

wastes.

**Article 2.-** This Decision takes effect 60 days after its signing. The previous stipulations which are contrary to the Regulation promulgated together with this Decision are now annulled.

The Minister of Science, Technology and Environment shall have to organize and guide the implementation of this Decision.

**Article 3.-** The ministers, the heads of the ministerial-level agencies, the heads of the agencies attached to the Government and the presidents of the provinces and centrally-run cities shall have to implement this Decision.

*For the Prime Minister*  
*Deputy Prime Minister*  
**PHAM GIA KHIEM**

## **THE REGULATION ON MANAGEMENT OF HAZARDOUS WASTES**

*(Promulgated together with Decision No. 155/1999/QĐ-TTg of July 16, 1999 of the Prime Minister)*

### *Chapter I*

#### **GENERAL PROVISIONS**

**Article 1.-** This Regulation prescribes the management of hazardous wastes (hereafter abbreviated to HWs) in order to prevent and minimize the occurrence of hazardous effects on the environment and human health.

**Article 2.-** This Regulation shall apply to organizations and individuals that conduct activities on the Vietnamese territory, relating to the HW generation, collection, transportation, transit, keeping, treatment and disposal.

This Regulation shall also apply to foreign organizations and individuals that conduct activities on the Vietnamese territory, relating to the HW generation, collection, transportation, transit, keeping, treatment and disposal, except otherwise provided for by international agreements which the Socialist Republic of Vietnam has signed or acceded to.

**Article 3.-** In this Regulation, the following terms and expressions shall be construed as follows:

## **THE PRIME MINISTER**

### **DECISION No. 155/1999/QĐ-TTg OF JULY 16, 1999 PROMULGATING THE REGULATION ON MANAGEMENT OF HAZARDOUS WASTES**

#### **THE PRIME MINISTER**

*Pursuant to the Law on Organization of the Government of September 30, 1992;*

*Pursuant to the Law on Environmental Protection of December 27, 1993;*

*At the proposal of the Minister of Science, Technology and Environment,*

#### **DECIDES:**

**Article 1.-** To promulgate together with this Decision the Regulation on management of hazardous

1. *Waste* shall be construed according to Clause 2, Article 2 of the 1993 Law on Environmental Protection;

2. *Hazardous waste* is waste containing substances or compounds that bear one of the hazard-causing properties (flammable, explosive, poisonous, corrosive, infectious and other hazardous properties) or may interact with other substances to cause hazards to the environment and human health. The list of HWs is specified in *Annex 1* of this Regulation. This list is drawn up by the central-level State management agency in charge of environmental protection;

3. *HW management* includes activities of controlling HWs throughout the process, from the generation to collection, transportation, transit, keeping, treatment and disposal of HWs;

4. *State management agency(ies) in charge of environmental protection* (hereafter abbreviated to SMAE) shall be the Ministry of Science, Technology and Environment at the central level, or the People's Committees of the provinces and centrally-run cities at local level;

5. *HW source generator* is an organization or individual that owns or manages an establishment where HW is generated;

6. *HW collector and transporter* is an organization or individual that registers to carry out the HW collection and transportation;

7. *HW keeper* is an organization or individual permitted to keep HW;

8. *HW treater and/or disposer* is an organization or individual permitted to carry out the HW treatment and/or disposal;

9. *HW collection* is the HW collection, classification, packaging and temporary keeping at the approved places or establishments;

10. *HW keeping* is the keeping and preservation of HW for a given period of time under necessary conditions to ensure that HW does not leak, disperse or emit to the environment until such HW is transported to the approved treatment or destruction places or establishments;

11. *HW transportation* is the process of transporting HW from the generating places to the keeping, treatment or disposal places;

12. *HW treatment* is the process wherein technologies or technical solutions (including the waste reclamation, recycling, reuse or incineration) are used to change the characteristics and composition

of hazardous waste, thus precluding or diminishing the level of hazards caused to the environment and human health;

13. *HW disposal* is the process wherein technologies are used to isolate (including the burial) HWs, thus incapacitating such waste from causing hazards to the environment and human health;

14. *HW management register* shall be granted by the SMAE to the HW source generators;

15. *Operation license for HW collection, transportation, keeping, treatment or disposal* (hereafter referred to the environment license) shall be granted by the SMAE, clearly specifying the requirements, responsibilities and conditions regarding the environment for the HW collection, transportation, keeping, treatment or disposal;

16. *Approved place or establishment* is a place where HW is kept, treated or disposed, which is approved by the SMAE;

17. *HW-related documents* are dossiers accompanying HW when such HW is collected and transported from discharge sources to the keeping, treatment or disposal places or establishments.

*Article 4.-* The management of HW derived from activities related to the domains of petroleum, healthcare, use of radioactive, flammable or explosive substances, besides complying with this Regulation's provisions, shall have to comply with the specific regulations on activities in these domains.

