

THE GOVERNMENT

THE SOCIALIST REPUBLIC OF VIETNAM

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DECREE

PROVIDING FOR CERTAIN REGULATORY REQUIREMENTS FOR TRADE AND INVESTMENT IN THE ENVIRONMENT AND NATURAL RESOURCE SECTOR

Pursuant to the Law on Government Organization dated June 19, 2015;

Pursuant to the Law on Investment dated November 26, 2014;

Pursuant to the Law on Mineral Resource dated November 17, 2010;

Pursuant to the Law on Water Resource dated June 21, 2012;

Pursuant to the Law on Environmental Protection dated June 23, 2014;

Upon the request of the Minister of Natural Resource and Environment;

The Government hereby adopts the Decree providing for certain regulatory requirements for trade and investment in the environment and natural resource sector.

Chapter I

GENERAL PROVISIONS

Article 1. Scope

1. This Decree provides for certain requirements for trade and investment in the sector of water and mineral resources and environmental protection, including:

- a) Licensing requirements for groundwater drilling;
- b) Requirements concerning competency of organizations providing basic water resource investigations, or water resource planning consultancy services; requirements concerning competency of institutional or individual entities providing consultancy in formulation of projects and reports that constitute application dossiers for water resource licenses;
- c) Licensing requirements for mineral resource exploration;
- d) Eligibility requirements for trade in biological products used for waste treatment;

dd) Eligibility requirements for transportation of dangerous goods, including hazardous and infectious substances belonging to Class 6 referred to in Clause 1 Article 4 of the Government's Decree No. [29/2005/ND-CP](#) dated March 10, 2005 providing the dangerous goods list and transportation of dangerous goods by inland waterways (hereinafter referred to as the Decree No. [29/2005/ND-CP](#)); Clause 1 Article 22 of the Government's Decree No. [14/2015/ND-CP](#) dated February 13, 2015 specifying and guiding implementation of certain articles of the Law on Railway (hereinafter referred to as the Decree No. [14/2015/ND-CP](#)) and Clause 1 Article 4 of the Government's Decree No. [104/2009/ND-CP](#) dated November 9, 2009 providing for the dangerous goods list and transportation of dangerous goods by means of road transport (hereinafter referred to as the Decree No. [104/2009/ND-CP](#));

e) Licensing requirements for hazardous waste treatment.

2. Notwithstanding regulations on regulatory requirements for trade and investment referred to in this Decree, other regulatory requirements for trade and investment in the sector of environment and natural resources shall be covered by sectoral laws and decrees.

Article 2. Subject of application

1. Licensing requirements for groundwater drilling shall be applied to organizations or individuals practicing groundwater investigation, survey, exploration and abstraction drilling (hereinafter referred to as groundwater drilling) within the territory of Vietnam.

2. Requirements concerning competency of organizations providing basic water resource investigations, or water resource planning consultancy services, or requirements concerning competency of institutional or individual entities providing consultancy in formulation of projects and reports that constitute application dossiers for water resource licenses, shall be applied to:

a) Organizations implementing basic water resource investigation schemes or projects, providing consultancy in formulation of water resource plans, projects or reports included in application dossier for grant and extension of water resource licenses (hereinafter referred to as water resource practicing organizations or individuals);

b) Institutional or individual entities exploring, abstracting water, and discharging wastewater into the receiving water which are involved in formulation of projects or reports constituting application dossiers for water resource licenses;

c) Regulatory authorities engaged in basic water resource investigation and planning, verification, issuance and renewal of water resource licenses.

3. Licensing requirements for mineral resource exploration shall be applied to entities providing mineral resource exploration, or institutional or individual entities licensed to explore mineral resources, or mineral resources regulatory authorities.

4. Eligibility requirements for trade in biological products used for treatment and disposal of waste substances rendered within the territory of Vietnam shall be applied to regulatory authorities; organizations, individuals that have their operations relating to assessment of registration dossiers for marketing authorization of biological products; or those manufacturing,

importing and testing biological products used in treatment and disposal of waste substances within the territory of Vietnam.

5. Necessary requirements for trade and investment referred to in Point dd Clause 1 Article 1 hereof shall be applied to state agencies, institutional or individual entities carrying out operations related to road, inland waterways and rail transportation of dangerous goods which are hazardous or infectious substances or materials within the territory of Vietnam.

6. Licensing requirements for treatment and disposal of hazardous waste substances shall be applied to regulatory authorities, institutional or individual entities having their operations related to hazardous waste substances or materials.

Chapter II

REGULATORY REQUIREMENTS FOR TRADE AND INVESTMENT IN THE ENVIRONMENT AND NATURAL RESOURCE SECTOR

Article 3. Licensed groundwater drilling scale

1. Licensed groundwater drilling scale shall be regulated as follows:

a) Small-scale groundwater drilling means drilling and installation of groundwater wells that have below-110-mm diameter casing or tubular pipes, and belong to the projects that each provide their water flow of less than 200 m³/day-night;

b) Medium-scale groundwater drilling means drilling and installation of groundwater wells that have below-250-mm diameter casing or tubular pipes, and belong to the projects designed to provide the water flow ranging from 200 m³/day-night to under less than 3,000 m³/day-night;

c) Large-scale groundwater drilling includes operations other than those covered by Point a and b Clause 1 of this Article.

2. The projects referred to in Clause 1 of this Article are systems constituted by one or more wells located within the same groundwater exploration and abstraction site, and having the distance between adjacent wells of less than 1,000 m, and owned by one institutional or individual entity; a project's water flow refers to total water flow produced by wells in that project.

3. Organizations or individuals, to the extent that they are licensed to operate their groundwater drilling on a specified scale, shall be entitled to operate on that scale and smaller one; are licensed to drill and install exploration, abstraction, investigation and survey boreholes or wells with the objectives of abstracting, studying, assessing and monitoring groundwater, which have respective diameters referred to in Clause 1 of this Article.

Article 4. Licensing requirements for groundwater drilling

Institutional or individual entities operating groundwater drilling must fully meet the following requirements:

1. Obtain a decision on establishment of an institutional entity from a competent authority, or one of the following qualifications, such as business registration certificate, business and tax registration certificate, enterprise registration certificate as required of such institutional entity, or business household registration certificate as required of an individual group, a family household granted by a competent regulatory authority.

2. The person appointed as the head of an institutional entity (Director or General Director), or the person assuming prime responsibility for technical issues of an institutional or individual entity (hereinafter referred to as technical responsible person), must meet the following requirements:

a) Accredited small-scale groundwater drilling:

Complete a technical or vocational associate degree in geological disciplines (including exploration geology, hydrogeology, engineering geology and geotechnical engineering), drilling practices, and acquire a minimum of 2 years' experience in practicing his/her trained profession, or graduate from a drilling worker's degree at the level of 3/7 or at least equivalent and acquire a minimum of 4 consecutive years' experience in practicing his/her trained profession; get directly involved in designing, reporting or drilling a minimum of 5 groundwater drilling projects.

Unless the said degrees or certificates are presented, (s)he is required to have acquired a minimum of 5 consecutive years' experience in practicing his/her trained profession, been directly involved in a minimum of 10 groundwater drilling works and obtained the certificate in successfully completing a technical training course on groundwater resource protection for the groundwater drilling practice, held by Water Resource Management Department or provincial-level Department of Natural Resource and Environment;

b) Accredited medium-scale groundwater drilling:

Complete at least a university degree in geological disciplines (including exploration, hydrographic, engineering and technical geology), drilling practices, and acquire a minimum of 3 years' experience in practicing his/her trained profession, or graduate from an associate degree program (including exploration, hydrographic, engineering and geotechnical engineering), drilling practices, and acquire a minimum of 5 years' experience in practicing his/her trained profession; get directly involved in formulating exploration projects or reports, designing a system of abstraction wells, or take charge of a minimum of 5 groundwater drilling works that each have their water flow of at least 200 m³/day-night;

c) Accredited large-scale groundwater drilling:

Complete at least a university degree in geological disciplines (including exploration, hydrographic, engineering and geotechnical engineering), drilling practices, and acquire a minimum of 7 years' experience in practicing his/her trained profession; get directly involved in formulating exploration projects or reports, designing a system of abstraction wells, or take charge of a minimum of 3 groundwater drilling works that each have their water flow of at least 3,000 m³/day-night;

d) Technical responsible person must be a person affiliated, or entering into an employment contract, with an authorized professional organization or individual in accordance with the laws on labor. Where such employment contract takes the form of a fixed-term contract, the remaining validity duration of the contract must be at least 12 months on the date upon which the registration dossier is submitted.

3. Drilling machinery and equipment must ensure conformance with technical specifications referred to in Article 10 hereof.

Article 5. Requirements concerning competency of water resource practicing organizations

1. Water resource practicing organizations must obtain one of the followings:

a) The decision on establishment issued to these organizations by a competent regulatory authority which specifies functions, duties concerning basic water resource investigation, planning and other water resource operations;

b) Business registration certificate, business and tax registration certificate, or enterprise registration certificate issued by a competent regulatory authority.

2. Their professional personnel taking part in execution of programs, projects or preparation of relevant reports must meet the following requirements:

a) With respect to basic water resource investigation or planning programs or projects, their professional personnel is required to meet requirements concerning professional practices and experience referred to in Article 6 and their technical responsible person is required to meet regulations laid down in Article 7 hereof;

b) With respect to basic water resource investigation or planning programs or projects, their professional personnel is required to meet requirements concerning professional practices and experience referred to in Article 8 hereof.

3. Each individual belonging to their professional personnel referred to in Clause 2 of this Article must meet the following requirements:

a) Be a Vietnamese citizen or an alien licensed to work within the territory of Vietnam in accordance with the laws on labor;

b) Hold a university degree or higher ones in the profession corresponding to his/her assigned duties. These degrees must be issued by domestic or overseas educational establishments in accordance with laws and regulations;

c) Obtain the hiring decision or employment contract with recruiting organizations as provided for by laws. Where such employment contract takes the form of a fixed-term contract, the remaining validity duration of the contract must be at least 06 months on the date upon which the dossier of demonstration of competency in water resource practicing is prepared.

4. Have special-purpose machinery and equipment that ensure conformity with requirements referred to in Article 10 hereof. Where such machinery and equipment are not owned by these organizations, an equipment or machinery leasing agreement with other organizations or individuals must exist.

5. Where program, project or reporting activities are subject to requirements for their implementation, these organizations are required to meet these requirements, or have cooperation or partnership agreements or lease contracts with accredited organizations or individuals for this implementation.

Article 6. Requirements regarding the professional personnel of the said organizations getting involved in implementation of basic water resource investigation or planning programs or projects

1. Organizations licensed to develop basic water resource investigation programs or projects:

a) Professional organization structure: Have a minimum of 5 employees which have been trained in academic disciplines relating to surface and sea water (hydrography, oceanography, engineering hydrology, environmental hydrology and water resource engineering), groundwater (geology, hydrogeology, engineering geology, exploration drilling practice, geophysics and geotechnical engineering), environment (environmental science, environmental technology, environmental engineering and environmental management), water resource management or other academic ones relating to water resource. Professional personnel structure must accord with specific contents of each basic water resource investigation program or project;

b) Working experience: Have a minimum of 3 years' experience in basic water resource investigation and planning activities, or get directly involved in implementing a minimum of 02 basic water resource investigation or planning projects or programs.

2. Organizations licensed to execute water resource planning projects:

a) Professional organization structure: Have a minimum of 7 employees which have been trained in academic disciplines relating to surface and sea water (hydrography, oceanography, engineering hydrology, environmental hydrology and water resource engineering), groundwater (geology, hydrogeology, engineering geology, exploration drilling practice, geophysics and geotechnical engineering), environment (environmental science, environmental technology, environmental engineering and environmental management), water resource management or other academic ones relating to water resource. Professional personnel structure must accord with specific contents of each water resource planning project;

b) Working experience: Have a minimum of 4 years' experience in basic water resource investigation and planning activities, or get directly involved in implementing a minimum of 3 basic water resource investigation or planning projects or programs.

