UN/SCETDG/58/INF.43
UN/SCEGHS/40/INF.16

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

29 June 2021

Sub-Committee of Experts on the Transport of Dangerous Goods

Fifty-eighth session
Geneva, 28 June-2 July 2021
Item 14 of the provisional agenda
Other business

Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals

Fortieth session
Geneva, 5-7 July 2021
Item 6 of the provisional agenda
Other business

UN/OECD seminar in follow-up to the 2020 Beirut port explosion: Lessons learned, experiences and good practices of ammonium nitrate storage and handling, and related accident prevention, preparedness and response: Invitation to contribute

Transmitted by the secretariat to the UNECE Convention on the Transboundary Effects of Industrial Accidents

1. At the eleventh meeting of the Conference of the Parties to the UNECE Convention on the Transboundary Effects of Industrial Accidents (Geneva and online, 7-9 December 2020), the European Union raised the issue of the accident in the port of Beirut on 4 August 2020, and considered it worthwhile to have an exchange of views on if and how that accident could have been handled under the Convention. It suggested that the Bureau prepare a proposal to facilitate a discussion on that topic (ECE/CP.TEIA/42, para. 87). The secretariat responded positively to this invitation, while stating the importance of bringing on board partner organizations for such an event. The seminar has thus been included in the Convention's final workplan for the period 2021-2022 (ECE/CP.TEIA/42/Add.1) and its organization by the secretariat, in cooperation with partner organization, approved the Convention's Bureau.

2. The secretariat to the Industrial Accidents Convention, hosted by the UNECE Environment Division, has thus reached out to the secretariats to the sub-committees of Experts on the Transport of Dangerous Goods (TDG) and on the Globally Harmonized System on the Classification and Labelling of Chemicals (GHS), serviced by the Sustainable Transport Division, who confirmed their partnership in the co-organization of the event. On this basis, UNECE, has set up an Organizing Committee comprised of the secretariats to the Industrial Accidents Convention (lead) and to the TDG and GHS sub-committees, as well as the following partner organizations: the International Labour Organization (ILO), the International Maritime Organization (IMO), the Organisation for Economic Cooperation and Development (OECD), the United Nations Environment Programme and United Nations Office for the Coordination of Humanitarian Affairs (UNEP/OCHA) Joint Environment Unit, and the United Nations Office for Disaster Risk Reduction (UNDRR) Regional Office for Arab States.

3. UNECE also facilitated the establishment of an Advisory Group, comprised of experts from the partners' constituencies, to advise the Organizing Committee. The Advisory Group is currently comprised of the following members nominated through the Bureau of the Industrial Accident Convention, incl. from Austria (Mr. Michael Struckl, Chair of the

Advisory Group, Vice-Chairs of the Convention), France (Ms. Marie-Astrid Soenen and Mr. Guy Marlair, Ineris), the European Union Joint Research Center (Ms. Maureen Wood, Major Accident Hazards Bureau, European Commission Joint Research Centre), Germany (Dr. Heike Michael-Schulz, Federal Institute for Materials Research and Testing (BAM)), Latvia (Mr. Ivars Nakurts, Civil Protection Department, State Fire and Rescue Service), Norway (Ms. Torill Tandberg, Chair of the Convention), Sweden (Mr. Lorens Van Dam, Swedish Civil Contingency Agency) and Switzerland (Mr. Martin Merkofer, Federal Office for the Environment, Vice-Chair of the Convention); and through the Bureau to the OECD Working Party on Chemical Accidents, incl. from Germany (Mr. Mark Hailwood, Landesanstalt für Umwelt Baden-Württemberg, Germany), the United Kingdom (Ms. Rachel McCann, Health and Safety Executive and Chair of the OECD Working Party on Chemical Accidents) and the United States (Mrs. Deanne Grant, Environmental Protection Agency). The German and Swedish members participate in the work of the TDG and GHS sub-committees.

4. The seminar will focus on lessons learned from the port of Beirut and other ammonium nitrate explosions, experiences and good practices of ammonium nitrate storage and handling, as well as related accident prevention, preparedness and response measures. It provides an opportunity to bring together the industrial safety (accident prevention, preparedness and response), disaster risk reduction, transport of dangerous goods, hazard classification and port storage communities to share their knowledge and improve mutual understanding at the international and national levels.

