any pyrolytic treatment
12. Wastes from production, formulation, and use of inks, dyes, pigments, paints, lacquers, and varnishes
13. Wastes from production, formulation, and use of resins, latex, plasticizers, and glues/adhesives
14. Waste chemical substances arising from research and development or teaching activities that are not identified or are new, and whose effects on humans or the environment are unknown
15. Wastes of an explosive nature that are not subject to other legislation
16. Wastes from production, formulation, and use of photographic chemicals and processing materials
17. Wastes resulting from surface treatment of metals and plastics
18. Residues arising from industrial waste-disposal operations

### **Materials containing any of the constituents listed in Table 4 (“C” codes) and consisting of**

19. Animal or vegetable soaps, fats, or waxes
20. Non-halogenated organic substances not employed as solvents
21. Inorganic substances without metals
22. Ashes or cinders
23. Soil, sand, or clay, including dredging spoils
24. Non-cyanidic tempering salts
25. Metallic dust or powder
26. Spent catalyst materials
27. Liquids or sludges containing metals
28. Residue from pollution-control operations, except numbers 29 and 30 below
29. Scrubber sludges
30. Sludges from water-purification plants and wastewater treatment plants
31. Decarbonization residue
32. Ion-exchange column residue
33. Sewage sludges
34. Wastewaters not otherwise taken into account in this Table
35. Residue from the cleaning of tanks or equipment
36. Contaminated equipment
37. Contaminated containers whose contents included one or more of the constituents listed in Table 4 (“C” codes)
38. Batteries and other electrical cells
39. Vegetable oils
40. Materials that have been segregated from households and exhibit any of the characteristics listed in Table 5 (“H” codes)
41. Any other wastes containing any of the constituents listed in Table 4 (“C” codes)

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<sup>13</sup> These may be “L” for liquid, “P” for sludge, “S” for solid, or “G” for gas.

## **Appendix 5: Constituents of Potentially Hazardous Wastes<sup>14</sup> (Table 4 of OECD Decision C(94)152/Final)**

C1	Beryllium, beryllium compounds (Y20)
C2	Vanadium compounds
C3	Hexavalent chromium compounds (Y21)
C4	Cobalt compounds
C5	Nickel compounds
C6	Copper compounds (Y22)
C7	Zinc compounds (Y23)
C8	Arsenic, arsenic compounds (Y24)
C9	Selenium, selenium compounds (Y25)
C10	Silver compounds
C11	Cadmium, cadmium compounds (Y26)
C12	Tin compounds
C13	Antimony, antimony compounds (Y27)
C14	Tellurium, tellurium compounds (Y28)
C15	Barium, barium compounds, excluding barium sulfate
C16	Mercury, mercury compounds (Y29)
C17	Thallium, thallium compounds (Y30)
C18	Lead, lead compounds (Y31)
C19	Inorganic sulphides
C20	Inorganic fluorine compounds, excluding calcium fluoride (Y32)
C21	Inorganic cyanides (Y33)
C22	The following alkaline or alkaline earth metals: lithium, sodium, calcium, potassium, and magnesium in combined form
C23	Acidic solutions or acids in solid form (Y34)
C24	Basic solutions or bases in solid form (Y35)
C25	Asbestos (dust and fibres) (Y36)
C26	Organic phosphorus compounds (Y37)
C27	Metal carbonyls (Y19)
C28	Peroxides
C29	Chlorates
C30	Perchlorates
C31	Azides
C32	Polychlorinated biphenyls, polychlorinated terphenyls, polybrominated biphenyls (Y10)
C33	Pharmaceutical or veterinary compounds
C34	Biocides and phyto-pharmaceutical substances
C35	Infectious substances
C36	Creosotes
C37	Isocyanates, thiocyanates
C38	Organic cyanides (Y38)
C39	Phenols, phenol compounds, including chlorophenols (Y39)
C40	Ethers (Y40)
C41	Halogenated organic solvents (Y41)
C42	Organic solvents, excluding halogenated solvents (Y42)
C43	Organohalogen compounds other than substances referred to in this table (Y45)
C44	Aromatic compounds, polycyclic and heterocyclic organic compounds
C45	Organic nitrogen compounds, especially aliphatic amines
C46	Organic nitrogen compounds, especially aromatic amines
C47	Substances of an explosive character (Y15)
C48	Sulphur organic compounds
C49	Any congener of polychlorinated dibenzo-furan (Y43)
C50	Any congener of polychlorinated dibenzo-p-dioxin (Y44)
C51	Hydrocarbons and their oxygen, nitrogen, and sulphur compounds that are not