Article 7. Eligibility requirements for technical responsible persons of basic water resource investigation or planning programs or projects

1. Basic water resource investigation programs or projects:

a) Academic discipline: hydrography, oceanography, hydrogeology, environmental engineering, water resource engineering;

b) Working experience: Have a minimum of 5 years' experience in basic water resource investigation and planning activities, or get directly involved in implementing a minimum of 3 basic water resource investigation or planning projects or programs;

c) At the same time, be in charge of technical issues of a minimum of 3 basic water resource investigation programs or projects.

2. Water resource planning projects:

a) Academic discipline: hydrography, hydrogeology, environmental engineering, water resource engineering;

b) Working experience: Have a minimum of 7 years' experience in basic water resource investigation and planning activities, or get directly involved in implementing a minimum of 5 basic water resource investigation or planning projects or programs;

c) At the same time, be in charge of technical issues of a minimum of 2 water resource planning projects.

Article 8. Eligibility requirements for professional personnel for formulation of projects or reports constituting the application dossier for water resource licenses

1. The number of professional personnel:

a) Projects or programs subject to the Ministry of Natural Resource and Environment's licensing authority: Have a minimum of 3 officers completing training programs in disciplines referred to in Clause 2 of this Article;

b) Projects or programs subject to the provincial-level People's Committee's licensing authority: Have a minimum of 2 officers completing training programs in disciplines referred to in Clause 2 of this Article.

2. Academic disciplines:

a) Surface and sea water abstraction and utilization programs and reports: Include academic disciplines relating to surface and sea water (hydrography, oceanography, engineering hydrology, environmental hydrology and water resource engineering);

b) Groundwater exploration, abstraction and utilization programs and reports: Include academic disciplines relating to groundwater (geology, hydrogeology, engineering geology, exploration drilling practice, geophysics and geotechnical engineering);

c) Programs for and reports on discharge of wastewater into the receiving water: Include academic disciplines relating to environment (environmental science, environmental technology, environmental engineering and environmental management).

3. Working experience:

a) Projects or programs subject to the Ministry of Natural Resource and Environment's licensing authority: Have a minimum of 3 years' experience in the water resource and environment sector, or get directly involved in developing a minimum of 3 programs or reports. Technical responsible persons of these projects or reports must have a minimum of 5 years' experience or get directly involved in developing a minimum of 5 programs or reports;

b) Projects or programs subject to the provincial-level People's Committee's licensing authority: Acquire a minimum of 3 years' experience in the water resource and environment sector, or get directly involved in developing at least 1 program or report. Technical responsible persons of these projects or reports must have a minimum of 3 years' experience or get directly involved in developing a minimum of 3 programs or reports.

4. At the same time, a technical responsible person of such program or report shall only be allowed to be in charge of technical issues of a maximum of 3 programs or reports.

Article 9. Eligibility requirements for individuals as independent consultants on formulation of projects or reports constituting the application dossier for water resource licenses

Individuals providing independent consultancy for formulation of projects or reports constituting the application dossier for water resource licenses must conform to requirements referred to Point a and b Clause 3 Article 5 hereof and the following ones:

1. Graduate from academic disciplines relevant to programs or reports as provided for by Clause 2 Article 8 hereof.

2. Working experience:

a) Formulation of programs or reports constituting the application dossier for water resource licenses that fall within the Ministry of Natural Resource and Environment's jurisdiction: Acquire a minimum of 15 years' experience and be appointed as technical responsible persons of a minimum of 7 programs or reports;

b) Formulation of programs or reports constituting the application dossier for water resource licenses that fall within the provincial-level People's Committee's jurisdiction: Acquire a minimum of 8 years' experience in the water resource sector and be appointed as technical responsible persons of a minimum of 5 programs or reports.

3. At the same time, those individuals as independent consultants shall only be allowed to provide consultancy for formulation of 1 program or report included in the application dossier for water resource license.

Article 10. Requirements with respect to special-purpose machinery or equipment

1. Special-purpose machinery or equipment that are currently owned or leased must ensure that quantity, quality and technical attributes are consistent with specific work activities.

2. When machinery or equipment items are subject to quality control tests in accordance with laws and regulations, the certificate of quality issued by competent regulatory authority is required.

3. Where any program or project includes groundwater drilling activities, drilling machines and equipment used for such activities must meet requirements with respect to the practicing scale and labor safety in accordance with laws and regulations.

Article 11. Requirements concerning competency of organizations or individuals in implementation of programs, projects or reports in the water resource sector

1. Practicing organizations or individuals, when implementing basic investigation programs, projects, or providing consultancy for formulation of planning schemes, programs or reports constituting the application dossier for water resource licenses, must submit dossiers that demonstrate their competency conforming to requirements referred to in this Decree.

2. The required dossier of demonstration of competency applied to water resource practicing organizations:

a) The authenticated copy, or the copy and original copy attached thereto for verification purpose, of papers referred to in Clause 1 Article 5, and papers, materials or contracts submitted to serve the purpose of demonstrating conformance with requirements with respect to work activities subject to implementation requirements (where appropriate) in accordance with Clause 5 Article 5 hereof;

b) The list of professionals and technical responsible persons; the certified copy or the copy and the original copy attached thereto for the purpose of assuring consistency of information with identification cards or passports, academic degrees or practicing certificates (where appropriate), employment contracts or recruitment decisions; materials or papers used for the purpose of demonstrating working experience of each individual as required by Article 6, 7 and 8 hereof;

c) The approved list of special-purpose machinery and equipment used for implementation of programs, projects, and materials demonstrating conformance with requirements referred to in Article 10 hereof.

3. Competency requirements for individuals as independent consultants on formulation of projects or reports constituting the application dossier for water resource licenses:

a) The certified copy, or the copy and the original copy attached thereto for the purpose of assuring consistency of information with identification cards or passports, academic degrees or diplomas;

b) Materials or papers demonstrating working experience of individuals in conformity with requirements referred to in Clause 2 Article 9 hereof.

4. Practicing organizations or individuals must submit competency demonstration dossiers to agencies that have authority over assignment of duties, commissioning and procurement, or organizations or individuals that hire them to develop programs or reports as a basis for

selection of organizations or individuals conforming to competency requirements for implementation of programs, projects or reports.

Chapter III

ELIGIBILITY REQUIREMENTS FOR MINERAL EXPLORATION PRACTISING ORGANIZATIONS

Article 12. Mineral exploration practicing organizations

Mineral exploration practicing organizations, when contracting to implement a mineral exploration program with any organization or individual licensed to explore mineral resources, must meet requirements referred to in Article 35 of the Law on Mineral Resources and other regulations set forth herein, including:

1. Enterprises must be established in accordance with the Corporate Law.
2. Science and technology organizations must be established in accordance with the Law on Science and Technology.
3. Cooperatives and cooperative alliances must be established under the provisions of the Law on Cooperatives.
4. Geology public sector organizations having mineral resource exploration functions and duties must be established by competent regulatory authorities.

Article 13. Documentation requirements for mineral exploration practicing

1. Mineral exploration practicing organizations referred to in Article 12 hereof, when implementing mineral exploration programs, must meet documentation requirements for mineral exploration operations, including:

- a) The certified copy of establishment decision or the certificate of accreditation of science and technology operations, enterprise registration certificate, issued by competent regulatory authorities;
- b) The contract to explore mineral resources with organizations or individuals licensed to explore mineral resources with attachment of mineral exploration permit, issued by competent regulatory authorities;
- c) The list of officers or employees involved in implementing mineral exploration programs; employment contracts (or equivalents in writing) of technical responsible persons and technical employees getting directly involved in implementation of programs in accordance with laws and regulations;
- d) Materials held by individuals involved in implementing mineral exploration programs (the certified copy or the copy with attachment of the original copy for verification purpose), including the decision on assignment of duties to technical responsible person (hereinafter referred to as the mineral exploration program leader) with attachment of vocational or

professional qualifications, scientific biographies or achievements of the program leader; employment contract or recruitment decision; vocational or professional qualifications with relevance to assigned duties; copy of identification card, citizen identification card or passport;

dd) The list of special-purpose equipment or appliances for execution of mineral exploration projects, which is consistent with mineral exploration programs.

2. Where a mineral exploration program is directly implemented by an organization licensed to explore mineral resources, submitted application dossier must be submitted as referred to in Point c, d and dd Clause 1 of this Article.

3. Application dossier for mineral exploration practicing referred to in Clause 1 of this Article must be managed and deposited by organizations or individuals licensed to explore mineral resources, and by mineral exploration practicing organizations.

Article 14. Eligibility requirements for mineral exploration program leader

1. Mineral exploration program leader must meet requirements referred to in Point b Clause 1 Article 35 of the Law on Mineral Resources and the following regulations:

a) Be a Vietnamese citizen or an alien licensed to work within the territory of Vietnam in accordance with the laws on labor;

b) Complete a university or other higher-level degree in the discipline of mineral exploration geology or equivalents; with respect to hot mineral water exploration programs, complete the said degree in the hydrogeology or geoenvironment discipline;

c) Acquire a minimum of 5 years' experience in getting involved in implementation of geological investigation, mineral exploration programs; obtain the certificate of appointment of mineral exploration program leader, issued by the Ministry of Natural Resources and Environment;

d) The mineral exploration program leader, when on duty to perform his/her mineral exploration duties, must meet experience requirements referred to in Point b Clause 1 Article 35 of the Law on Mineral Resources and, with respect to hazardous mineral exploration programs, must acquire experience in at least 1 hazardous mineral exploration program as a geological engineer; with regard to other mineral exploration programs, must acquire experience in at least 1 hazardous mineral exploration program as a geological engineer.

2. Mineral exploration program leader shall take on his/her assigned duties only when a decision on duty assignment is granted by an organization licensed to explore mineral resources or an organization practicing mineral exploration.

3. At the same time, a mineral exploration leader shall only be allowed to take on his/her assigned duties for a maximum of 2 mineral exploration programs. Upon making reports on mineral exploration outcomes, a mineral exploration program leader must have spent a period of time on taking control of relevant activities which equals 25% of program implementation length of time as described in the mineral exploration permit.

Article 15. Eligibility requirements for engineering workers implementing mineral exploration programs

1. Engineering workers grouped by such disciplines as geological survey, geology, hydrogeology, geoengineering, geophysics, project engineering (excavation and drilling) and other relevant ones must meet personnel quantity requirements specified in mineral exploration programs subject to pre-licensing evaluation.

2. Engineering workers grouped by training disciplines, when on duty, must be supervised by designated responsible persons who are required to meet professional and experience requirements as follows:

a) With regard to hazardous mineral exploration programs, acquire a minimum of 5 years' working experience with respect to those who hold vocational associate degrees, or a minimum of 3 years' experience with respect to those who hold university degrees; during such period, they must have at least 1 year of participation in implementation of geological investigation or exploration programs with respect to hazardous mineral resources;

b) With regard to other mineral exploration programs, acquire a minimum of 3 years' working experience with respect to those who hold vocational associate degrees, or a minimum of 2 years' experience with respect to those who hold university degrees.

Article 16. Conformity requirements for special-purpose equipment or appliances used in mineral exploration projects

1. Special-purpose equipment or appliances used in mineral exploration projects must meet quantity, quality and technical function requirements of work activities of mineral exploration programs which have been verified during the mineral exploration licensing process.

2. Exploring radioactive minerals and rare earth elements requires special-purpose equipment and appliances, and technical staff that conform to radiation safety standards as prescribed by the laws on radiation and nuclear safety.