*Article 5.-* Disputes between parties, of which one party is a foreign organization or individual over the application of this Regulation's provisions, shall be settled according to Vietnamese law. In cases where an international agreement which the Socialist Republic of Vietnam has signed or acceded to contains provisions different from those of this Regulation, such international agreement's provisions shall apply.

*Article 6.-*

1. The HW source generators shall have to register their operations with the SMAE in order to be granted the HW management registers;

2. The HW collectors, transporters, keepers, treaters and disposers shall have to apply for operation licenses. The places and facilities for HW collection, transportation, keeping, treatment and disposal shall be prescribed by the SMAE.

*Article 7.-* The HW source generators, collectors, transporters, keepers, treaters and disposers shall have to observe the regime of periodically reporting the

HW management to the SMAE, keep diaries of HW dossier management at the concerned establishments (according to *Annex 5* enclosed herewith), and be subject to the inspection by the specialized environment inspectorate and the inspection by the SMAE.

**Article 8.-** The procedures for granting HW management registers and licenses for HW collection, transportation, keeping, treatment and disposal:

1. The HW source generators shall have to apply for HW management registers at the central- or local-level SMAE;

2. Within 45 days after receiving the complete and valid registration dossiers, the SMAE shall have to organize the evaluation of such dossiers and grant HW management registers. In cases of refusal, it shall have to reply in writing, clearly stating the reasons therefor;

3. HW collectors, transporters, keepers, treaters and disposers shall have to file applications for licenses at the central- or local-level SMAE;

4. Within 45 days after receiving the complete and valid registration dossiers, the SMAE shall have to organize the evaluation of such dossiers and grant licenses. In case of refusal, it shall have to reply in writing, clearly stating the reasons therefor;

## **Chapter II**

### **RESPONSIBILITIES OF HAZARDOUS WASTE SOURCE GENERATORS**

**Article 9.-** Responsibilities of HW source generators at their production and/or business establishments:

1. To minimize and classify HWs right from their discharge sources;

2. To package HWs according to their categories in proper packing or containers, which satisfy the technical safety requirements, and the signs and marks thereon must be clear as prescribed by the competent State agency(ies);

3. To keep HWs safely within their production and/or business areas before transferring such HWs to the collectors, transporters, keepers, treaters and disposers; the HW keeping must satisfy the following requirements:

a/ Satisfying the HW management requirements prescribed by the SMAE (fences, signboards and other guaranty measures) at the HW keeping areas:

b/ Not placing HW together with non-hazardous

waste (including solid and liquid wastes), and having to isolate it from other HWs;

c/ Having plans for incident prevention and combat, and ensuring safety in the storing areas.

**Article 10.-** HWs source generators shall have to abide by the following:

1. When they are incapable of collecting, transporting, treating or disposing by themselves HWs arising at their own establishments, they shall have to sign contracts with HW collectors, transporters, treaters and disposers;

2. HWs shall be transferred only to the licensed collectors, transporters, keepers, treaters and disposers;

3. To fill and sign on part I of HW documents, and request the collectors and transporters to fill and sign on part II of such HW documents. Each HW document shall be made in 05 copies. The HW source generator shall keep 01 copy, the other 04 copies shall be handed to the collector and transporter;

4. To inspect and confirm HWs in the course of collection, transportation, keeping, treatment and disposal of such HW to/at the places or establishments as specified in the contracts;

5. To explain and provide relevant documents to the competent State agencies when they are subject to inspection by such agencies;

6. In cases where the HW source generators collect, transport, keep, treat and/or dispose HWs by themselves, they shall also have to apply for permits and abide by all regulations in Chapters III and IV of this Regulation.

## **Chapter III**

### **RESPONSIBILITIES OF HAZARDOUS WASTE COLLECTORS AND TRANSPORTERS**

**Article 11.-** The HW collectors and transporters must have specialized facilities and means ensuring the following technical safety requirements:

1. Being mechanically and chemically firm in the course of operation;

2. Not causing leakage, dispersal or loss of HWs into the environment, not intermingling different kinds of HW, not being made of materials that can interact with HWs;

3. Being equipped with alarm devices and equipment for handling unexpected incidents

occurring in the course of operation;

4. Having signboards as prescribed.

**Article 12.-** Responsibilities of HW collectors and transporters:

1. To collect and transport HWs according to volume and categories inscribed in accompanying HW documents;

2. To complete the procedures related to the HW documents: filling and signing on part II of HW documents, requesting the keeper, treater and disposer to sign on part III of the HW documents; the HW collector and transporter shall keep 01 copy and send other 03 copies to the keeper, treater and disposer;

3. To transfer HWs to the keeper, treater and disposer named in the HW documents;

4. To submit reports made according to the set form to the SMAE within the prescribed time limit.

**Article 13.-** In case of an incident, the collector and transporter shall have to:

1. Take urgent measures to minimize damage to the environment and human health;

2. Promptly report to the SMAE and the People's Committee of the locality where the incident occurs for direction and coordinated handling thereof; and at the same time fully, accurately and promptly provide necessary information on the incident to the SMAE and the People's Committee of the locality where the incident occurs, and follow their instructions to overcome the incident;