<sup>14</sup> Where applicable, correspondence with Table Y is indicated in brackets after the constituent.

otherwise taken into account in this Table

## Appendix 6: List of Hazardous Characteristics<sup>15</sup> (Table 5 of OECD Decision C(94)152/Final)

- H3 **Flammable Liquids.** "Flammable" has the same meaning as "inflammable". Flammable liquids are liquids, mixtures of liquids, and liquids containing solids in solution or suspension that give off a flammable vapour at temperatures of not more than 60.5°C, closed-cup test, or not more than 65.6°C, open-cup test (since the results of open- and closed-cup tests are not strictly comparable and even individual results by the same test are often variable, regulations varying from the above figures to make allowance for such differences would be within the spirit of this definition). Flammable liquids include paints, varnishes, lacquers, etc., but do not include substances or wastes otherwise classified on account of their dangerous characteristics.
- H4.1 **Flammable Solids.** Solids or waste solids (other than those classed as explosives) that, under conditions encountered in transport, are readily combustible or may cause or contribute to fire through friction.
- H4.2 **Substances or Wastes Liable to Spontaneous Combustion.** Substances or wastes that are liable to spontaneous heating under normal conditions encountered in transport or to heating up in contact with air, and being liable to catch fire.
- H4.3 **Substances or Wastes That, in Contact with Water, Emit Flammable Gases.** Substances or wastes that, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.
- H5.1 **Oxidizing.** Substances or wastes that, while in themselves are not necessarily combustible, may, generally by yielding oxygen, cause or contribute to the combustion of other materials.
- H5.2 **Organic Peroxides.** Organic substances or wastes containing the bivalent-O-O- structure that may undergo exothermic self- accelerating decomposition due to their thermal instability.
- H6.1 **Poisonous (Acute).** Substances or wastes liable to cause death, serious injury, or harm human health if swallowed, inhaled, or in contact with skin.
- H6.2 **Infectious Substances.** Substances or wastes containing viable micro-organisms or their toxins that are known or suspected to cause disease in animals or humans.
- H8 **Corrosives.** Substances or wastes that, by chemical action, cause severe damage when in contact with living tissue or, in the case of leakage, materially damage or destroy other goods or the means of transport. They may also cause other hazards.
- H10 **Liberation of Toxic Gases in Contact with Air or Water.** Substances or wastes that, by interaction with air or water, are liable to give off toxic gases in dangerous quantities.
- H11 **Toxic (Delayed or Chronic).** Substances or wastes that, if they are inhaled, ingested, or penetrate the skin, may involve delayed or chronic effects, including carcinogenicity.
- H12 **Ecotoxic.** Substances or wastes that, if released, present or may cause immediate or delayed adverse impacts to the environment by means of bioaccumulation or have toxic effects on biotic systems.
- H13 **Leachate.** Substances or wastes capable, by any means after disposal, of yielding another material (e.g., leachate that possesses any of the characteristics listed above).

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<sup>15</sup> Code numbers correspond to the hazard class numbering system in the *United Nations Recommendations on the Transport of Dangerous Goods (Orange Book)* for H3 through H9; omissions of H2, H7, and H9 are deliberate.

## Appendix 7: Activities That May Generate Potentially Hazardous Wastes (Table 6 of OECD Decision C(94)152/Final)

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### **Agriculture - Farming Industry**

#### **A100 Agriculture, forest management**

A101 Cultivation

A102 Animal husbandry

A103 Forest management and forest exploitation (lumbering)

#### **A110 Animal and vegetable products from the food sector**

A111 Meat industry, slaughterhouses, butchery

A112 Dairy industry

A113 Animal and vegetable oil and grease industry

A114 Sugar industry

A115 Others

#### **A120 Drink industry**

A121 Distillation of alcohol and spirits

A122 Brewing of beer

A123 Manufacture of other drinks

#### **A130 Manufacture of animal feed**

### **Energy**

#### **A150 Coal industry**

A151 Production and preparation of coal and coal products

A152 Coking operations

#### **A160 Petroleum industry**

A161 Extraction of petroleum and natural gas

A162 Petroleum refining

A163 Storage of petroleum and products derived from refining of natural gas

#### **A170 Production of electricity**

A171 Central thermal facilities

A172 Central hydraulic facilities

A173 Central nuclear facilities

A174 Other central electricity facilities

#### **A180 Production of water**

### **Metallurgy - Mechanical and Electrical Engineering**

#### **A200 Extraction of metallic ores**

A210 Ferrous metallurgy

A211 Cast iron production (coke oven)