Chapter IV

REGULATORY REQUIREMENTS FOR TRADE AND INVESTMENT IN THE ENVIRONMENT PROTECTION SECTOR

Section 1. ELIGIBILITY REQUIREMENTS FOR TRADE IN BIOLOGICAL PRODUCTS USED FOR WASTE TREATMENT

Article 17. Eligibility requirements for trade in biological products used for waste treatment

1. Organizations or individuals trading and importing biological products used for waste treatment (hereinafter referred to as bioproducts) must obtain the certificate of marketing authorization of bioproducts, issued by the Vietnam Environment Administration, the Ministry of Natural Resources and Environment under the provisions of this Decree.

2. Bioproducts which have been accredited by the certificate of marketing authorization, but being subject to any change to ingredients or contents of active ingredients which affects treatment efficiency and health safety of human beings and living organisms, require re-issuance of the certificate of marketing authorization in accordance with Article 20 hereof.

Article 18. Certificate of marketing authorization

The certificate of marketing authorization of bioproducts used for waste treatment must provide the following information:

1. Name of bioproduct in question.
2. Quantity of bioproducts qualifying for marketing authorization.
3. Composition of active ingredients, microorganisms (scientific nomenclature, concentration, density) in the bioproduct in question.
4. Manufacturer's name, address and telephone.
5. Applicant's name, address and telephone.
6. Administration method and expiry date of bioproduct in question.
7. Packaging details of bioproduct.

Article 19. Application dossier for registration of marketing authorization

1. Application form for registration of marketing authorization of bioproducts completed by using the form stipulated in the Appendix I of this Decree.
2. Copy of enterprise registration certificate (where appropriate).
3. Bioproduct manufacturing process.
4. The certified copy or the copy with attachment of the original copy for verification purpose (if an organization or individual submits registration dossier in person) of test result report or analysis of quality of bioproduct, issued by local or foreign accredited testing bodies.
5. The description of bioproduct according to the template provided in the Appendix II of this Decree.
6. The certified copy or the copy with attachment of the original copy for verification purpose (if an organization or individual submits registration dossier in person) of evaluation report made by managerial-level Science Council with respect to bioproducts which are results of scientific research projects (where appropriate).
7. Testing results of bioproduct (where appropriate).

8. Official label and packaging form that require authorization with attachment of storage and use instruction leaflets and warnings of health risks to human beings and living organisms.

9. The certified copy or the copy with attachment of the original copy for verification purpose (if an organization or individual submits registration dossier in person) of patents on inventions or commitments to compliance with regulations on intellectual property rights for locally-manufactured bioproducts in question.

10. The certified copy or the copy with attachment of the original copy for verification purpose (if an organization or individual submits registration dossier in person) of the certificate of marketing authorization of bioproducts, issued by a manufacturing country's competent regulatory authority with respect to imported bioproducts.

11. Detailed testing schedule, including important information such as testing contents, time, location and agency of testing with respect to bioproducts which have not had recognized test results.

Article 20. Application procedure for the certificate of marketing authorization of bioproducts

1. Organizations or individuals referred to in Article 17 hereof shall submit 7 sets of application dossiers for registration of marketing authorization of bioproducts referred to in Article 19 hereof, whether directly or by post, to the Vietnam Environment Administration for consideration, assessment and grant of the certificate of marketing authorization of bioproducts.

2. Within a permitted period of 05 working days of receipt of submitted application dossier, the Vietnam Environment Administration shall be responsible for verifying sufficiency and validity of such application dossier. Where application dossier is not sufficient or valid, submitting organizations or individuals must be notified in writing for any modification and supplementation.

3. Within a maximum period of 10 working days after the deadline for consideration of sufficiency and validity of application dossier, with regard to bioproducts which have not had testing results, the Vietnam Environment Administration shall give the written notification of inspection or monitoring programs in line with the detailed testing schedule of organizations or individuals applying for registration of marketing authorization of bioproducts.

4. Within a maximum period of 20 days of receipt of all required application dossier, subject to regulations set forth in Clause 2 of this Article or bioproduct testing results referred to in Clause 3 of this Article, the Vietnam Environment Administration shall establish and convene a meeting of the sectoral Science Council on verification of application dossier for registration of marketing authorization of bioproducts (hereinafter referred to as Council).

5. Issuance of the certificate of marketing authorization of bioproducts

a) Within a maximum period of 07 working days after the Council approves and does not amend or modify such test results, the Vietnam Environment Administration shall consider and make its decision on granting the certificate of marketing authorization of bioproducts;

b) Where the Council's approval of test results includes any amendment or supplementation, the Vietnam Environment Administration must notify submitting organizations or individuals of further improvement of submitted application dossiers. Within a permitted period of 07 working days of receipt of completely amended or modified dossiers, the Vietnam Environment Administration shall consider and make its decision on granting the certificate of marketing authorization of bioproducts;

c) Where the Council refuses such approval, within a maximum period of 02 working days after the end of the Council's meeting, the Vietnam Environment Administration shall notify organizations or individuals applying for registration of marketing authorization of bioproducts of this in which reasons for such refusal should be expressly stated.

6. With respect to bioproducts assigned the certificate of marketing authorization, organizations or individuals having the demand for extension of permission for trade in and importation of these bioproducts shall be responsible for notifying the Vietnam Environment Administration, the Ministry of Natural Resources and Environment of their name and quantity with within a minimum of 15 business days before the marketing authorization takes effect. Within a permitted period of 05 working days of receipt of this notification, the Vietnam Environment Administration shall be responsible for responding to these organizations and individuals in writing. Organizations or individuals shall be authorized to launch bioproducts into the market after receiving the Vietnam Environment Administration's approval.

Article 21. Withdrawal and revocation of certificate of marketing authorization

1. Certificate of marketing authorization of bioproducts shall be withdrawn or revoked in the following circumstances:

a) Certificate of marketing authorization of bioproducts is issued in contravention of applicable regulations;

b) There is any change to ingredients of bioproducts;

c) Competent regulatory authorities have verified that those bioproducts which have been registered for marketing authorization have been found in violation of industrial property rights.

2. Organizations or individuals subject to withdrawal or revocation of the certificate of marketing authorization of bioproducts shall be responsible for withdrawing and treating bioproducts which have been manufactured, imported and currently launched into the market in accordance with laws and regulations.

3. When the certificate of marketing authorization of bioproducts is subject to withdrawal or revocation, the Vietnam Environment Administration shall bear a burden of displacing these bioproducts from the approved list of bioproducts used in waste treatment in Vietnam and posting information about this action on the official website of Vietnam Environment Administration and the Ministry of Natural Resources and Environment.

Article 22. Accredited bioproduct testing facilities

1. Accredited bioproduct testing facility refers to an organization performing its designated functions in conducting researches, biological or environmental technology transfers (in compliance with the establishment decision or the certificate of registration of scientific and technological operations, issued by competent regulatory authorities) which have sufficient equipment, materials and human resource required to apply bioproducts in every project site under their use instructions.

2. Organizations or individuals applying for registration of marketing authorization of bioproducts may decide on accredited testing bodies or facilities, and shall be liable for any cost incurred from conduct of any test as agreed upon in any contract.

3. Accredited testing bodies or facilities may, at their own discretion, decide on cooperation with any relevant agencies during the testing process, and shall be responsible for keeping custody of testing result reports within a minimum of 60 months after the end of a test.

Article 23. Contents, method and reporting of results of bioproduct tests

1. Contents of tests on bioproducts include:

a) Ingredients, quality of bioproducts specified in specified statutory standards;

b) Efficacy of bioproducts, if used according to instructions;

c) Evaluation of health safety of bioproducts for human beings and living organism.

2. Testing method must conform to relevant technical standards and regulations, or otherwise ensure objectivity and scientificity.

3. A bioproduct testing report must include the followings:

a) Name of the testing body or facility or individual applying for a test;

b) Name of bioproduct in question with attachment of dossier stating ingredients, efficacy, storage and administration method, label and packaging;

c) Pre-testing conditions of bioproducts;

d) Testing subject matters;

dd) Testing location, time, scale and method;

e) Testing results, conclusions and recommendations.

Article 24. Monitoring and inspection of bioproduct tests

1. The Vietnam Environment Administration shall be responsible for monitoring and inspecting, or authorizing the Department of Environmental Protection within each local government, to carry out monitoring or inspection of tests on application of bioproducts according to the written notification stated in Clause 3 Article 20 hereof.

2. Monitoring and auditing commission shall be composed of representatives of the Vietnam Environment Administration or the local Department of Environmental Protection and biotechnological experts.

3. Results produced from monitoring and inspection activities shall be documented, inclusive of consulting opinions and recommendations, with the presence and agreement of members of the monitoring and auditing commission, and representatives of bioproduct testing bodies or facilities.

Article 25. Approved list of biological products used for waste treatment in Vietnam

1. Bioproducts with certificates of marketing authorizations must be emplaced in the approved list of bioproducts used in waste treatment in Vietnam which must be posted on the official website of Vietnam Environment Administration and the Ministry of Natural Resources and Environment.

2. The Vietnam Environment Administration shall be responsible for conducting a regular review and modification of the approved list of bioproducts used in waste treatment in Vietnam every 6 months.

Section 2. REGULATORY REQUIREMENTS FOR TRANSPORTATION OF DANGEROUS GOODS WHICH ARE HAZARDOUS AND INFECTIOUS SUBSTANCES

Article 26. Licensing requirements for transportation of dangerous goods which are hazardous and infectious substances

1. Organizations or individuals must obtain a license to transport dangerous goods which are hazardous and infectious substances on condition that:

a) the weight of dangerous goods which are hazardous or infectious substances transported on road vehicles equals or exceeds the statutory weight limit beyond which the certificate of transportation is required in accordance with column 6 Appendix III as annexed to this Decree;

b) the weight of dangerous goods of a single class or division does not exceed the statutory weight limit listed in column 6 Appendix III hereof beyond which the certificate of transportation is required, but the total weight of a mixed load of hazardous or infectious substances transported on the same road vehicle is greater than 01 tonne/shipment (excluding the weight of the packaging).

2. Organizations or individuals must conform to requirements referred to in this Decree, and may be exempt from applying for a license to transport dangerous goods which are hazardous and infectious substances on condition that:

a) the weight of dangerous goods which are hazardous or infectious substances transported on road vehicles is within the statutory weight limit beyond which the certificate of transportation is required in accordance with column 6 Appendix II hereof, but an environmental incident response and contingency plan is available for transportation of dangerous goods (using the

form given in the Appendix IV hereof) and transportation requirements referred to in Article 27, 28 and 29 hereof are met;

b) dangerous goods which are hazardous or infectious substances are transported by inland waterways or railroad, but such transportation meets respective regulations set out in the Decree No. [29/2005/ND-CP](#) or the Decree No. [14/2015/ND-CP](#) and conforms to requirements referred to in Article 27, 28 and 29 hereof.

Article 27. Requirements for packing, packaging, containing objects, labeling, and hazard placarding and marking, of hazardous and infectious substances

1. Statutory requirements for packing, packaging and containing objects of dangerous goods which are hazardous and infectious substances:

a) Packing dangerous goods and using various materials as packaging and containing objects of dangerous goods must meet regulations specified in the National Standard TCVN 5507:2002 – Dangerous chemicals - Safety regulations in production, trading, use, handling and transportation practices (hereinafter referred to as TCVN 5507:2002), or substitute documents, and conform to technical requirements or standards respectively applied to such dangerous goods (where appropriate);

b) Packaging and containing objects of dangerous goods must be anti-corrosive, stainless and non-reactive with inner substances, and watertight, airtight and rigid, to prevent any leakage or spillage during transportation under normal conditions, and maximally restrict any spillage or leakage of dangerous goods into the surrounding environment in case of emergency;

c) Shipping organizations or individuals using packaging materials or containing objects for dangerous goods must conduct relevant tests and take responsibility for results of these tests on such packaging materials and containing objects to be used in order to prevent any spill or leakage during transportation;

b) Packaging materials and containing objects of dangerous goods when in use must be stored in a separate place in conformity with regulations laid down in the National Standard TCVN 5507:2002.