3. Expeditiously tackle the incident caused by HWs, if damage is caused to human health, property and environment, the compensation therefor must be made as prescribed by law;

4. In cases where HWs must be transported out of incident area, the local SMAE's permission is required.

**Article 14.-** The transboundary transportation of HWs shall have to comply with the provisions of the Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989 Basel Convention), more concretely as follows:

1. The HW transit through the Vietnamese territory, including the inland waters and territorial waters, must be agreed in writing by the central-level SMAE and subject to the inspection and supervision by the concerned agencies in strict compliance with the Vietnamese legislation on goods in transit. The transportation of HWs through Vietnam's exclusive economic zones must be notified in advance to the

Vietnamese central-level SMAE;

2. Any organizations and individuals that wish to transit HWs through the Vietnamese territory shall have to file permit applications to the central-level SMAE. Each permit application must contain the following principal details:

- a/ The place of departure and the place of destination of HWs;

- b/ The date, time, volume and category(ies) of HWs or other wastes intended to be transited through the Vietnamese territory;

- c/ Certification by the importing country that the import of such HW volume and category(ies) does not breach its national law or international conventions which such country has signed or acceded to;

- d/ Information related to the exporter, transporter, treater and disposer as well as to their licensed operation facilities;

- e/ Information related to the procedures for handling urgent incidents occurring during the transit;

- f/ Information on insurance and other relevant information;

- g/ Within 60 days after receiving the application, the central-level SMAE shall have to grant permit, in case of refusal, it shall have to reply the applicant in writing, clearly stating the reason(s) therefor;

3. In cases where they are permitted to transit HWs, the HW transporting organizations and individuals shall have to abide by the following regulations:

- a/ To package HWs in proper containers and affix signs thereon in conformity with the international standards;

- b/ To ensure that HWs shall not be lost at border-gates and during the transportation en route;

4. All acts of transiting HWs in contravention of the provisions in permits or without permits shall be considered illegal acts of transporting HWs and shall be handled according to law;

5. In cases where a leakage, dispersion or loss of HWs occurs during the transit, the HW transiting organizations or individuals shall have to promptly report it to the central-level or local SMAEs, and simultaneously comply with the provisions in Article 13 of this Regulation.

#### *Chapter IV*

#### **RESPONSIBILITIES OF HAZARDOUS WASTE KEEPERS, TREATERS AND DISPOSERS**

**Article 15.-** The responsibilities of hazardous

waste keepers, treaters and disposers:

1. To make reports on environmental impact assessment and submit them to the competent SMAE. To use facilities and equipment for keeping and technology(ies) for treating and disposing HWs in strict accordance with the provisions of their operation licenses granted by the SMAE;

2. To receive HWs from their source generators, collectors and transporters on the basis of contracts signed between the two parties, enclosed with all required HW documents;

3. To adopt plans and have appropriate equipment satisfying the requirements for incident prevention and rescue;

4. To finalize HW documents, then keep 01 copy and send one copy to the HW source generator and another to the HW collector/transporter;

5. To report to the competent SMAE information related to the HW management;

6. To train technicians and technical personnel qualified for the keeping, treating and disposing of HWs.

**Article 16.-** The HW treaters and disposers shall have to abide by the following regulations:

1. Not to bury HWs together with non-hazardous wastes;

2. To bury HWs only at the prescribed places;

3. The HW burial sites must meet the environmental criteria and technical requirements guided and inspected by the SMAE;

4. Not to bury HWs with a volume exceeding the HW burial site's capacity already prescribed in their licenses;

5. Not to discharge HWs into/onto such environmental constituents as air, earth and water.

**Article 17.-** In the course of HW treatment and disposal, the treaters and disposers shall have to fully comply with the provisions in the environmental impact assessment reports. All kinds of waste gases, waste water, sludge, ash and slag must be observed, gauged and decomposed, monitored and recorded in diaries and treated to meet the Vietnamese standards (hereafter abbreviated as the VS). In case of failure to achieve the VS, the treaters shall have to:

1. Take measures to upgrade their systems for treating waste gases, waste water, sludge, ash and slag within the time limit prescribed by the SMAE;

2. Bury wastes, which are treated but not up to the VS, according to the HW burial order at the prescribed burial sites;

3. The HW collectors, transporters, keepers, treaters and disposers must not dilute HW or mix HW with non-hazardous waste.