5. The seminar aims to include discussions on key matters (e.g. classification, testing and labelling of ammonium nitrate and ammonium nitrate-based fertilizers, land-use planning and siting of storage facilities and temporary/intermediate storage). The Organizing Committee agreed during its first meeting on the holding of the seminar on 14 December 2021 as a 3-hour online event. In addition, a survey will be conducted over the summer in advance of the seminar to gather information, analyse legal and regulatory strengths/gaps and inform the content of the seminar. It will be distributed to the various constituencies of the partner organizations, aiming to take stock of countries' levels of prevention and preparedness for such accidents, experiences in the implementation of international and national legal instruments, policies, regulations and approaches, as well as relevant activities and guidance developed by and instruments and activities of international and regional organizations and industry. The survey will also cover a range of safety measures and requirements regarding safe storage, handling and transport of hazardous substances, including ammonium nitrate and ammonium nitrate-based fertilizers; and land-use planning and siting.

6. The UNECE secretariats to the Industrial Accidents Convention and the TDG and GHS sub-committees, with inputs from the other international organizations and the Chair of the Advisory Group, prepared the enclosed concept note (see Annex) which provides more information on the seminar's scope, objectives, target audience, the involved organizations and organizational aspects.

7. The secretariat to the Industrial Accidents Convention, in cooperation with the secretariats to your respective sub-committees, would like to invite the TDG and GHS sub-committees to contribute to the seminar's organization and conduct. More specifically, we would like to invite your contribution in one the following ways:

(a) Consider nominating members for the Advisory Group, which will provide substantive/technical guidance to the Organizing Committee in the preparation of the seminar, including making proposals for speakers. As the first meeting of Advisory Group has been scheduled to be held online on 8 July 2021 (3:00–4:30pm, CET), nominations of experts are invited to be submitted by 6 July 2021 through Rosa Garcia (rosa.garciacouto@un.org) and Romain Hubert (romain.hubert@un.org), for the Sub-Committees of experts on the GHS and the TDG, respectively.

(b) Respond to and/or facilitate the distribution of the survey to respective counterparts;

(c) Participate and encouraging participation in the seminar by colleagues and other stakeholders at the national level;

(d) Share your expertise as a possible speaker (subject to decisions by the Organizing Committee) or contributor to the seminar.

Annex

Draft concept note

UN/OECD online seminar in follow-up to the 2020 Beirut port explosion: Lessons learned, experiences and good practices of ammonium nitrate storage and handling, and related accident prevention, preparedness and response

Co-organized by the United Nations, namely UNECE, ILO, IMO, UNEP/OCHA Joint Environment Unit, UNDRR (Regional Office for Arab States), and OECD

Introduction

The present note provides background information for the organization of an online seminar on experiences, good practices and lessons to be learned from the explosion of a large amount of ammonium nitrate (AN), which was stored in a warehouse located in a port area in Beirut, Lebanon in August 2020, as well as from past accidents involving AN and AN-based fertilizers. Such accidents have devastating effects on human beings, including high numbers of deaths and injuries and billions of dollars of damage to infrastructure, economies and the environment. The seminar will cover the safe storage and handling of AN and AN-based fertilizers1, notably with a focus on sites close to residential and commercial areas and addressing temporary/intermediate storage, and related accident prevention, preparedness and response measures.

This initiative follows the European Union's (EU's) proposal at the eleventh meeting of the Conference of the Parties to the Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention), 7-9 December 2020 (ECE/CP.TEIA/42, para. 87), to facilitate an exchange of views on lessons learned from the Beirut port explosion. The United Nations Economic Commission for Europe (UNECE) secretariat to the Industrial Accidents Convention expressed its readiness to support the Convention's Bureau and Working Group on Implementation (WGI) in preparing a proposal for such an event in cooperation with partner organizations. The UNECE Sustainable Transport Division, International Labour Organization (ILO), International Maritime Organization (IMO), UN Office for Disaster Risk Reduction (UNDRR) Regional Office for Arab States, UN Environment Programme/Office for the Coordination of Humanitarian Affairs Joint Environment Unit (UNEP/OCHA JEU) and Organisation for Economic Co-operation and Development (OECD) subsequently expressed their readiness to cooperate in the organization of such an event. Other organizations have been contacted by UNECE, including the European Commission Joint Research Centre (JRC), which agreed to represent the EU on the seminar's Advisory Group. Other organizations, such as other UN Regional Economic Commissions and the UN Institute for Disarmament Research have been invited to attend and contribute to the seminar and distribute information about it to their respective constituencies, to encourage participation.