2. Labeling requirements:

Labeling and marking of dangerous goods shall comply with regulations on goods labels and labeling of chemicals.

3. Requirements for hazard marking and placarding shall be provided as follows:

a) They must be displayed on the packaging and containing objects of dangerous goods;

b) A vehicle transporting dangerous goods must be marked with a placard of a hazard according to the class or division of transported goods. If a mixed load of dangerous goods of different classes or divisions are transported on the same vehicle, placards or markings of hazards of these dangerous goods must be fully displayed. Hazard placards or markings shall be placed on two opposing sides and at the back of a cargo transport unit, be of resilience to protect

against adverse weather effects and other common physical effects from handling, stowage and transportation activities. Hazard placards and markings shall not be displayed on a cargo transport unit if it does not carry any dangerous goods;

c) Hazard placards and markings signaling a hazard of a cargo class or division must conform to regulations laid down in Article 6 of the Decree No. [29/2005/ND-CP](#) Article 24 of the Decree No. [14/2015/ND-CP](#) or Article 9 of the Decree No. [104/2009/ND-CP](#);

d) With respect to road or rail vehicles transporting bulk cargos that have quantities equaling or exceeding the statutory limits beyond which the certificate of transportation is required as referred to in Column 6 Appendix III to this Decree, in addition to placement of hazard placards or markings, emergency information panel must be displayed at the rear with its bottom edge which is at a height of at least 450mm above ground level.

4. Requirements for handling and storage of dangerous goods:

a) Organizations or individuals involved must comply with instructions on storage, handling and warehousing of specific classes of dangerous goods as referred to in the National Standard TCVN 5507:2002, or notifications of dangerous goods consignors or carriers or operators;

b) Loading, unloading and warehousing dangerous goods shall conform to Article 9 of the Decree No. [29/2005/ND-CP](#) Article 29 of the Decree No. [14/2015/ND-CP](#) or Article 12 of the Decree No. [104/2009/ND-CP](#).

5. Chemical safety datasheets must be provided for transportation of dangerous goods which are hazardous and infectious substances in accordance with prevailing regulations.

Article 28. Licensing requirements for vehicles transporting dangerous goods which are hazardous and infectious substances

Road, rail or inland waterways transport units carrying dangerous goods which are hazardous or infectious substances must meet conformity requirements for specific transport units as referred to in Article 13 of the Decree No. [104/2009/ND-CP](#) Article 30 of the Decree No. [14/2015/ND-CP](#) and Article 10 of the Decree No. [29/2005/ND-CP](#) and the following conditions:

1. Do not carry dangerous goods on the same transport unit with passengers, livestock, food items or drinks, or carry dangerous goods likely to react with others to cause fire, explosions or generate any new substance hazardous for the environment and human health on the same transport unit.

2. Have equipment used for partially or completely covering cargo compartments. Cover accessories or equipment must meet waterproofing and fire protection requirements, and cannot be damaged when in contact with classes of goods in transit, and must remain safe in case of violent shocks, impacts or frictions, and prevent any discharge of contaminants and pollutants into environment in case of incidents or emergency situations.

3. Ensure that equipment or materials are fully provided to respond to any emergency situation during transportation as described in the plan for response to any environmental incidents or

emergency situations that may arise during transportation of dangerous goods as provided for in the form given in the Appendix IV annexed hereto.

4. Meet rules, regulations and standards concerning transportation of dangerous chemicals or goods, and fire safety conditions in accordance with laws, and comply with regulatory policies on compulsory fire and explosion insurance.

5. Have cabins providing enough space for at least two persons, including 01 driver and 01 driver's mate on a road vehicle.

Article 29. Qualification requirements for drivers and driver's mates of vehicles transporting dangerous goods which are hazardous and infectious substances

1. Drivers must obtain driver's licenses that remain valid and relate to the type of vehicle printed in the license for transportation of dangerous goods.

2. Drivers and driver's mates of vehicles transporting dangerous goods must meet one of the following requirements:

a) Complete training programs and certificates in transportation of dangerous goods which are hazardous or infectious substances conferred by the Ministry of Natural Resources and Environment;

b) Complete training programs and certificates in chemical safety or other certificates in transportation of dangerous goods conferred by competent regulatory authorities;

c) Complete at least vocational or professional associate degrees in the chemical sector.

Article 30. Transportation of dangerous goods which are hazardous and infectious substances for hire

Where the consignor of dangerous goods hires the operator of a transport unit licensed to transport dangerous goods, the following regulations must be obeyed:

1. With regard to road vehicles:

a) The consignor of dangerous goods must enter into an economic agreement or written arrangement, including transportation-related terms and provisions, with the operator of a transport unit licensed to carry dangerous goods, which is appropriate to specific classes of goods to be transported;

b) Where the consignor of dangerous goods does not hold a license for transportation of dangerous goods which is appropriate to the class of dangerous goods to be transported, (s)he must fully meet transportation requirements under the provisions of Article 27, 28 and 29 hereof and submit the application dossier for a license for transportation of dangerous goods by road vehicles for each shipment in accordance with laws.

2. With regard to inland waterways or rail transport units:

The consignor of dangerous goods must enter into an economic agreement or written arrangement, including transportation-related terms and provisions, with the operator of a transport unit licensed to carry dangerous goods under which the consignor is bound to meet requirements concerning safe transport and environmental protection relevant to the class of dangerous goods to be transported under the provisions of Article 27, Clause 1, 2, 3 and 4 Article 28 and Article 29 hereof.

3. Hiring of transport units carrying dangerous goods must conform to regulations of prevailing laws.

Section 3. LICENSING REQUIREMENTS FOR HAZARDOUS WASTE TREATMENT

Article 31. Licensing requirements for hazardous waste treatment

Organizations or individuals submitting the registration application for a license for hazardous waste disposal and treatment must meet requirements referred to in Article 9 of the Government's Decree No. [38/2015/ND-CP](#) dated April 24, 2015 regarding management of waste and scrap materials, and technical requirements and management procedures concerning licensing requirements for hazardous waste treatment, including:

1. Equipment or appliances used for storage, transport and treatment of hazardous wastes (including primary treatment, recycling, co-processing of, recovery of energy from hazardous wastes) must conform to technical requirements and management procedures referred to in the Appendix V of this Decree.
2. Transport units carrying hazardous wastes must be equipped with internet-connected GPS devices to identify their positions and record their trips.
3. Each piece of equipment or device shall only be allowed to get one license for hazardous waste treatment, except sea, rail and air transport units.
4. Environmental protection facilities associated with hazardous waste treatment premises and hazardous waste transit stations (where appropriate) must conform to technical requirements and management procedures referred to in the Appendix V of this Decree.
5. Organizations or individuals submitting the registration application for a license for hazardous waste treatment must fully prepare and develop contents relating to safe operation processes for facilities, equipment or devices; and plans for pollution control and environmental protection, labor safety and health protection, emergency prevention and response, annual training and drilling programs, environmental treatment and environmental protection upon termination of their operations; and environmental monitoring, operational monitoring and effectiveness assessment of hazardous waste treatment.
6. Organizations or individuals submitting the registration application for a license for hazardous waste treatment practices must design safe operation instruction boards in the simplified or flowchart form which have proportionate size and are installed at visible places on transport units, inside dangerous waste treatment premises and transit stations (if any).

Chapter V

IMPLEMENTATION RESPONSIBILITY

Article 32. Entry into force

1. This Decree shall enter into force from July 1, 2016.

2. Transitional provisions

a) Licences that organizations or individuals were granted to drill groundwater before the entry into force of this Decree shall continue their validity. Application dossiers for licenses for groundwater drilling practices that were received by competent regulatory authorities before the entry into force of this Decree shall be processed in accordance with legislative regulations prevailing at the date of reception.

Organizations or individuals obtaining decisions on approval, duty assignment or conclusion of contracts, for the purpose of implementing basic water resource investigations, or rendering consultancy services for water resource planning, or development of projects or reports included in the application dossier for a water resource license before the entry into force of this Decree shall be entitled to continue their usual work;

b) Organizations or individuals granted certificates of marketing authorization of bioproducts before the entry into force of this Decree shall be entitled to continue to use these certificates unless they are revoked or withdrawn. Any application dossier which has been received for further processing by competent regulatory authorities according to statutory administrative procedures for registration of marketing authorization of bioproducts before the entry into force of this Decree shall conform to legislative regulations prevailing at the date of such reception;

c) If licenses for transportation of dangerous goods which are hazardous or infectious substances come into effect before the entry into force of this Decree, they shall be entitled to use these licenses, unless otherwise revoked or withdrawn and re-issued. Reception, acceptance and processing of application dossiers for licenses for transportation dangerous goods which are hazardous or infectious substances before the entry into force of this Decree shall comply with legislative regulations set out upon the date thereof.

Article 33. Implementation responsibility

1. The Minister of Natural Resources and Environment shall be responsible for guiding the implementation of this Decree.

2. The Minister, Heads of Ministerial-level agencies, Heads of Government agencies, Presidents of the provincial People's Committees shall, within their jurisdiction, take responsibility for implementation of this Decree./.

**PP. THE GOVERNMENT
THE PRIME MINISTER**

Nguyen Xuan Phuc

APPENDIX I

APPLICATION FORM FOR REGISTRATION OF TRADE IN BIOLOGICAL PRODUCTS USED FOR WASTE TREATMENT

(Annexed to the Government's Decree No. 60/2016/ND-CP dated July 1, 2016)

NAME OF ORGANIZATION/ ESTABLISHMENT

THE SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

No.....

....., *Date:*.....

REGISTRATION APPLICATION

MARKETING AUTHORIZATION OF BIOLOGICAL PRODUCTS USED FOR WASTE TREATMENT IN VIETNAM

Dear.....,

Pursuant to the Government's Decree No./2016/ND-CP datedday.....month of the year 2016 providing for certain requirements for trade and investment in the environment and natural resource sector;

Name of organization/ individual as an applicant:.....

Representative's name:.....
Title:.....

Address:.....
.....

Telephone number:..... Fax number:..... E-mail address:.....

- Name of bioproduct that requires registration of marketing authorization:.....

- Manufacturing organization or individual:.....

- Manufacturing factory:.....
- Quantity of bioproducts licensed to be marketed:.....
- Telephone number:..... Fax number:.....
- Application dossier composed of:.....

(Name of organization or individual).....undertakes to observe legislative regulations on environmental protection and other relevant ones.

This is to requestto consider issuance of the registration certificate of marketing authorization of bioproducts./.

Attached documentation: **REPRESENTATIVE OF ORGANIZATION OR ESTABLISHMENT OR INDIVIDUAL AS AN APPLICANT**
(Signature, full name and stamp (if any))

APPENDIX II

FORM OF DESCRIPTION OF BIOLOGICAL PRODUCT USED FOR WASTE TREATMENT IN VIETNAM
(Annexed to the Government's Decree No. 60/2016/ND-CP dated July 1, 2016)

NAME OF ORGANIZATION/ ESTABLISHMENT

THE SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

No.....

....., *Date:*

DESCRIPTION

BIOLOGICAL PRODUCT USED FOR WASTE TREATMENT IN VIETNAM

1. Name of bioproduct:

2. Purpose of using bioproduct:

3. Type of bioproduct

Microbe

Enzyme

Extract

4. Properties of bioproduct:

a) Ingredient/Microbe 1/Measurement unit

Ingredient 1/ Microbe 1:(mol/l, %, CFU/mg, CFU/ml...)...