**Article 18.-** In cases where an incident occurs, the keeper, treater and disposer shall have to:

1. Take urgent measures to minimize damage to the environment and human health;

2. Promptly report to the SMAE and local People's Committee for direction and coordinated handling; and at the same time fully, accurately and promptly provide necessary information on the incident to the SMAE and the People's Committee of the locality where the incident occurs, and follow their instructions to overcome the incident;

3. Expeditiously overcome the incident caused by HWs, if damage is caused to the human health, property and environment, the compensation therefor must be made as prescribed by law;

4. In cases where HWs must be transported out of incident area, the local SMAE's permission is required.

**Article 19.-** In cases where their operations are ceased, the HW keeper, treater and disposer shall have to:

1. Promptly report to the central-level and local SMAEs and the People's Committees of all levels on the reasons for and duration of operation cessation;

2. Submit the environmental protection plan after the keeping, treating or disposing establishment ceases its operation to the SMAE and the People's Committee of the province or centrally-run city. The environmental protection plan shall have the following contents:

a/ Technological solutions to the environmental pollution;

b/ Measures to improve and use land after the operation cessation;

c/ Observation requirements and solutions after the operation cessation.

3. Deal with other consequences;

4. The central- or local-level SMAE shall, within its assigned competence, have to appraise and advise the People's Committee of the province or centrally-run city on the decision to cease the operations of HW keeping, treating and disposing establishments.

**Article 20.-** Administrations of localities where sustained pollution places are discovered shall have to treat and dispose pollutants in such places according to their respective competence. Such local administrations shall have to report cases which are beyond their handling capability to the central-level SMAE and the concerned functional agencies for coordinated handling.

The sustained pollution places which are related to the national security and defense shall be handled by the Ministry of Public Security and the Ministry of Defense according to their respective competence; they shall have to report cases which are beyond their handling capability to the central-level SMAE and the concerned functional agencies for coordinated handling.

### *Chapter V*

#### **THE STATE MANAGEMENT OVER HAZARDOUS WASTES**

**Article 21.-** The responsibilities of the Ministry of Science, Technology and Environment:

1. The Ministry of Science, Technology and Environment shall exercise the uniform State management over hazardous wastes throughout the country; and shall have to organize and direct the HW management activities;

2. To compile and propose to the Government for promulgation or promulgate according to its competence legal documents on HW management;

3. To grant HW management registers or environment licenses according to its assigned competence to the HW source generators, collectors, transporters, keepers, treaters and disposers;

4. To promulgate environmental standards for the selection of HW burial sites, the technical norms for the designing, construction and operation of HW keeping places and burial sites up to the environmental hygiene standards; to select and provide consultations regarding HW treatment technologies; to coordinate with the Ministry of Finance in promulgating the collection levels of the HW management fees and charges;

5. To guide the contents and evaluate the environmental impact assessment reports of the HW collecting, transporting, keeping, treating and disposing establishments and HW burial sites;

6. To study and apply scientific and technological advances to the HW management;

7. To organize the inspection and assessment of level of environmental pollution at the HW keeping places, treating and disposing establishments and burial sites; to conduct the regular and irregular inspection and examination of HW management activities according to this Regulation;

8. To carry out the propaganda and training courses in order to raise the awareness of HW management:

a/ To assume the prime responsibility and coordinate with the concerned ministries and branches and the localities in organizing the dissemination of the HW Management Regulation throughout the country;

b/ To coordinate with the concerned ministries and branches in organizing the professional training courses for the HW management personnel;

c/ To coordinate with the concerned ministries and branches in propagating the HW management on the mass media to raise the awareness of leading officials of all levels and the people thereof;

9. Annually, to coordinate with the concerned ministries and branches and the localities in conducting the HW statistics and summing up the situation of HW management throughout the country, then reporting them to the Prime Minister.

**Article 22.-** The responsibilities of the Ministry of Construction:

1. To guide the provinces and centrally-run cities in the planning of construction of hygienic HW treatment zones and HW burial sites in line with the local socio-economic development planning;

2. To coordinate with the People's Committees of the provinces and centrally-run cities in directing the provincial/municipal Construction Services to work out planning and plans for construction of HW storing areas, HW treating and disposing establishments and the hygienic HW burial sites, then submit them to the People's Committees of the provinces and centrally-run cities for ratification;

3. To coordinate with the People's Committees of the provinces and centrally-run cities in directing the provincial/municipal Communications and Public Works Services to work out plans for management of wastes (including hazardous wastes) and organize the implementation thereof;

4. To coordinate with the People's Committees of the provinces and centrally-run cities in supervising the urban management, with special attention being paid to the collection, transportation, keeping, treatment, disposal and burial of HWs discharged from the urban areas and industrial parks;

5. To promulgate the rules and norms guiding the collection, transportation, treatment and disposal of HWs discharged from construction projects, especially in the urban areas and industrial parks;

6. To assume the prime responsibility and coordinate with the Ministry of Science, Technology and Environment in studying, producing and guiding the uniform use of industrial designs of specialized facilities and equipment in service of HW management throughout the country.