A212 Raw steel production (pig iron)

A213 Primary steel transformation (rolling mills)

#### **A220 Non-ferrous metallurgy**

A221 Production of alumina

A222 Aluminium metallurgy

A223 Metallurgy of lead and zinc

A224 Metallurgy of precious metals

A225 Metallurgy of other non-ferrous metals

A226 Ferro-alloy industry

A227 Manufacture of electrodes

#### **A230 Foundry and metalworking operations**

A231 Ferrous metal foundries

A232 Non-ferrous metal foundries  
A233 Metalworking (not including machining)  
**A240 Mechanical, electrical and electronic construction**  
A241 Machining  
A242 Thermal treatment  
A243 Surface treatment  
A244 Application of paint  
A245 Assembly, wiring  
A246 Production of batteries and dry cells  
A247 Production of electrical wires and cables (cladding, plating, insulation).  
A248 Production of electronic components

**Non-Metallic Minerals - Construction Materials - Ceramics - Glass**

**A260 Mining and quarrying of non-metallic minerals**  
**A270 Construction materials, ceramics, glass**  
A271 Production of lime, cement and plaster  
A272 Fabrication of ceramic products  
A273 Fabrication of products containing asbestos cement  
A274 Production of other construction materials  
A275 Glass industry  
**A280 Building, building sites, landscaping**

**Primary Chemical Industry**

**A300 Production of primary chemicals and chemical feedstocks**  
A301 Chlorine industry  
A351 Fertilizer fabrication  
A401 Other manufacturing generators of primary inorganic industrial chemicals  
A451 Petroleum and coal industry  
A501 Manufacture of basic plastic materials  
A551 Other primary organic chemical manufacture  
A601 Chemical treatment of fats; fabrication of basic substances for detergents  
A651 Fabrication of pharmaceuticals, pesticides, biocides, weed killers  
A669 Other manufacture of finished chemicals

**Industries Producing Products Based upon Primary Chemicals**

**A700 Production of inks, varnish, paints, glues**  
A701 Production of ink  
A702 Production of paint  
A703 Production of varnish  
A704 Production of glue  
**A710 Fabrication of photographic products**  
A711 Production of photosensitive plates  
A712 Fabrication of products for photographic treatments  
**A720 Perfume industry and fabrication of soap and detergent products**  
A721 Fabrication of soap products  
A722 Fabrication of detergent products



A723 Fabrication of perfume products

***A730 Finished rubber and plastic materials***

A731 Rubber industry

A732 Finished plastic materials

***A740 Fabrication of products based upon asbestos***

***A750 Production of powders and explosives***

**Textiles and Leathers - Various Wood Based and Furniture Industries**

***A760 Textile and clothing industry***

A761 Combing and carding of textile fibres

A762 Threading, spinning, weaving

A763 Bleaching, dyeing, printing

A764 Clothing manufacture

***A770 Leather and hide industry***

A771 Tanneries, tanning

A772 Fur trade

A773 Manufacture of shoes and other leather products

***A780 Wood and furniture industry***

A781 Sawmills, production of wood panels

A782 Manufacture of wood and furniture products

***A790 Various related industries***

**Paper - Cardboard - Printing**

***A800 Paper and cardboard industry***

A801 Fabrication of paper pulp

A802 Manufacture of paper and cardboard

A803 Finished goods of paper and cardboard

***A810 Printing, publishing, photographic laboratories***

A811 Printing, publishing

A812 Photographic laboratories

**Commercial Services**

***A820 Laundries, bleaching services, dyers***

***A830 Business enterprise***

***A840 Transport, automobile dealers and repair facilities***

A841 Automobile dealers and automobile repair facilities

A842 Transportation

***A850 Hotels, cafés, restaurants***

**General Services**

***A860 Health***

A861 Health (Hospitals, medical centres, nursing homes, laboratories)

***A870 Research***

A871 Research (including research laboratories)