Ingredient n/ Microbe n:(mol/l, %, CFU/mg, CFU/ml...)

b) Properties:

d) Efficacy:

d) Environmental safety:

dd) Storage method:

e) Use instructions:

g) Origin of microbial strain with respect to microbial bioproducts:

5. Other remarks:

**REPRESENTATIVE OF
ORGANIZATION OR
ESTABLISHMENT OR INDIVIDUAL
AS AN APPLICANT**

(Signature, full name and stamp (if any))

APPENDIX III

LIST OF DANGEROUS GOODS WHICH ARE HAZARDOUS AND INFECTIOUS SUBSTANCES

(Annexed to the Government's Decree No. 60/2016/ND-CP dated July 1, 2016)

No.	Name and description	UN number	Class or division	Danger code	Weight limit beyond which a license for road transport is required
(1)	(2)	(3)	(4)	(5)	(6)
1	Methyl bromide	1062	6.1	26	0.2 tonne/load
2	Dyes, solid, toxic	1143	6.1	66	1 tonne/load
3	Acetone cyanohydrin, stabilized	1541	6.1	66	0.5 tonne/load
4	Alkaloids or their salts, solid	1544	6.1	60	1 tonne/load
5	Alkaloids or their salts, solid	1544	6.1	66	1 tonne/load
6	Ammonium arsenate	1546	6.1	60	0.1 tonne/load
7	Aniline	1547	6.1	60	1 tonne/load
8	Aniline hydrochloride	1548	6.1	60	1 tonne/load
9	Antimony compound, inorganic, solid	1549	6.1	60	1 tonne/load
10	Antimony lactate	1550	6.1	60	1 tonne/load
11	Antimony potassium tartrate	1551	6.1	60	1 tonne/load
12	Arsenic acid, liquid	1553	6.1	66	0.1 tonne/load
13	Arsenic acid, solid	1554	6.1	60	0.1 tonne/load

14	Arsenic bromide	1555	6.1	60	0.1 tonne/load
15	Arsenic compound, liquid, inorganic (including arsenates, arenites and arsenic sulphide)	1556	6.1	60	0.1 tonne/load
16	Arsenic compound, liquid, inorganic (including arsenates, arsenites and arsenic sulphide)	1556	6.1	66	0.1 tonne/load
17	Arsenic compound, solid, inorganic (including arsenates, arsenites and arsenic sulphide)	1557	6.1	60	0.1 tonne/load
18	Arsenic compound, solid, inorganic (including arsenates, asenites and arsenic sulphide)	1557	6.1	66	0.1 tonne/load
19	Arsenic	1558	6.1	60	0.1 tonne/load
20	Arsenic pentoxide	1559	6.1	60	0.1 tonne/load
21	Arsenic trichloride	1560	6.1	66	0.1 tonne/load
22	Arsenic trioxide	1561	6.1	60	0.1 tonne/load
23	Arsenic dust	1562	6.1	60	0.1 tonne/load
24	Barium compound	1564	6.1	60	1 tonne/load
25	Barium cyanide	1565	6.1	66	1 tonne/load
26	Beryllium compound	1566	6.1	60	1 tonne/load
27	Brucine	1570	6.1	66	1 tonne/load
28	Cacodylic acid	1572	6.1	60	1 tonne/load
29	Calcium arsenate	1573	6.1	60	0.1 tonne/load

30	Calcium arsenate and calcium arsenite mixture, solid	1574	6.1	60	0.1 tonne/load
31	Calcium cyanide	1575	6.1	66	1 tonne/load
32	Chlorodinitrobenzenes	1577	6.1	60	1 tonne/load
33	Chloronitrobenzenes	1578	6.1	60	1 tonne/load
34	4-Chloro-o-toluidine hydrochloride	1579	6.1	60	1 tonne/load
35	Chloropicrin	1580	6.1	66	1 tonne/load
36	Chloropicrin and methyl bromide mixture	1581	6.1	26	0.5 tonne/load
37	Chloropicrin and methyl chloride mixture	1582	6.1	26	0.5 tonne/load
38	Chloropicrin mixture	1583	6.1	66	0.5 tonne/load
39	Chloropicrin mixture	1583	6.1	60	0.5 tonne/load
40	Copper acetoarsenite	1585	6.1	60	0.2 tonne/load
41	Copper arsenite	1586	6.1	60	0.2 tonne/load
42	Copper cyanide	1587	6.1	60	0.5 tonne/load
43	Cyanides, inorganic, solid	1588	6.1	66	0.5 tonne/load
44	Cyanides, inorganic, solid	1588	6.1	60	0.5 tonne/load
45	Dichloroanilines	1590	6.1	60	1 tonne/load
46	o-Dichlorobenzene	1591	6.1	60	1 tonne/load
47	Dichloromethane	1593	6.1	60	1 tonne/load
48	Diethyl sulphate	1594	6.1	60	1 tonne/load

49	Dinitroanilines	1596	6.1	60	1 tonne/load
50	Dinitrobenzenes	1597	6.1	60	1 tonne/load
51	Dinitro-o-cresol	1598	6.1	60	1 tonne/load
52	Dinitrophenol solution	1599	6.1	60	1 tonne/load
53	Dinitrotoluenes, molten	1600	6.1	60	1 tonne/load
54	Dyes, liquid, toxic	1602	6.1	60	1 tonne/load
55	Dyes, liquid, toxic	1602	6.1	66	1 tonne/load
56	Dyes, liquid, toxic	1602	6.1	66	1 tonne/load
57	Dyes, liquid, toxic	1602	6.1	60	1 tonne/load
58	Ethylene dibromide	1605	6.1	66	1 tonne/load
59	Ferric arsenate	1606	6.1	60	0.5 tonne/load
60	Ferric arsenite	1607	6.1	60	0.5 tonne/load
61	Ferric arsenate	1608	6.1	60	0.5 tonne/load
62	Hexaethyl tetraphosphate	1611	6.1	60	1 tonne/load
63	Hexaethyl tetraphosphate and compressed gas mixture	1612	6.1	26	1 tonne/load
64	Lead acetate	1616	6.1	60	0.5 tonne/load
65	Lead arsenates	1617	6.1	60	0.1 tonne/load
66	Lead arsenites	1618	6.1	60	0.1 tonne/load
67	Lead cyanide	1620	6.1	60	0.2 tonne/load

68	London purple	1621	6.1	60	0.1 tonne/load
69	Magnesium arsenate	1622	6.1	60	0.1 tonne/load
70	Mercuric arsenate	1623	6.1	60	0.01 tonne/load
71	Mercuric chloride	1624	6.1	60	0.01 tonne/load
72	Mercuric nitrate	1625	6.1	60	0.01 tonne/load
73	Mercuric potassium cyanide	1626	6.1	66	0.01 tonne/load
74	Mercuric nitrate	1627	6.1	60	0.01 tonne/load
75	Mercuric acetate	1629	6.1	60	0.01 tonne/load
76	Mercuric ammonium chloride	1630	6.1	60	0.01 tonne/load
77	Mercury benzoate	1631	6.1	60	0.01 tonne/load
78	Mercury bromides	1634	6.1	60	0.01 tonne/load
79	Mercury cyanide	1636	6.1	60	0.01 tonne/load
80	Mercury gluconate	1637	6.1	60	0.01 tonne/load
81	Mercury iodide	1638	6.1	60	0.01 tonne/load
82	Mercury nucleate	1639	6.1	60	0.01 tonne/load
83	Mercury oleate	1640	6.1	60	0.01 tonne/load
84	Mercury oxide	1641	6.1	60	0.01 tonne/load
85	Mercury oxycyanide, desensitized	1642	6.1	60	0.01 tonne/load
86	Mercury potassium iodide	1643	6.1	60	0.01 tonne/load

87	Mercury salicylate	1644	6.1	60	0.01 tonne/load
88	Mercury sulphate	1645	6.1	60	0.01 tonne/load
89	Mercury thiocyanate	1646	6.1	60	0.01 tonne/load
90	Methyl bromide and ethylene debromide mixture, liquid	1647	6.1	66	0.01 tonne/load
91	Motor fuel anti-knock mixture	1649	6.1	66	0.5 tonne/load
92	Beta-Naphthylamine	1650	6.1	60	1 tonne/load
93	Naphthylthiourea	1651	6.1	60	1 tonne/load
94	Naphthylurea	1652	6.1	60	1 tonne/load
95	Nickel cyanide	1653	6.1	60	1 tonne/load
96	Nicotine	1654	6.1	60	0.01 tonne/load
97	Nicotine compounds or solids	1655	6.1	66	0.01 tonne/load
98	Nicotine compound or preparations thereof, solid	1655	6.1	60	0.01 tonne/load
99	Nicotine hydrochloride, liquid or solution	1656	6.1	60	0.01 tonne/load
100	Nicotine salicylate	1657	6.1	60	0.01 tonne/load
101	Nicotine sulphate, solid	1658	6.1	60	0.01 tonne/load
102	Nicotine sulphate, solution	1658	6.1	60	0.01 tonne/load
103	Nicotine tartrate	1659	6.1	60	0.01 tonne/load
104	Nitroaniline (o-, m-, p-.)	1661	6.1	60	1 tonne/load

105	Nitrobenzene	1662	6.1	60	0.01 tonne/load
106	Nitrophenols	1663	6.1	60	0.5 tonne/load
107	Nitrotoluenes, liquid	1664	6.1	60	0.5 tonne/load
108	Nitroxylenes, liquid	1665	6.1	60	0.5 tonne/load
109	Pentachloroethane	1669	6.1	60	0.5 tonne/load
110	Perchloromethyl mercaptan	1670	6.1	66	0.5 tonne/load
111	Phenol, solid	1671	6.1	60	0.5 tonne/load
112	Phenylcarbylamine chloride	1672	6.1	66	1 tonne/load
113	Phenylenediamines (o-, m-, p-)	1673	6.1	60	1 tonne/load
114	Phenylmercuric acetate	1674	6.1	60	1 tonne/load
115	Potassium arsenate	1677	6.1	60	0.2 tonne/load
116	Potassium arsenite	1678	6.1	60	0.1 tonne/load
117	Potassium cuprocyanide	1679	6.1	60	1 tonne/load
118	Potassium cyanide	1680	6.1	66	0.1 tonne/load
119	Silver arsenite	1683	6.1	60	0.1 tonne/load
120	Silver cyanide	1684	6.1	60	0.1 tonne/load
121	Sodium arsenate	1685	6.1	60	0.1 tonne/load
122	Sodium arsenite, solution	1686	6.1	60	0.1 tonne/load
123	Sodium cacodylate	1688	6.1	60	0.1 tonne/load

124	Sodium cyanide	1689	6.1	66	0.1 tonne/load
125	Sodium fluoride	1690	6.1	60	0.1 tonne/load
126	Strontium arsenite	1691	6.1	60	0.1 tonne/load
127	Strychnine or salts thereof	1692	6.1	66	1 tonne/load
128	Tear gas substance, liquid	1693	6.1	66	1 tonne/load
129	Tear gas substance, liquid	1693	6.1	60	1 tonne/load
130	Bromobenzyl cyanides	1694	6.1	66	1 tonne/load
131	Chloroacetophenone	1697	6.1	60	1 tonne/load
132	Diphenylamine chloroarsine	1698	6.1	66	0.1 tonne/load
133	Diphenylchloroarsine	1699	6.1	66	1 tonne/load
134	Xylyl bromide	1701	6.1	60	1 tonne/load
135	1,1,2,2-Tetrachloroethane	1702	6.1	60	1 tonne/load
136	Tetraethyl dithiopyrophosphate	1704	6.1	60	1 tonne/load
137	Thallium compounds	1707	6.1	60	0.1 tonne/load
138	Toluidines	1708	6.1	60	1 tonne/load
139	2,4 - Toluylenediamine	1709	6.1	60	1 tonne/load
140	Trichloroethylene	1710	6.1	60	0.05 tonne/load
141	Xylidines	1711	6.1	60	1 tonne/load
142	Zinc arsenate	1712	6.1	60	0.5 tonne/load