**Article 23.-** The responsibilities of the Ministry of Industry:

1. To supervise, inspect and apply effective measures to compel the observance of this Regulation's provisions by the waste source generators. In cases where the waste source generators are incapable of carrying out the HW collection, treatment and/or disposal by themselves, they shall be requested to sign contracts with the HW collectors, transporters, treaters and disposers;

2. To mobilize various capital sources for investment in HW treatment projects and for replacement or renewal of outdated technologies and equipment with modern ones; to conduct the statistics and assessment of industrial HWs of all kinds;

3. To coordinate with the Ministry of Science, Technology and Environment in organizing the survey and assessment of levels of environmental pollution caused by HWs at production and/or business establishments under the Ministry of Industry's management.

**Article 24.-** The responsibilities of the Ministry of Health:

1. To supervise, inspect and apply effective measures to compel the observance of this Regulation's provisions by hospitals, medical stations and medical service establishments;

2. To assume the prime responsibility and coordinate with the Ministry of Science, Technology and Environment and the Ministry of Construction in planning, selecting technologies and equipment for, and making investment in construction and operation of medical waste incinerators up to Vietnam's environmental standards;

3. To promulgate the Regulation on medical waste management.

**Article 25.-** The responsibilities of the Ministry of Defense and the Ministry of Public Security:

1. To supervise, inspect and apply effective measures to compel the observance of this

Regulation's provisions by the waste source generators under the Ministry of Defense and the Ministry of Public Security;

2. To grant environment licenses of all kinds as specified in the Regulation on hazardous waste management to collectors, transporters, keepers, treaters and disposers of HWs of security or defense secrets;

3. To coordinate with the Ministry of Science, Technology and Environment and the concerned agencies in providing professional training to officials engaged in HW management and carrying out propaganda to raise awareness of HWs within their respective branches;

4. To coordinate with the Ministry of Science, Technology and Environment, the People's Committees of the provinces and centrally-run cities and the concerned ministries and branches in overcoming the especially serious environmental incidents caused by HWs;

5. The HW source generators that are certified by the Ministry of Defense or the Ministry of Public Security as those operating solely in the economic domain shall have to fully comply with the provisions of this Regulation.

**Article 26.-** The responsibilities of the Ministry of Planning and Investment, the Ministry of Finance and the Ministry of Trade:

1. To base themselves on the annual and long-term plans of the ministries, branches and localities on HW management, to provide capital from various sources, including foreign-invested capital, to such ministries, branches and localities in order to ensure necessary conditions for implementation of such HW management plans;

2. To coordinate with the Ministry of Science, Technology and Environment in studying and proposing regimes, policies and measures to create favorable conditions in terms of capital and import tax on materials, equipment and technologies for HW treatment projects;

3. The Ministry of Finance shall assume the prime responsibility and coordinate with the Ministry of Science, Technology and Environment in promulgating regulations on collection levels of HW fee and fee for granting of environment licenses of all kinds.

**Article 27.-** The responsibilities of the People's Committees of the provinces and centrally-run cities:

1. To direct the provincial/municipal Construction



Services in working out planning and plans for construction of HW storing places, HW treating and disposing establishments and hygienic HW burial sites under their respective management;

2. To direct the provincial/municipal Communications and Public Work Services in working out feasible plans (options for organization, facilities, equipment, technology, capital...) and well organizing the implementation of plans for waste management, including collection, transportation, keeping, treatment and disposal of HWs in their respective localities;

3. To direct the provincial/municipal Science, Technology and Environment Services in:

a/ Granting HW management registers or environment licenses of all kinds to the HW source generators, collectors, transporters, keepers, treaters and disposers;

b/ Guiding contents and requirements of reports on environmental impact assessment, so that the HW keepers, treaters and disposers and the HW burial site owners can make and submit such reports to the competent SAME for approval;

c/ Organizing the inspection and assessment of environmental pollution levels at the HW storing places, HW treating and disposing establishments and/or HW burial sites within their respective localities;

d/ Carrying out propaganda and training activities in order to raise the awareness of HW management within their respective localities;

e/ Conducting annual HW statistics and making annual reviews of HW management within their respective localities, then reporting them to the Ministry of Science, Technology and Environment for further summarization and submission to the Prime Minister;

4. To assume the prime responsibility and coordinate with the Ministry of Construction in deciding matters related to land planning for the HW treatment zones and waste burial sites. To organize, according to their respective competence, the provision of HW management services in all forms in their localities; to take the initiatives in tapping capital sources from different economic sectors in their provinces and cities, various kinds of HW fees and fee for granting of environment licenses, support funds from the Central Budget and foreign countries (non-refundable aids, loans with preferential interest rates or joint ventures with foreign parties) and balance such capital sources for implementation of plans for hazardous waste management in their localities;

5. To coordinate with the concerned ministries and branches in inspecting and examining the HW management activities;

6. To receive and settle disputes, complaints, denunciations, requests and petitions regarding the HW management within their respective powers, or forward them to the competent State agency(ies) for settlement.

## *Chapter VI*

### **IMPLEMENTATION PROVISIONS**

*Article 28.-* The ministries, branches and localities having production and/or business establishments that discharge hazardous wastes shall have to direct production and/or business establishments under their respective management to strictly abide by the relevant provisions in this Regulation. They shall receive, consider and settle disputes, complaints, denunciations and petitions regarding the HW management within their respective competence according to the provisions of law.