***A880 Administrative activities, offices***

**Households**

***A890 Households***

**Pollution Control - Waste Disposal**

***A900 Cleaning and maintenance of public areas***

***A910 Urban water treatment facilities***

***A920 Urban waste treatment***

***A930 Treatment of industrial effluents and wastes***

A931 Incineration

A932 Physico-chemical treatment

A933 Biological treatment

A934 Solidification of wastes

A935 Collection and/or pre-treatment of wastes

A936 Landbased disposal above, on or below the surface

***Regeneration - Recovery***

***A940 Regeneration activities***

A941 Regeneration of oils

A942 Regeneration of solvents

A943 Regeneration of ion exchange resins

***A950 Recovery activities***

## **Appendix 8: Core List of Waste Streams to Be Controlled under the Basel Convention and the OECD Decision C(2001)107/Final**

Y1	Clinical wastes from medical care in hospitals, medical centres, and clinics
Y2	Wastes from the production and preparation of pharmaceutical products
Y3	Waste pharmaceuticals, drugs, and medicines
Y4	Wastes from the production, formulation, and use of biocides and phytopharmaceuticals
Y5	Wastes from the manufacture, formulation, and use of wood-preserving chemicals
Y6	Wastes from the production, formulation, and use of organic solvents
Y7	Wastes from heat treatment and tempering operations containing cyanides
Y8	Waste mineral oils unfit for their originally intended use
Y9	Waste oil/water, hydrocarbon/water mixtures, and emulsions
Y10	Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated terphenyls, and polybrominated biphenyls
Y11	Waste tarry residues arising from refining, distillation, and any pyrolytic treatment
Y12	Wastes from production, formulation, and use of inks, dyes, pigments, paints, lacquers, and varnishes
Y13	Wastes from production, formulation, and use of resins, latex, plasticizers, and glues/adhesives
Y14	Waste chemical substances arising from research and development or teaching activities that are not identified or are new and whose effects on humans or the environment are not known
Y15	Wastes of an explosive nature not subject to other legislation
Y16	Wastes from the production, formulation, and use of photographic chemicals and processing materials
Y17	Wastes resulting from the surface treatment of metals and plastics
Y18	Residues arising from industrial waste-disposal operations

### **Wastes having, as constituents:**

Y19	Metal carbonyls
Y20	Beryllium, beryllium compounds
Y21	Hexavalent chromium compounds
Y22	Copper compounds
Y23	Zinc compounds
Y24	Arsenic, arsenic compounds
Y25	Selenium, selenium compounds
Y26	Cadmium, cadmium compounds
Y27	Antimony, antimony compounds
Y28	Tellurium, tellurium compounds
Y29	Mercury, mercury compounds
Y30	Thallium, thallium compounds
Y31	Lead, lead compounds
Y32	Inorganic fluorine compounds, excluding calcium fluoride
Y33	Inorganic cyanides
Y34	Acidic solutions or acids in solid form
Y35	Basic solutions or bases in solid form
Y36	Asbestos (dust and fibres)
Y37	Organic phosphorous compounds
Y38	Organic cyanides
Y39	Phenols, phenol compounds, including chlorophenols
Y40	Ethers
Y41	Halogenated organic solvents
Y42	Organic solvents, excluding halogenated solvents
Y43	Any congener of polychlorinated dibenzo-furan
Y44	Any congener of polychlorinated dibenzo-p-dioxin

Y45      Organohalogen compounds other than substances referred to in this table (e.g., Y39, Y41, Y42, Y43, Y44)

**Wastes requiring special consideration:**

Y46      Wastes collected from households

Y47      Residues arising from the incineration of household wastes

## **Appendix 9: Annex VIII of the Basel Convention**

### **A1 Metals and metal-bearing wastes**

A1010 Metal wastes and wastes consisting of alloys of any of the following:

Antimony

Arsenic

Beryllium

Cadmium

Lead

Mercury

Selenium

Tellurium

Thallium

but excluding such wastes listed specifically on list B.

A1020 Wastes (excluding metal wastes in massive form) having as constituents or contaminants any of the following:

Antimony, antimony compounds

Beryllium, beryllium compounds

Cadmium, cadmium compounds

Lead, lead compounds

Selenium, selenium compounds

Tellurium, tellurium compounds

A1030 Wastes having as constituents or contaminants any of the following:

Arsenic, arsenic compounds

Mercury, mercury compounds.