143	Zinc arsenate and zinc arsenite or mixture thereof	1712	6.1	60	0.5 tonne/load
144	Zinc arsenite	1712	6.1	60	0.5 tonne/load
145	Zinc cyanide	1713	6.1	66	0.5 tonne/load
146	Potassium fluoride	1812	6.1	60	1 tonne/load
147	Carbon tetrachloride	1846	6.1	60	1 tonne/load
148	Medicine, liquid, toxic	1851	6.1	60	0.01 tonne/load
149	Barium oxide	1884	6.1	60	1 tonne/load
150	Benzidine	1885	6.1	60	1 tonne/load
151	Benzylidene chloride	1886	6.1	60	0.05 tonne/load
152	Bromochloromethane	1887	6.1	60	0.05 tonne/load
153	Chloroform	1888	6.1	60	0.05 tonne/load
154	Ethyl bromide	1891	6.1	60	1 tonne/load
155	Ethylchloroarsine	1892	6.1	66	1 tonne/load
156	Phenylmercuric hydroxide	1894	6.1	60	0.05 tonne/load
157	Phenylmercuric nitrate	1895	6.1	60	1 tonne/load
158	Tetrachloroethylene	1897	6.1	60	1 tonne/load
159	Cyanide solution	1935	6.1	66	0.1 tonne/load
160	Cyanide solution	1935	6.1	60	0.1 tonne/load
161	Compressed gas, toxic	1955	6.1	26	0.1 tonne/load

162	Chloroanilines, solid	2018	6.1	60	1 tonne/load
163	Chloroanilines, liquid	2019	6.1	60	1 tonne/load
164	Chlorophenols, solid	2020	6.1	60	1 tonne/load
165	Chlorophenols, liquid	2021	6.1	60	1 tonne/load
166	Mercury compound, liquid	2024	6.1	66	0.01 tonne/load
167	Mercury compound, liquid	2024	6.1	60	0.01 tonne/load
168	Mercury compound, solid	2025	6.1	60	0.01 tonne/load
169	Mercury compound, solid	2025	6.1	66	0.01 tonne/load
170	Phenylmercuric compound	2026	6.1	66	0.01 tonne/load
171	Phenylmercuric compound	2026	6.1	60	0.01 tonne/load
172	Sodium arsenite, solid	2027	6.1	60	0.05 tonne/load
173	Dinitrotoluenes	2038	6.1	60	0.1 tonne/load
174	Acrylamide	2074	6.1	60	0.1 tonne/load
175	Chloral, anhydrous, stabilized	2075	6.1	60	1 tonne/load
176	alpha-Naphthylamine	2077	6.1	60	1 tonne/load
177	Toluene diisocyanate	2078	6.1	60	0.5 tonne/load
178	Sulphuryl fluoride	2191	6.1	26	1 tonne/load
179	Adiponitrile	2205	6.1	60	1 tonne/load
180	Isocyanates solution, toxic	2206	6.1	60	1 tonne/load

181	Isocyanates, toxic	2206	6.1	60	1 tonne/load
182	Benzonitrile	2224	6.1	60	1 tonne/load
183	Chloroacetaldehyde	2232	6.1	66	1 tonne/load
184	Chloroanisidines	2233	6.1	60	1 tonne/load
185	Chlorobenzyl chlorides	2235	6.1	60	1 tonne/load
186	3-Chloro-4-methylphenyl isocyanate	2236	6.1	60	1 tonne/load
187	Chloronitroanilines	2237	6.1	60	1 tonne/load
188	Chlorotoluidines	2239	6.1	60	1 tonne/load
189	Dichlorophenyl isocyanates	2250	6.1	60	1 tonne/load
190	N,N-Dimethylaniline	2253	6.1	60	1 tonne/load
191	Xylenols	2261	6.1	60	1 tonne/load
192	N-Ethylaniline	2272	6.1	60	1 tonne/load
193	2-Ethylaniline	2273	6.1	60	1 tonne/load
194	N-Ethyl-N-benzylaniline	2274	6.1	60	1 tonne/load
195	Hexachlorobutadiene	2279	6.1	60	1 tonne/load
196	Hexamethylene diisocyanate	2281	6.1	60	1 tonne/load
197	Isophorone diisocyanate	2290	6.1	60	0.1 tonne/load
198	Lead compound, soluble, or unless otherwise described	2291	6.1	60	1 tonne/load
199	N-Methylaniline	2294	6.1	60	1 tonne/load

200	Methyl dichloroacetate	2299	6.1	60	1 tonne/load
201	2-Methyl-5-ethylpyridine	2300	6.1	60	1 tonne/load
202	Nitrobenzotrifluorides	2306	6.1	60	1 tonne/load
203	3-Nitro-4-chlorobenzotrifluoride	2307	6.1	60	1 tonne/load
204	Phenetidines	2311	6.1	60	1 tonne/load
205	Phenol, molten	2312	6.1	60	0.5 tonne/load
206	Sodium cuprocyanide, solid	2316	6.1	66	0.5 tonne/load
207	Sodium cuprocyanide, solution	2317	6.1	66	0.5 tonne/load
208	Trichlorobenzens, liquid	2321	6.1	60	0.1 tonne/load
209	Trichlorobutene	2322	6.1	60	1 tonne/load
210	Trimethylhexamethylene diisocyanate	2328	6.1	60	1 tonne/load
211	Anisidines	2431	6.1	60	1 tonne/load
212	N,N-Diethylaniline	2432	6.1	60	1 tonne/load
213	Chloronitrotoluenes	2433	6.1	60	1 tonne/load
214	Nitrocresols (o-, m-, p-.)	2446	6.1	60	1 tonne/load
215	Phenylacetonitrile, liquid	2470	6.1	60	1 tonne/load
216	Osmium tetroxide	2471	6.1	66	1 tonne/load
217	Sodium arsanilate	2473	6.1	60	1 tonne/load
218	Thiophosgene	2474	6.1	60	1 tonne/load

219	Dichloroisopropyl ether	2490	6.1	60	1 tonne/load
220	Tris-(1-aziridiny) phosphine oxide solution	2501	6.1	60	1 tonne/load
221	Tetrabromoethane	2504	6.1	60	1 tonne/load
222	Ammonium fluoride	2505	6.1	60	1 tonne/load
223	Aminophenols (o-, m-, p-.)	2512	6.1	60	1 tonne/load
224	Bromoform	2515	6.1	60	1 tonne/load
225	Carbon tetrabromide	2516	6.1	60	1 tonne/load
226	1,5,9-Cyclododecatriene	2518	6.1	60	1 tonne/load
227	2-Dimethylaminoethyl methacrylate	2522	6.1	69	1 tonne/load
228	Ethyl oxalate	2525	6.1	60	1 tonne/load
229	Methyl trichloroacetate	2533	6.1	60	1 tonne/load
230	Tributylamine	2542	6	60	1 tonne/load
231	Hexafluoroacetone hydrate	2552	6.1	60	1 tonne/load
232	Sodium pentachlorophenate	2567	6.1	60	0.1 tonne/load
233	Cadmium compound	2570	6.1	66	0.01 tonne/load
234	Cadmium compound	2570	6.1	60	0.01 tonne/load
235	Phenylhydrazine	2572	6.1	60	1 tonne/load
236	Tricresyl phosphate	2574	6.1	60	1 tonne/load
237	Benzoquinone	2587	6.1	60	1 tonne/load

238	Triallyl borate	2609	6.1	60	1 tonne/load
239	Potassium fluoroacetate	2628	6.1	66	0.1 tonne/load
240	Sodium fluoroacetate	2629	6.1	66	0.1 tonne/load
241	Selenates	2630	6.1	66	1 tonne/load
242	Selenites	2630	6.1	66	1 tonne/load
243	Fluoroacetic acid	2642	6.1	66	0.5 tonne/load
244	Methyl bromoacetate	2643	6.1	60	1 tonne/load
245	Methyl iodide	2644	6.1	66	1 tonne/load
246	Phenacyl bromide	2645	6.1	60	1 tonne/load
247	Hexachlorocyclopentadiene	2646	6.1	66	0.1 tonne/load
248	Malononitrile	2647	6.1	60	0.1 tonne/load
249	1,2-Dibromobutan-3-one	2648	6.1	60	1 tonne/load
250	1,3-Dichloroacetone	2649	6.1	60	1 tonne/load
251	1,1-Dichloro-1-nitroethane	2650	6.1	60	1 tonne/load
252	4,4'-Diaminodiphenylmethane	2651	6.1	60	1 tonne/load
253	Benzyl iodide	2653	6.1	60	1 tonne/load
254	Potassium fluorosilicate	2655	6.1	60	1 tonne/load
255	Quinoline	2656	6.1	60	1 tonne/load
256	Selenium disulphide	2657	6.1	60	1 tonne/load

257	Sodium chloroacetate	2659	6.1	60	1 tonne/load
258	Nitrotoluidines (mono)	2660	6.1	60	1 tonne/load
259	Hexachloroacetone	2661	6.1	60	1 tonne/load
260	Hydroquinone	2662	6.1	60	0.1 tonne/load
261	Dibromomethane	2664	6.1	60	1 tonne/load
262	Butyltoluenes	2667	6.1	60	1 tonne/load
263	Chlorocresols	2669	6.1	60	1 tonne/load
264	Aminopyridines (o-, m-, p-)	2671	6.1	60	1 tonne/load
265	2-Amino-4-chlorophenol	2673	6.1	60	1 tonne/load
266	Sodium fluorosilicate	2674	6.1	60	1 tonne/load
267	1-Bromo-3-chloropropane	2688	6.1	60	1 tonne/load
268	Glycerol alpha-monochlorohydrin	2689	6.1	60	1 tonne/load
269	N,n-Butylimidazole	2690	6.1	60	1 tonne/load
270	Acridine	2713	6.1	60	1 tonne/load
271	1,4-Butynediol	2716	6.1	60	0.1 tonne/load
272	Hexachlorobenzene	2729	6.1	60	1 tonne/load
273	Nitroanisole, liquid	2730	6.1	60	1 tonne/load
274	Nitrobromobenzene	2732	6.1	60	1 tonne/load
275	N-Butylaniline	2738	6.1	60	1 tonne/load

276	Tert-Butylcyclohexyl chloroformate	2747	6.1	60	1 tonne/load
277	1,3-Dichloropropanol-2	2750	6.1	60	1 tonne/load
278	N-Ethylbenzyltoluidines	2753	6.1	60	1 tonne/load
279	N-Ethyltoluidines	2754	6.1	60	1 tonne/load
280	4-Thiapentanal	2785	6.1	60	1 tonne/load
281	Organotin compound, liquid or unless otherwise described	2788	6.1	66	0.01 tonne/load
282	Toxic liquid, organic	2810	6.1	66	0.01 tonne/load
283	Toxic liquid, organic	2810	6.1	60	0.01 tonne/load
284	Toxic solid, organic	2811	6.1	66	0.01 tonne/load
285	Toxic solid, organic	2811	6.1	60	0.01 tonne/load
286	Infectious substances affecting humans	2814	6.2	606	0.01 tonne/load
287	Phenol solution	2821	6.1	60	0.5 tonne/load
288	2-Chloropyridine	2822	6.1	60	1 tonne/load
289	1,1,1 - Trichloroethane	2831	6.1	60	1 tonne/load
290	Aldol	2839	6.1	60	1 tonne/load
291	3-Chloropropanol-1	2849	6.1	60	1 tonne/load
292	Magnesium fluorosilicate	2853	6.1	60	1 tonne/load
293	Ammonium fluorosilicate	2854	6.1	60	1 tonne/load
294	Zinc fluorosilicate	2855	6.1	60	1 tonne/load