*Article 29.-* The specialized environmental protection inspectorate under the Ministry of Science, Technology and Environment shall perform the function of conducting specialized inspection of HW management.

The Minister of Science, Technology and Environment shall be answerable to the Government for organizing and directing the performance of the function of conducting specialized inspection of HW management.

*Article 30.-* Organizations and individuals that violate the regulations on HW management shall, depending on the nature and seriousness of their violations, be disciplined or administratively sanctioned. If causing damage, they shall have to make compensation therefor as prescribed by law.

Individuals who commit offenses or acts of seriously violating the regulations on HW management shall be examined for penal liability as prescribed by law.

*Article 31.-* Any problems arising in the course of implementation of the Regulation on hazardous waste management should be reported by the concerned ministries, branches and localities to the Prime Minister for timely solution.

*For the Prime Minister*  
*Deputy Prime Minister*  
**PHAM GIA KHIEM**



**Annex 1:**  
**THE LIST OF HAZARDOUS WASTES (LIST A)**

**[A1] METALS AND WASTES CONTAINING METALS**

Code	Basel code*	Description of wastes	Notes	Hazard limit	Reclamation - recycling		Physical/chemical treatment**				Incineration		Burial	
					Oil/solution	Metal	Redox	pH adj.	Stab.	Sep.	Cement	Special	Hy-gienic	Special
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[A1010]		Metallic wastes and wastes containing alloys of one of the following metals:	Excluding wastes on list B	All		√								
	Y 27	- Antimony												
	Y 24	- Arsenic												
	Y 20	- Beryllium												
	Y 26	- Cadmium												
	Y 31	- Lead												
	Y 29	- Mercury												
	Y 25	- Selenium												
	Y 28	- Tellurium												
	Y 30	- Thallium												
[A1020]		Wastes containing or with one of the following:				√		√	√					
	Y 27	- Antimony; antimony compounds		> 0.1%										
	Y 20	- Beryllium; beryllium compounds		> 0.1%										
	Y 26	- Cadmium; cadmium compounds		> 0.1%										
	Y 31	- Lead; lead compounds		> 2%										
	Y 25	- Selenium; selenium compounds		> 0.1%										
	Y 28	- Tellurium, tellurium compounds		> 0.1%										
[A1030]		Wastes containing or mingled with one of the following:				√		√	√					
	Y 24	- Arsenic; arsenic compounds		> 0.1%										
	Y 29	- Mercury; mercury compounds		> 0.2%										

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Y 30	- Thallium; thallium compounds		> 0.1%										
[A1040]		Wastes containing one of the following:												
	Y 19	- Metal carbonyls		All										
	Y 21	- Hexavalent chromium compounds		> 1%			√							
[A1050]		Sludge from electrolysis		All			√	√						
[A1060]	Y 34	Waste from metal corrosion		pH < 2			√	√						
[A1070]		Residues leaked from the removal of zinc-working leftover, dusts and sludges such as: jarosite, hematite, etc.		All				√						
[A1080]		Unused												
[A1090]	Y 22	Ashes from incineration of copper wire		All		√			√					
[A1100]	Y 22	Dusts and residues from the systems for filtering gas from copper smelting furnace		All		√			√					
[A1110]	Y 22	Used electrolytic solutions from copper refinery and reclamation by electrolysis		All		√		√						
[A1120]		Waste sludge, excluding anode sludge, from electrolytic refining systems in copper refining and reclaiming activities		All		√		√						
[A1130]	Y 34	Used metal corrosive solutions		All		√	√	√						
[A1140]	Y 22	Waste copper chloride and copper cyanide catalysts		All		√		√						
[A1150]		Ashes containing precious metals from the incineration of printed circuits, including those on list B (see relevant list B [B1160])	At present, all shall be treated as hazardous wastes	All		√								
[A1160]		Waste lead acid accumulators, intact or broken		All		√		√		√				
[A1170]		Waste accumulators, whether classified or not, excluding assortment of accumulators on list B (see relevant list B [1090])		All		√			√	√				√

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[A1180]		Waste electric and electronic equipment or details containing such parts as accumulators or batteries on list A, mercury contacts, glass of cathode tubes and other activated glass, electric condensers containing PCB or mingled with substances in Annex I at a level that wastes can give off characteristics specified in Annex III (1), (2)	Y 10 if PCB, PBB and PCT contain impurities	All		√			√	√				√

- (1) Containing discarded details of electricity generators  
 (2) PCBs of a concentration of 50 mg/kg or more in any constituent of wastes.