Thallium, thallium compounds

- A1040 Wastes having as constituents any of the following:
  - Metal carbonyls
  - Hexavalent chromium compounds
- A1050 Galvanic sludges
- A1060 Waste liquors from the pickling of metals
- A1070 Leaching residues from zinc processing, dust, and sludges such as jarosite, hematite, etc.
- A1080 Waste zinc residues not included on list B, containing lead and cadmium in concentrations sufficient to exhibit Annex-III characteristics
- A1090 Ashes from the incineration of insulated copper wire
- A1100 Dusts and residues from gas cleaning systems of copper smelters
- A1110 Spent electrolytic solutions from copper electrorefining and electrowinning operations
- A1120 Waste sludges, excluding anode slimes, from electrolyte purification systems in copper electrorefining and electrowinning operations
- A1130 Spent etching solutions containing dissolved copper
- A1140 Waste cupric chloride and copper cyanide catalysts
- A1150 Precious metal ash from incineration of printed circuit boards not included on list B
- A1160 Waste lead-acid batteries, whole or crushed
- A1170 Unsorted waste batteries not specified on list B, containing Annex-I constituents to an extent to render them hazardous. This does not include mixtures of batteries that are only on list B
  
- A1180 Waste electrical and electronic assemblies or scrap-containing components, such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes, and other activated glass and PCB-capacitors, or waste contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) to the extent that it possesses any of the characteristics contained in Annex III (note the related entry on list B B1110)

**A2 Wastes containing principally inorganic constituents that may contain metals and organic materials**

- A2010 Glass waste from cathode-ray tubes and other activated glasses
- A2020 Waste inorganic fluorine compounds in the form of liquids or sludges, excluding such wastes specified on list B
- A2030 Waste catalysts, excluding such wastes specified on list B
- A2040 Waste gypsum arising from chemical industry processes that contains Annex-I constituents to the extent that it exhibits an Annex III hazardous characteristic (note the related entry on list B B2080)
- A2050 Waste asbestos (dusts and fibres)
- A2060 Coal-fired power plant fly-ash containing Annex-I substances in concentrations sufficient to exhibit Annex-III characteristics (note the related entry on list B B2050)

**A3 Wastes containing principally organic constituents that may contain metals and inorganic materials**

- A3010 Wastes from the production or processing of petroleum coke and bitumen
- A3020 Waste mineral oils unfit for their originally intended use
- A3030 Wastes that contain, consist of or are contaminated with leaded anti-knock compound sludges
- A3040 Waste thermal (heat transfer) fluids
- A3050 Wastes from the production, formulation, and use of resins, latex, plasticizers, and glues/adhesives, excluding such wastes specified on list B (note the related entry on list B B4020)
- A3060 Waste nitrocellulose
- A3070 Waste phenols and phenol compounds, including chlorophenol, in the form of liquids or sludges
- A3080 Waste ethers, not including those specified on list B
- A3090 Waste leather dust, ash, sludges, and flours containing hexavalent chromium compounds or biocides (note the related entry on list B B3100)
- A3100 Waste paring and other waste of leather or of composition leather not suitable for the manufacture of leather articles, containing hexavalent chromium compounds or biocides (note the related entry on list B B3090)
- A3110 Fellmongery wastes containing hexavalent chromium compounds or biocides or infectious substances (note the related entry on list B B3110)
- A3120 Fluff-light fraction from shredding
- A3130 Waste organic phosphorous compounds
- A3140 Waste non-halogenated organic solvents, excluding such wastes specified on list B
- A3150 Waste halogenated organic solvents
- A3160 Waste halogenated or unhalogenated non-aqueous distillation residues arising from organic solvent recovery operations
- A3170 Wastes arising from the production of aliphatic halogenated hydrocarbons, such as chloromethane, dichloro-ethane, vinyl chloride, vinylidene chloride, allyl chloride, and epichlorhydrin
- A3180 Wastes, substances, and articles containing, consisting of, or contaminated with polychlorinated biphenyls, polychlorinated terphenyls, polychlorinated naphthalene, polybrominated biphenyls, or any other polybrominated analogues of these compounds, at a concentration of 50 mg/kg or more
- A3190 Waste tarry residues (excluding asphalt cements) arising from the refining, distillation, and any pyrolytic treatment of organic materials