295	Fluorosilicates	2856	6.1	60	1 tonne/load
296	Ammonium metavanadate	2859	6.1	60	1 tonne/load
297	Ammonium polyvanadate	2861	6.1	60	1 tonne/load
298	Vanadium pentoxide	2862	6.1	60	1 tonne/load
299	Sodium ammonium vanadate	2863	6.1	60	1 tonne/load
300	Potassium metavanadate	2864	6.1	60	1 tonne/load
301	Antimony powder	2871	6.1	60	1 tonne/load
302	Dibromochloropropanes	2872	6.1	60	1 tonne/load
303	Dibutylaminoethanol	2873	6.1	60	1 tonne/load
304	Furfuryl alcohol	2874	6.1	60	1 tonne/load
305	Hexachlorophene	2875	6.1	60	1 tonne/load
306	Resorcinol	2876	6.1	60	1 tonne/load
307	Infectious substances affecting animals only	2900	6.2	606	0.5 tonne/load
308	Vanadyl sulphate	2931	6.1	60	1 tonne/load
309	Thiolactic acid	2936	6.1	60	1 tonne/load
310	Alpha – Methylbenzyl alcohol	2937	6.1	60	1 tonne/load
311	Fluoroanilines	2941	6.1	60	1 tonne/load
312	2-Trifluoromethylaniline	2942	6.1	60	1 tonne/load
313	2-Amino-5-diethylaminopentane	2946	6.1	60	1 tonne/load

314	3-Trifluoromethylaniline	2948	6.1	60	1 tonne/load
315	Thioglycol	2966	6.1	60	1 tonne/load
316	Alkaloids or their salts, liquid	3140	6.1	60	1 tonne/load
317	Alkaloids or their salts, liquid	3140	6.1	66	1 tonne/load
318	Antimony compound, inorganic, liquid	3141	6.1	60	1 tonne/load
319	Dyes or dye intermediate, solid, toxic	3143	6.1	66	1 tonne/load
320	Dyes or dye intermediate, solid, toxic	3143	6.1	60	1 tonne/load
321	Dyes or dye intermediate, solid, toxic	3143	6.1	66	1 tonne/load
322	Nicotine compound or preparations thereof, liquid	3144	6.1	66	0.01 tonne/load
323	Nicotine compound or preparations thereof, liquid	3144	6.1	66	0.01 tonne/load
324	Organotin compound, solid	3146	6.1	60	0.01 tonne/load
325	Organotin compound, solid	3146	6.1	66	0.01 tonne/load
326	Pentachlorophenol	3155	6.1	60	0.01 tonne/load
327	Liquefied gas, toxic	3162	6.1	26	1 tonne/load
328	Toxins, extracted from living sources	3172	6.1	66	0.1 tonne/load
329	Toxins, extracted from living sources	3172	6.1	60	0.1 tonne/load
330	Solids containing toxic liquid	3243	6.1	60	0.1 tonne/load
331	Medicine, solid, toxic	3249	6.1	60	0.1 tonne/load

332	Nitriles, toxic, liquid	3276	6.1	66	1 tonne/load
333	Nitriles, toxic, liquid	3276	6.1	60	1 tonne/load
334	Orgnophosphorus compound, toxic	3278	6.1	66	0.1 tonne/load
335	Orgnophosphorus compound, toxic	3278	6.1	60	0.1 tonne/load
336	Organoarsenic compound, liquid	3280	6.1	66	0.1 tonne/load
337	Organoarsenic compound, liquid	3280	6.1	60	0.1 tonne/load
338	Metal carbonyls, liquid	3281	6.1	60	1 tonne/load
339	Metal carbonyls, liquid	3281	6.1	66	1 tonne/load
340	Organometallic compound, toxic, liquid	3282	6.1	60	0.1 tonne/load
341	Organometallic compound, toxic, liquid	3282	6.1	66	0.1 tonne/load
342	Selenium compound	3283	6.1	60	1 tonne/load
343	Selenium compound	3283	6.1	66	1 tonne/load
344	Tellurium compound	3284	6.1	60	1 tonne/load
345	Vanadium compound	3285	6.1	60	1 tonne/load
346	Toxic liquid, inorganic	3287	6.1	60	0.1 tonne/load
347	Toxic liquid, inorganic	3287	6.1	66	0.1 tonne/load
348	Toxic solid, inorganic	3288	6.1	66	0.1 tonne/load
349	Toxic solid, inorganic	3288	6.1	60	0.1 tonne/load
350	Clinical waste	3291	6.2	606	0.1 tonne/load

351	Hydrazine, aqueous solution	3293	6.1	60	0.1 tonne/load
352	2-Dimethylaminoethyl acrylate	3302	6.1	60	1 tonne/load

Note: The Column (5) – Danger code refers to a two or three-digit code presenting physical or chemical properties of specific classes or divisions of dangerous goods in transit (26: toxic gas, 60: toxic substance, 66: substance with high toxicity, or 606: infectious substance) in accordance with the UN instructions for transport of dangerous goods, including:

- If the initial digit is 6, it indicates the toxic substance or the substance posing risk of infection; if the initial digit is 2, it indicates emission of gas as a result of pressure or chemical reactions;
- If the second digit repeats the initial digit, this indicates an increase in hazard; if the second digit is the number 0, this indicates the accurate hazard property of loads.

APPENDIX IV

PLAN FOR RESPONSE TO ENVIRONMENTAL INCIDENTS OR EMERGENCIES OCCURRING DURING TRANSPORTATION OF DANGEROUS GOODS (Annexed to the Government's Decree No. 60/2016/ND-CP dated July 1, 2016)

I. DETAILS ABOUT CLASSES OF DANGEROUS GOODS IN TRANSIT

1. Name, class, division, UN number, CAS code and danger code
2. Quantity
3. Transportation schedule (time and location (origin, transit and destination point)).
4. Description of packaging, containing objects and carrier (illustration photo attached as appropriate), including:
 - a) Types of packaging or containing object that may be used for transportation; packaging material and quantity;
 - b) Technical specification requirements for packaging and containing object and applicable standards issued by a manufacturer; storage conditions;
 - c) Requirements for hazard labeling, placarding and marking;
 - d) Proposed transport unit and conformance to requirements concerning fire safety, protective cover for dangerous goods, and equipment or materials used for response to emergencies.

II. FORECAST OF ENVIRONMENTAL INCIDENTS OR EMERGENCIES OCCURRING DURING TRANSPORTATION OF DANGEROUS GOODS

1. Forecast of risks, such as leakage, spill, fire, explosion or theft.
2. Determination of conditions and intrinsic causes and outside effects that may lead to any incident or emergency.
3. Anticipation of consequences that may arise, scope and extent of impact on humans and surrounding environment in case of failure to control an incident or emergency.

III. MEASURES TO CONTROL, RESPOND TO AND MITIGATE ENVIRONMENTAL INCIDENTS

1. Measures to control, respond to and mitigate environmental incidents must be specific and equivalent to risks of incidents.
2. Description of administrative measures and procedures, technical measures to collect and clean contaminated areas (with respect to surface water, groundwater, land and air,...)

IV. COMPETENCY IN RESPONDING TO AND MITIGATING ENVIRONMENTAL INCIDENTS

1. Description of conditions and quality of devices and equipment items used for responding to and mitigating any incident or emergency (type, quantity, functions/ characteristics of such device and equipment, etc.): sawdust, sand or diatonic soil, shovel, empty barrel, hand pump and pipe,...
2. Description of conditions and quantity of personal protective equipment (polylaminated protective suits, gloves (viton, nitrile or vitrile); boots; poison prevention masks, powder fire extinguishers, etc.)
3. Description of personnel involved in response to and mitigation of an incident or emergency
 - a) Description of organizational and operational system and the system directly involved in incident or emergency response;
 - b) Plan for resident, property evacuation from areas affected by danger or hazard, which is specific to different emergency situations;
 - c) Description of the system for internal and external communications in case of emergency or incident:
 - Name and phone numbers of consignor of dangerous goods load, carrier and operator or driver of transport unit and his mate.
 - Phone numbers of a regulatory authority having competence in issuing licenses for transport of dangerous goods; environmental management agency, fire police authority, environmental police authority and other relevant local authorities according to the trip schedule.
 - Description of the plan for cooperation between relevant authorities.

....., *date:*.....

**Operator of transport unit/ consignor of
dangerous goods**

(Signature, stamp)

APPENDIX V

TECHNICAL REQUIREMENTS, ADMINISTRATION PROCEDURES WITH RESPECT TO OWNERS OF HAZARDOUS WASTE TREATMENT PREMISES

(Annexed to the Government's Decree No. 60/2016/ND-CP dated July 1, 2016)

I. HAZARDOUS WASTE PACKAGING

1. Hazardous waste packaging (whether the outer layer is stiff or soft) must meet the following general requirements:

a) The outer layer of packaging must be anti-corrosive, stainless and non-reactive with hazardous waste inside, and have the properties of water resistance or non-permeability, and anti-leakage, especially at connection and waste inlet and discharge points; the packaging must be soft with at least 02 layers.

b) Have the properties of anti-collision, prevent any damage, wear and tear due to weight of waste substance during normal use.

c) Soft packaging must be closely fastened while stiff one has the closed cover to prevent any spill or gas emission.

d) Liquid wastes, viscous waste sludges, or any waste that has evaporative hazardous ingredients, must be contained in stiff packaging.

2. The labeling of hazardous waste must be displayed on the packaging. If only one class or division of hazardous waste is transported, it is not necessary to display separate hazard labels on specific packaging but using a hazard label for the entire load.

II. HAZARDOUS WASTE STORAGE EQUIPMENT

1. Storage equipment items with stiff outer layers and greater size than common packaging, such as tanks, basins or containers, etc., used for storage of hazardous wastes, must meet the following general requirements:

a) The outer layer of packaging must be anti-corrosive, stainless and non-reactive with hazardous waste inside, and have the properties of water resistance, and must be reinforced or

specially designed at connection, waste loading, unloading, inlet and discharge points for the purpose of leakage control.

b) Have the properties of anti-collision, prevent any damage, deformation, wear and tear due to weight of waste substance during normal use.

c) Display hazard or danger warning signs or markings in accordance with legislative regulations.

2. Equipment for storage of liquid hazardous wastes or hazardous wastes composed of evaporative toxic ingredients must have a tightly closed cover and provide evaporation control measures.

3. If hazardous waste storage equipment does not contain evaporative toxic ingredients, a closed cover may be unnecessary, but it must be designed with bulging or other measures to completely prevent or control sunlight or rain and direct wind to get inside.

III. HAZARDOUS WASTE STORAGE OR TRANSIT AREA

1. This area must meet the following general requirements:

a) Meet floor height requirements for flood prevention; have the floor level which is designed to prevent rain water from getting inside.

b) Have sealed floor without gaps or cracks, be made of materials that have the property of water resistance, anti-abrasion and non-reaction with hazardous wastes inside; build the floor with high durability to tolerate the maximum amount of weight of hazardous wastes as properly calculated; have walls and partitions made of fire-resistant materials.

c) Provide bulging prevent sunlight and rain for the entire area of storage which is made of fire-resistant materials, except if hazardous waste storage equipment has volume of more than 05 m³, it will be placed outdoors; propose any measure or design to restrict wind from getting inside.

d) Keep specific hazardous wastes or groups thereof which have the same properties in cells or sections separated by fire-resistant partitions higher than the loads of these hazardous goods to prevent any chemical reaction with others.