**[A2] WASTES PRINCIPALLY CONTAINING INORGANIC COMPOUNDS, BUT POSSIBLY CONTAINING METALS OR ORGANIC MATERIALS**

Code	Basel code*	Description of wastes	Notes	Hazard limit	Reclamation - recycling		Physical/chemical treatment**				Incineration		Burial	
					Oil/solution	Metal	Redox	pH adj.	Stab.	Sep.	Cement	Special	Hygienic	Special
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[A2010]		Waste glass from cathode tubes and other activated glass		All					√	√				√
[A2020]		Waste inorganic fluorine compounds in liquid or paste form, other than wastes in the same form specified in list B	Does this exception automatically apply? Solid matters must be included	All				√			√	√		
[A2030]		Waste catalysts, excluding wastes in the same form specified in Annex B	Ditto	All		√		√	√					√
[A2040]		Waste plaster from the chemical processes, containing substances in Annex I at a concentration conducive to characteristics in Annex III (see relevant section in list B [B2050])		As the norms applicable to impurities				√						
[A2050]	Y 36	Waste asbestos (dust & fiber)		All					√					√

[A3] WASTES PRINCIPALLY CONTAINING ORGANIC SUBSTANCES, BUT POSSIBLY CONTAINING METALS OR INORGANIC SUBSTANCES

Code	Basel code*	Description of wastes	Notes	Hazard limit	Reclamation - recycling		Physical/chemical treatment**				Incineration		Burial	
					Oil/solution	Metal	Redox	pH adj.	Stab.	Sep.	Cement	Special	Hy-gienic	Special
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[A3010]	Y11	Wastes from production or processing of coke or tar from petroleum		All							√	√		
[A3020]	Y8	Waste mineral oils unfit for their originally intended use		All	√						√	√		
[A3030]		Wastes containing, being made of lead or mingled with lead-based anti-detonative compounds		All								√		
[A3040]		Waste thermo-conductive liquids (thermo-conductors)		All							√	√		
[A3050]	Y13	Wastes from production, packaging and use of resins, latex, plasticizers, glues and adhesives, excluding those specified in list B (see relevant item in list B [B4020])		All								√		√
[A3060]		Waste nitrocellulose		All								√		
[A3070]	Y39	Phenol, compounds containing phenol including waste chlorophenol		All							√	√		
[A3080]	Y42	Ether waste, excluding substances containing ether in list B		All	√						√	√		
[A3090]	Y21	Waste leather dust, ash, sludge and powder, when containing hexavalent chromium compounds or biocides (see relevant item in list B [B3100])		All			√							

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[A3100]	Y21	Waste leather scraps and other lather wastes and leather assortments unsuitable for processing leather products containing hexavalent chromium compounds or biocides (see relevant item in list B [B3090])		All			√							
[A3110]	Y21	Waste animal hide containing hexavalent chromium compounds or biocides or infectious substances (see relevant item in list B [B3110])		All			√							
[A3120]		Unused												
[A3130]	Y37	Waste organic phosphorus compounds		All			√	√				√		
[A3140]	Y41	Waste non-halogenated organic solvents, excluding such substances specified in list B		All	√						√	√		
[A3150]	Y45	Waste organohalogen compounds		All							√	√		
[A3160]	Y45	Residues from the distillation of dehydrated halogen or non-halogen substances from the reclamation of waste organic solvents		All							√	√		
[A3170]	Y45	Wastes from the production of halogenated aliphatic hydrocarbons		All							√	√		
[A3180]	Y45	Wastes, substances and matters containing or mingled with polychlorinated biphenyls (PCB), polychlorinated terphenyls (PCT), polychlorinated naphthalene (PCN), polybrominated biphenyl (PBB) or any similarities of polybrominated compounds at a concentration of 50mg/kg or more		≥50mg/kg							√	√		
[A3190]	Y11	Waste tarry residues (excluding tarry concrete) from the refinement, distillation and pyrolytic treatment of organic materials		All								√		√

(3) The limit of 50 mg/kg is considered as the international practice level for all wastes. However, many separate countries have prescribed a lower level (e.g. 20mg/kg) for special wastes

[A4] WASTES THAT POSSIBLY CONTAIN BOTH ORGANIC AND INORGANIC SUBSTANCES

Code	Basel code*	Description of wastes	Notes	Hazard limit	Reclamation - recycling		Physical/chemical treatment**				Incineration		Burial	
					Oil/solution	Metal	Redox	pH adj.	Stab.	Sep.	Cement	Special	Hygienic	Special
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[A4010]	Y2/Y3	Wastes from production, preparation and use of pharmaceuticals, excluding wastes specified in list B									√	√		
[A4020]	Y1	Wastes from clinics and relevant activities, arising from medical, dentistry or veterinary practice or similar activities, and wastes arising in hospitals or other institutions during the examination or treatment of patients, or research projects										√		
[A4030]	Y4	Wastes from the production, formulation and use of biocides and plant protection chemicals, including waste pesticide and herbicide, which are no longer effective, outdated (4), or unfit for their originally intended use									√	√		
[A4040]	Y5	Wastes from the production, packaging and use of wood preserving chemicals (5)					√	√				√		
[A4050]		Wastes having as constituents, containing or mingled with one of the following substances:												
	Y33	- Inorganic cyanides, excluding residues containing precious metals in solid form with stains of inorganic cyanides					√							
	Y38	- Organic cyanides										√		