**A4 Wastes that may contain either inorganic or organic constituents**

- A4010 Wastes from the production, preparation, and use of pharmaceutical products, excluding such wastes specified on list B
- A4020 Clinical and related wastes; that is, wastes arising from medical, nursing, dental, veterinary, or similar practices, and wastes generated in hospitals or other facilities during the investigation or treatment of patients or during research projects
- A4030 Wastes from the production, formulation, and use of biocides and phytopharmaceuticals, including waste pesticides and herbicides that are off-specification, outdated, or unfit for their originally intended use
- A4040 Wastes from the manufacture, formulation, and use of wood-preserving chemicals
- A4050 Wastes that contain, consist of, or are contaminated with any of the following:  
Inorganic cyanides, excluding precious-metal-bearing residues in solid form that contain traces of inorganic cyanides  
Organic cyanides
- A4060 Waste oil/water and hydrocarbon/water mixtures, emulsions
- A4070 Wastes from the production, formulation, and use of inks, dyes, pigments, paints, lacquers, and varnishes, excluding any such waste specified on list B (note the related entry on list B B4010)
- A4080 Wastes of an explosive nature, excluding such wastes specified on list B
- A4090 Waste acidic or basic solutions other than those specified in the corresponding entry on list B (note the related entry on list B B2120)
- A4100 Wastes from industrial pollution-control devices for the cleaning of industrial off-gases, excluding such wastes specified on list B
- A4110 Wastes that contain, consist of, or are contaminated with any of the following:  
Any congener of polychlorinated dibenzo-furan  
Any congener of polychlorinated dibenzo-dioxin
- A4120 Wastes that contain, consist of, or are contaminated with peroxides
- A4130 Waste packages and containers containing Annex I substances in concentrations sufficient to exhibit Annex-III hazard characteristics
- A4140 Wastes consisting of or containing off-specification or outdated chemicals corresponding to Annex-I categories and exhibiting Annex-III hazard characteristics
- A4150 Waste chemical substances arising from research and development or teaching activities that are not identified or are new, and whose effects on human health or the environment are not known
- A4160 Spent activated carbon not included on list B (note the related entry on list B B2060)



## Appendix 10. Part II of Appendix 4 of OECD Decision C(2001)107/Final

The following wastes will also be subject to the Amber control procedure:

### ***Metal-bearing wastes***

<b>AA010</b>	261900	Dross, scalings, and other wastes from the manufacture of iron and steel
<b>AA060</b>	262050	Vanadium ashes and residues
<b>AA190</b>	810420	Magnesium waste and scrap that is flammable, pyrophoric, or emits, upon contact with water, flammable gases in dangerous quantities
	ex 810430	

### ***Wastes containing principally inorganic constituents that may contain metals and organic materials***

<b>AB030</b>		Wastes from non-cyanide-based systems that arise from the surface treatment of metals
<b>AB070</b>		Sands used in foundry operations
<b>AB120</b>	ex 281290 ex 3824	Inorganic halide compounds, not specified or included elsewhere
<b>AB130</b>		Used blasting grit
<b>AB150</b>	ex 382490	Unrefined calcium sulphite and calcium sulphate from flue gas desulphurization

### ***Wastes containing principally organic constituents that may contain metals and inorganic materials***

<b>AC020</b>		Bituminous materials (asphalt waste) not specified or included elsewhere
<b>AC060</b>	ex 381900	Hydraulic fluids
<b>AC070</b>	ex 381900	Brake fluids
<b>AC080</b>	ex 382000	Antifreeze fluids
<b>AC150</b>		Chlorofluorocarbons
<b>AC160</b>		Halons
<b>AC170</b>	ex 440310	Treated cork and wood wastes
<b>AC250</b>		Surface active agents (surfactants)
<b>AC260</b>	ex 3101	Liquid pig manure, faeces
<b>AC270</b>		Sewage sludge

### ***Wastes that may contain either inorganic or organic constituents***

<b>AD090</b>	ex 382490	Wastes from the production, formulation, and use of reprographic and photographic chemicals and materials not specified or included elsewhere
<b>AD100</b>		Wastes from non-cyanide based systems that arise from the surface treatment of plastics
<b>AD120</b>	ex 391400 ex 3915	Ion-exchange resins
<b>AD150</b>		Naturally occurring organic material used as a filter medium (such as bio-filters)

### ***Wastes containing principally inorganic constituents that may contain metals and organic materials***

<b>RB020</b>	ex 6815	Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos
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