2. Storage and transit areas must meet statutory construction requirements.

3. Storage or transit areas of liquid hazardous wastes must have walls, bunds or embankments built around all or a part of an area, or provide other secondary containment measures as a contingency plan to prevent any spreading of hazardous wastes out into the surrounding environment in emergency cases; must be endorsed by trenches built around the area to collect hazardous wastes into pits at the lower position than floor level to control overflow of such hazardous wastes.

4. The area for storage and transit of flammable, combustible and explosive hazardous wastes must be no less than 10 m from an incinerator, boiler and other burning equipment.

5. Infectious medical waste containment facility must have cold storage system.
6. Hazardous waste storage or transit area must be equipped with:
 - a) Fire safety equipment (at least including foam fire extinguishers and fire extinguishing and sand) under the instructions of competent regulatory authorities regarding fire safety and protection as referred to in legislative regulations on fire safety.
 - b) Absorbent materials (such as dry sand or sawdust) and shovels used in case of spillages, leakages or overflows of liquid hazardous wastes.
 - c) First aid boxes; emergency baking soda containers used for neutralizing acid burns in case of storage of wastes having acid properties.
 - d) Handling equipment (manual or mechanical).
 - dd) Communications devices (fixed or portable telephones).
 - e) Warning systems (such as sirens, horns, bells, alarms and loudspeakers).
 - g) Each cell or section of storage or transit area, and containing equipment, must display hazardous waste markings in accordance with relevant regulations.
 - h) Fire escape maps and instructions (fire exit or escape signs) must be installed at all visible points of corridors, passageways or aisles.
 - i) Simplified instruction boards regarding safe operation procedures for storage or transit areas, emergency response processes (including the list of telephone numbers of environmental regulators, police, emergency and fire fighting authorities within local jurisdictions), internal rules of labor safety and health protection (including orders for use of personal protective equipment). They must have proper measurement and must be visible to operators, and must be clear, easy to read and unblurred.

IV. TRANSPORT UNIT OF HAZARDOUS WASTES

1. Transport units used for carrying hazardous wastes must meet requirements with respect to technical safety and environmental protection as provided for those of same type in accordance with legislative regulations.
2. Hazardous waste storage equipment which may be either fixed or movable on transport units must conform to requirements referred to in Section II of this Appendix.
3. Particular requirements for several transport units carrying hazardous wastes shall include:
 - a) Fixed body trucks must attach tanks or boxes collecting liquids which are placed underneath their bodies.
 - b) Containers or movable truck bodies must be fixed to trucks before operation.

c) Open body trucks must be prevented from exposure to sunlight or rain by fabric covers once they are loaded with hazardous wastes.

d) Tankers and ship's holds of bulk liquid hazardous wastes must have evaporation control measures.

dd) Unloading dump trucks must have closed fabric hoods to protect hazardous wastes from sunlight or rain, and shall only be used in special cases under the instructions of the Vietnam Environment Administration.

e) Motorbikes or mopeds must have boxes tightly attached to cargo rear racks. The size of a cargo box mounted on a motorcycle or moped must comply with traffic regulations.

4. Zones for storage of hazardous wastes carried on ships or barges must meet the following requirements:

a) Ensure that floors and enclosure walls are liquid-tight, especially where they join together, made of materials which are impermeable, fireproof, anti-corrosive and chemically non-reactive with hazardous wastes; build floors which are durable enough to tolerate the maximum weight of hazardous waste load as specifically calculated. b) Provide bulging, roofing and fabric cover against sunlight and rain, except where hazardous waste equipment with the volume of more than 02 m³ is placed outside; provide any technical solution or design to prevent wind from directly getting inside.

5. Cargo transport units, when carrying hazardous wastes, must be equipped with the followings:

a) Firefighting equipment (at least foam fire extinguisher) as provided for by legislative regulations on fire safety and prevention.

b) Absorbent materials (such as dry sand or sawdust) and shovels used in case of spillages, leakages or overflows of liquid hazardous wastes.

c) First aid boxes; emergency baking soda containers used for neutralizing acid burns in case of storage of wastes having acid properties.

dd) Communications devices (fixed or portable telephones).

dd) Warning markings or labels specific to classes of hazardous wastes in transit which are flexibly installed at the minimum of two opposing sides of a transport unit; the words "WASTE TRANSPORTATION" printed at the font size or height of 15 cm along with shipper's name, address and telephone number which are displayed at the minimum of two opposing sides of a transport unit; materials and ink used for printing warning markings, and the said words, which are not blurred and faded. With respect to mopeds, the size of these markings or labels must meet practical conditions.

e) Emergency or incident signs used for notifying other traffic participants in case of road accidents or emergencies.

g) Simplified instruction boards regarding safe operation procedures for equipment transporting, loading or unloading, intake or discharge of hazardous wastes (including the list of telephone numbers of environmental regulators, police, emergency and fire fighting authorities within local jurisdictions where they are operating), internal rules of labor safety and health protection (including orders for use of personal protective equipment) which are displayed at cabins or control zones in accordance with legislative regulations, and which are clear, easy to read and unblurred.

V. HAZARDOUS TREATMENT SYSTEM OR EQUIPMENT

1. Technology and capacity of hazardous waste treatment system or equipment (including primary treatment, recycling, co-processing of, recovery of energy from hazardous wastes (hereinafter referred to as hazardous waste treatment)) must be specific to chemical, physical, biological properties, and proportionate to the quantity of hazardous wastes of different classes that require hazardous waste treatment.

2. Specific requirements for several hazardous waste systems or equipment items shall be composed of the followings:

a) Hazardous waste incinerators comply with the Technical environmental regulations on industrial waste incinerators. Hazardous waste incinerator must have the capacity of not less than 100 kg/hour, except the cases in which reports on environmental impact assessment are approved or licenses are issued before June 1, 2011.

b) Gas emissions from co-processing of hazardous wastes in cement kilns must conform to provisions laid down in the National environmental regulations concerning co-processing of hazardous wastes in cement kilns.

c) Products collected from hazardous waste solidification or stabilization processes must comply with provisions laid down in the National environmental regulations regarding hazardous waste thresholds.

d) Encapsulating hazardous wastes in concrete tanks or containers (also called encapsulation tank) must meet the following requirements:

- Encapsulation tanks shall take the three forms such as underground, semi-buried and surface tanks.

- The bottom size of each tank shall not exceed 100 m² and the height of each tank shall not exceed 05 m. Where there is more than one tank, these tanks must be constructed without a shared wall, except when total size of tanks is less than 100 m².

- The wall and bottom of an encapsulation tank must be made of rigid and impermeable steel-reinforced concrete (beam girders should be used as necessary to increase load bearing capacity) and should be constructed on reinforced soil (piles should be used in case of weak soil) in order to prevent any depression resulting in cracks or collapses, leaks and permeation in accordance with technical construction regulations and standards.

A lining layer should be constructed around walls (the sub-surface part of a tank) and underneath the tank bottom, at least including the following materials: clay with permeability coefficient $K \leq 10^{-7}$ cm/s tightly compressed to have a thickness of ≥ 60 cm; membrane made of HDPE, PVC, butyl rubber, neoprene synthetic rubber or equivalent material with ≥ 02 mm thickness.

- The encapsulation tank must be roofed to prevent sunlight or rain for the entire tank surface, and solutions to preventing wind from directly getting inside each tank must be available from the stage of operation to that of closing of each tank.

- After being filled, each tank must be closed by a rigid and impermeable reinforced concrete cover under the provisions of technical regulations or standards concerning construction; such cover must be spread over the entire surface of this tank to completely prevent any leakage or permeation; the cover of each tank must have an additional lining layer as referred to in subparagraph 4 paragraph d clause 2 section V of this Appendix.

- If the tank surface, after being tightly closed, is used for other purposes (except roads for transport vehicles), the weight of objects laying above the tank surface shall not exceed 25% of its bearing capacity as calculated in advance.

3. During the period when the Technical environmental regulations on hazardous waste landfills are not available, design and construction of a hazardous waste landfill must comply with contents of reports on environmental impact assessment, decisions on approval of such reports on the basis of the construction standards TCXDVN 320:2004 regarding hazardous waste landfills – Design standards. Operation of hazardous waste landfills must conform to contents of licenses for hazardous waste treatment on the basis of the Decision No. 60/2002/QĐ-BKHCMNT dated August 7, 2002 of the Minister of Natural Resources and Environment providing the technical guidance on disposal and burial of hazardous wastes.

4. The area for installation of hazardous waste treatment systems or equipment must be equipped with the followings:

a) Fire safety equipment (at least including foam fire extinguishers and fire extinguishing and sand) under the instructions of competent regulatory authorities regarding fire safety and protection as referred to in legislative regulations on fire safety.

b) Absorbent materials (such as dry sand or sawdust) and shovels used in case of spillages, leakages or overflows of liquid hazardous wastes.

c) First aid kit. First aid boxes, and emergency baking soda containers used for neutralizing acid burns in case of treatment of wastes having acid properties, must be kept in place.

d) Communications devices (fixed telephones).

dd) Alarming systems (such as sirens, horns, bells, alarms and loudspeakers).

e) Fire escape maps and instructions (fire exit or escape signs) must be installed at all visible points of corridors, passageways or aisles.

g) Simplified instruction boards regarding safe operation procedures for these systems or equipment, and emergency response processes (including the list of telephone numbers of environmental regulators, police, emergency and fire fighting authorities within local jurisdictions), internal rules of labor safety and health protection (including orders for use of personal protective equipment). They must have proper measurement and must be visible to operators, and must be clear, easy to read and unblurred.

5. With respect to hazardous waste systems or equipment items used for high-temperature treatment of ignitable or explosive hazardous wastes, an alarming and automatic shutdown system used in case of unsafe operations must be operated in parallel with the manual one.

VI. GENERAL REQUIREMENTS WITH RESPECT TO ENVIRONMENTAL PROTECTION WORKS AND MEASURES

1. Have environmental protection works to treat exhaust gases emitted from all operations taking place at hazardous waste treatment and transit premises (where appropriate) to ensure conformity with the prevailing Technical environmental regulations before discharge of these gases out into the surrounding environment, or adopt other exhaust gas control measures.

2. Have environmental protection works to treat sewage emitted from all operations taking place at hazardous waste treatment and transit premises (where appropriate) to ensure conformity with the prevailing Technical environmental regulations before discharge of these sewage out into the surrounding environment, or adopt other sewage control measures.

3. Areas where environmental protection works are constructed for treatment of exhaust gases or sewage must have notice boards of simplified instructions on safe operation processes which have proper size and position to be visible to operators, are printed in a clear, readable and unblurred manner.

4. Provide either forced or natural ventilation, or air conditioning measures, inside warehouses, factories to reduce harmful dusts, odor or gases, and maintain the temperature of less than 35°C (except when the outdoor temperature is higher than 35°C.)

5. Have noise and vibration control measures in case of such noise or vibration produced in excess of statutory limits referred to in applicable regulatory standards or technical environmental regulations.

6. The system or equipment for treatment of hazardous wastes containing an amount of organic halogen ingredient which exceeds stipulated hazardous waste threshold referred to in the Technical environmental regulations on hazardous waste thresholds must be supported by automatic and continuous environmental monitoring devices, except for treatment of hazardous wastes by using solidification or burying methods. In other circumstances, automatic and continuous environmental monitoring devices shall be required upon the request of the authority having competence in approving reports on environmental impact assessment, or of licensing authorities. Monitoring parameters shall be set out by these authorities by taking into consideration practical situations with reference to the applicable technical environmental regulations.

VII. OTHER PROVISIONS

1. Notwithstanding technical requirements referred to in this Appendix, equipment or facilities used for collection, carriage, storage and treatment of hazardous wastes in the healthcare sector must comply with prevailing regulations on healthcare waste management.

2. Where there are technical environmental regulations with respect to each equipment or facility used for collection, movement, storage and treatment of hazardous wastes, these regulations shall prevail.