[1] Storage also includes temporary/intermediate storage for the purpose of this concept note. While the primary focus is on storage and handling, elements related to manufacture, use, disposal and transport of AN and AN-based fertilizers should not be excluded from the scope of this seminar.

The Industrial Accidents Convention's Bureau and WGI, at their joint meeting on 24 February 2021, approved proceeding with the organization of the jointly organized online seminar, under the leadership of UNECE[2] and in cooperation with its partners.

The UNECE secretariat, in cooperation with the partner organizations, prepared this concept note to facilitate discussion on the matters to be addressed at the seminar, as well as its objectives and content. This note also covers an online survey to be conducted and circulated to relevant authorities of the constituencies of the partner organizations in advance of the seminar. The survey will provide a basis to gather information on the status of AN safety measures and practices across the globe. The results will inform the seminar's content and be presented in summary at the seminar.

1. Background on the port of Beirut and other accidents involving ammonium nitrate

On 4 August 2020, a warehouse in Beirut storing an estimated 2,750 tons of AN caught fire and exploded, causing approximately 300 deaths, 6,500 injuries and the displacement of an estimated 300,000 people. This major accident happened in a port area and caused severe material damage to the port and commercial and residential areas within reach of the blast, including healthcare infrastructure, such as hospitals. The international community mobilized in support of national authorities to provide humanitarian aid and assistance, including from the UNEP/OCHA JEU.[3] The ongoing COVID-19 pandemic significantly influenced national and international response measures. Initial analysis has shown that a series of causes led to the eventual disaster.[4] Despite the knowledge available on the hazardous characteristics of AN and measures to be taken to neutralize them, the Beirut port explosion was not the only accident involving AN; other examples include the Toulouse factory explosion in France (2001), Mihăileşti explosion in Romania (2004), fertilizer plant explosion in Texas, United States (2013), Tianjin explosion in China (2015) and Bata explosions in Equatorial Guinea (2021). These events serve as a reminder of the importance of complying with international regulations addressing all aspects of chemicals management (from their manufacture to their classification, labelling, transport, storage, handling and disposal). Proper implementation and enforcement of rules, regulations and good practices at the national level is key to preventing, preparing for and responding to accidents involving hazardous substances and to minimizing their occurrences and effects.

2. Scope, objectives and target audience of the seminar

2.1 Scope

The Beirut port explosion reinforced the importance to comply with existing international instruments to ensure safe storage (e.g. in port areas) and handling of dangerous chemicals. Since the explosion was caused by AN, the scope of the online seminar will address the safe storage and handling of AN and AN-based fertilizers, especially when in proximity to

[2] The UNECE secretariat to the Industrial Accidents Convention within the Environment Division is leading the event with contributions from the UNECE Sustainable Transport Division, which provides secretariat services to the ECOSOC Sub-Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

[3] See https://gho.unocha.org/delivering-better/disaster-response-during-pandemic-beirut-port-explosions.

[4] See https://forensic-architecture.org/investigation/beirut-port-explosion; *Chronology of events relating to the Beirut explosion of 4 August 2020 from 2013 – November 2020*, available at http://www.legalactionworldwide.org/wp-content/uploads/2020/11/REPORT.pdf.

commercial or residential areas, as well as related accident prevention, preparedness and response measures.