[illegible]







[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		- Electrolytic zinc slag residue in agglomerates in bottom (>92% Zn)												
		- Zinc-cast slag in flakes (>85% Zn)												
		- Zinc slag melted by electrolysis in agglomerates (discontinuous melting) (>92% Zn)												
		- Zinc taken on surface												
		- Aluminum taken on surface, excluding slag from salt furnace			√									
	Y22	- Slag from the working of copper for further working or refining, not containing arsenic, lead or cadmium at levels conducive to characteristics in Annex III	Assessment of hazards thereof is still required		√									
		- Waste from refractory materials for lining furnaces, including metal melting furnaces originated from copper furnaces			√									
		- Slag from the working of precious metals for further refining			√									
		- Tin slag, containing tantalum by weight less than 0.5% of tin			√									
[B1110]		Discarded electric and electronic details												
		- Electronic details containing solely metals or alloys			√				√					
		- Details or scraps from electric or electronic equipment (10), including printed circuits, excluding such components as batteries and accumulators in list A, mercury contacts, glass from cathode tubes and other activated glass and electric condensers with PCB, or not mingled with substances in Annex I (i.e. cadmium, mercury,	Assessment of is hazards thereof still required						√			√		

[illegible]









1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[B2060]		Used activated coal from the potable water treatment and processes of food industry and vitamin production (see relevant item in list A [A4160])										√	√	
[B2070]		Calcium fluoride sludge										√	√	
[B2080]		White plaster from chemical industry processes, which are not on list A (see relevant item in list A [A2040])												
[B2090]		Waste anode pieces of petroleum coke or bitumen from the production of steel and aluminum, and cleaned according to ordinary industrial requirements, excluding waste anode from sodium hydroxide-chlorine electrolysis and metallurgy												
[B2100]		Waste aluminum hydrate and aluminum oxide and residues from production of aluminum oxide, excluding similar materials used in the gas purification, colloidal conglomeration and filtering												
[B2110]		Bauxite residue ("red sludge") (with pH degree of from average to under 11.5)					√					√	√	
[B2120]		Waste acidic solutions or basic solutions with pH degree of more than 2 but less than 11.5, which are neither corrosive nor hazardous (see relevant item in list A [A4090])	Assessment of hazards is still required				√							

**[B3] WASTES PRINCIPALLY CONTAINING ORGANIC SUBSTANCES, BUT POSSIBLY CONTAINING METALS OR INORGANIC SUBSTANCES**

Code	Basel code*	Description of wastes	Notes	Hazard limit	Reclamation - recycling		Physical/chemical treatment**				Incineration		Burial	
					Oil/solution	Metal	Redox	pH adj	Stab.	Sep.	Cement	Special	Hygienic	Special
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		The following plastic materials or plastic mixtures, provided that they are not intermingled with other wastes and prepared according to one certain characteristic												
		- Plastic scraps of polymers and co-polymers, not containing halogens, including but not being limited with (13):												
		- Ethylene												
		- Styrene												
		- Polypropylene												
		- Polyethylene terephthalate												
		- Acrylonitrile												
		- Butadiene												
		- Polyacetals												
		- Polyamides												
		- Polybutylene terephthalate												
		- Polycarbonates												
		- Polyethers												
		- Polyphenylene sulfides												
		- Acrylic polymers												
		- Alkanes C10-C13 (plasticizers)												
		- Polyurethane (not containing CFCs)	How can non-halogenated substances do that ?											

[illegible]



(13) It is construed that these scraps have been totally polymerized

(14) - Used wastes are not included in this category

- Wastes which must not be mingled

- Problems due to the open-cup incineration which must be studied

**[B4] WASTES, POSSIBLY CONTAINING BOTH INORGANIC AND ORGANIC SUBSTANCES**

Code	Basel code*	Description of wastes	Notes	Hazard limit	Reclamation - recycling		Physical/chemical treatment**				Incineration		Burial	
					Oil/solution	Metal	Redox	pH adj.	Stab.	Sep.	Cement	Special	Hy-gienic	Special
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[B4020]	Y13	Wastes from production, packaging and use of resins, latex, plasticizers, glues/adhesives, not on list A, without solvents and other impurities, at a certain level not conducive to characteristic(s) specified in Annex III, for example water-solvent adhesive.	The assessment of hazards thereof is still required						√			√		
[B4030]		Used disposable photographic cameras, with batteries not on list A.										√		

**Footnotes:**

\* Code numbers put according to Annex I of Basel Convention

\*\* Physical/chemical treatment methods:

Redox: *Oxidation-reduction*

pH adj.: *pH degree adjustment*

Stab.: *Stabilization*

Sep.: *Separation*

Annexes I, II, III and IV specified in this List are Annexes I, II, III and IV of Basel Convention.