The seminar will cover the lessons learned from the Beirut port explosion, as the latest and most severe accident involving AN, as well as other previous accidents. Regulations and guidance have evolved over time to take account of the lessons learned from previous accidents. The seminar will aim to share experiences and good practices from existing legal and policy frameworks and key measures for safely storing AN and AN-based fertilizers, to prevent accidents and to mitigate their consequences (exposure, vulnerabilities and impacts). In this respect, the seminar will address: land-use planning and siting; public information and participation; aspects related to the testing, classification and labelling of AN and AN-based fertilizers, inspections of storage sites and safety of temporary/intermediate storage, in accordance with existing rules, regulations and good practices; and preparedness and response measures.

2.2 Objectives

The main objectives of the seminar are to:

i. Identify and share lessons from the Beirut port explosion and other accidents involving the storage and handling of AN and AN-based fertilizers;

ii. Take stock of countries' levels of prevention and preparedness for such accidents, including by sharing experiences and good practices from international and national legal instruments, policies, regulations and approaches, as well as relevant activities and guidance developed by international and regional organizations and industry;

iii. Identify steps to be taken to enhance the level of prevention of and preparedness for accidents involving AN and AN-based fertilizers and the ability to respond to and mitigate their effects, in accordance with existing rules, regulations and good practices, including across borders; and

iv. Foster cooperation at the international and national levels among relevant communities, including industrial safety (accident prevention, preparedness and response), disaster risk reduction, transport of dangerous goods, hazard classification and port storage.

More specifically, the seminar will aim to:

- Review the known causes and effects of the Beirut explosion;
- Share information on lessons learned from Beirut and prior AN accidents;
- Provide an overview of how international laws, policies and other instruments (e.g. government or industry available guidance, guidelines, standards and approaches) cover: the safe storage and handling of AN and AN-based fertilizers; accident prevention (e.g. land-use planning), preparedness and response measures, including through public information and participation; and mitigation of the effects of such accidents on the population, environment and economy;
- Present examples, good practices and lessons learned of the implementation of international and national laws, policies and measures for a proper hazard characterization and safe transport, storage and handling of AN and AN-based fertilizers, including in port areas, as well as related industrial accident prevention (e.g. land-use planning), preparedness (e.g. contingency planning) and (when needed) response measures;
- Raise awareness of the intrinsic hazards of AN and AN-based fertilizers and on the measures to be taken to minimize them to ensure they can be transported, stored and handled safely.

- Exchange views on how potential transboundary effects of such accidents are or should be addressed, in terms of prevention, preparedness and response; this exchange could include, further to land-use planning and contingency planning, aspects related to the application of risk assessment methodologies to take the transboundary effects of accidents on people, livelihoods, including the economy, and the environment into account.
- Identify measures that countries can take to strengthen the safe storage of AN and AN-based fertilizers, in particular at sites close to commercial and residential areas, to prevent accidents like the Beirut port explosion and to be prepared to mitigate their consequences.

2.3. Target audience

The target audience of the seminar can be defined as a broad range of stakeholders involved in the risk management of storage of AN and AN-based fertilizers at sites close to commercial and residential areas, and industrial accident prevention, preparedness and response. This includes:

- National policymakers and decision-makers, including competent authorities that oversee, among other areas, disaster risk management, accident prevention, preparedness and crisis management and land-use planning;
- Port authorities;
- Industry representatives and practitioners;
- Inspectors;
- Civil society;
- Academia; and
- International organizations participating in the organization of the event (including their response networks as feasible)

3. Content

The seminar will address the following three themes:

i. Lessons learned from the Beirut port explosion and other AN accidents

This theme will provide an overview of the Beirut port explosion, including information known on the substances stored and the conditions of the storage site, and the general effects of the accident, including on the population (i.e. during the COVID-19 pandemic), economy and environment. It will also cover lessons learned from the Beirut port explosion and other AN explosions.

ii. Legal and policy frameworks for the safe storage and handling of AN and AN-based fertilizers (including in proximity to commercial and residential areas), in the context of industrial accident prevention

This theme will provide information on international legal instruments (see next section) and policy guidance (see next section). It will showcase examples of the implementation of international and national legislation, regulations, guidance documents and good practices concerning the safe storage and handling of AN and AN-based fertilizers. It will look into measures that aim to prevent AN accidents and to mitigate the effects of such accidents, including by reducing exposure of populations and vulnerabilities through land-use planning

and public information and participation and by having proper emergency management plans in place.

This theme will thus be dedicated to:

a. Highlighting key legal and policy instruments that regulate AN storage and handling, including their safety measures and requirements on *inter alia*: classification (i.e. testing and labelling), threshold quantities, distancing with other substances, inspection frequency and storage in temporary/intermediate, port or other areas in proximity to population centers; as well as related industrial safety policies for accident prevention (e.g. land-use planning), preparedness (e.g. contingency planning, training and drills, and public information and participation) and response, also in transboundary contexts;

b. Outlining examples of regulations, recommendations, guidance documents, standards and good practices developed at the international and national levels or by industry; and

c. Based on the results of the survey, identify the level of knowledge and, as feasible, gaps and understanding on existing experience and good practices to effectively prevent future accidents involving AN and AN-based fertilizers.

iii. Industrial accident prevention, preparedness and response in a transboundary context

This theme will specifically investigate how countries address transboundary issues when it comes to the storage and handling of and accidents involving AN and AN-based fertilizers, and whether, where and how legal instruments (see next section) are being applied. Building on theme (ii), it will include:

a. Considering whether and how international and national legal and policy frameworks take into account the transboundary context, including possible cross-border implications and the effects of accidents involving AN on neighboring or riparian countries, including through the application of risk assessment methodologies;

b. Discussing the extent to which measures are in place to ensure a harmonized or joint response (e.g. through harmonized or joint contingency plans), in order to mitigate effects on the population and the environment; and

c. Considering whether measures to share information with, and enable the participation of the affected public exist (e.g. in land-use and contingency planning).

iv. Conclusions

The final part of the seminar will draw conclusions on measures that countries can take to strengthen the safe storage and handling of AN and AN-based fertilizers, in particular at sites close to commercial and residential areas, to prevent accidents and mitigate their effects, including transboundary effects.

4. Role of international organizations

Several international organizations deal with aspects related to the sound management of hazardous chemicals (including AN and AN-based fertilizers). These include provisions for their classification, testing, labelling and safe transport, industrial/chemical accidents prevention, preparedness and response, storage, handling and related matters (e.g. land-use planning and siting of hazardous activities). In co-organizing and contributing to the seminar with global reach, the partner organizations, organized under UNECE's leadership, will bring together their different expertise, legal and policy frameworks and/or guidance, as well as

contact networks. The seminar conclusions will also provide a basis for possible future action and cooperation for possible follow-up activities.

United Nations Economic Commission for Europe (UNECE)

The **UNECE Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention)** supports countries in preventing, preparing for and responding to industrial accidents, with a particular focus on transboundary cooperation and the mitigation of transboundary effects. In order to help countries identify and evaluate the risks of hazardous activities, the Convention addresses industrial accidents as "event[s] resulting from an uncontrolled development in the course of any activity involving hazardous substances either: (i) in an installation, for example during manufacture, use, storage, handling, or disposal; or (ii) during transportation on-site of an installation". The Convention applies to hazardous substances listed in its Annex I[5], including, among others, AN and AN-based fertilizers (see details on the characteristics and grades of ammonium nitrate in Annex I and its footnotes). Currently, the Convention counts 41 Parties within the UNECE region. The beneficiary countries of the Convention's Assistance and Cooperation Programme, in Eastern and South-Eastern Europe, the Caucasus and Central Asia, including several non-Parties, have also committed to the Convention's implementation. The Convention hosts the Industrial Accident Notification (IAN) System, which countries are encouraged to use for early-warning, accident notification or mutual requests for assistance for accidents under the Convention's scope, with potential transboundary implications.

To help countries implement the Convention and strengthen industrial safety, the UNECE secretariat to the Convention, which is hosted by the Environment Division, has developed and promoted numerous tools, guidelines and good practices, all of which are available and applicable for countries within and beyond the UNECE region. UNECE has also initiated, jointly with OECD, the Inter-Agency Coordination Group on Industrial/Chemical Accidents.

The **UNECE Sustainable Transport Division** works, under the umbrella of its Inland Transport Committee, to facilitate the international movement of persons and goods by inland transport modes. It aims to improve competitiveness, safety, energy efficiency and security in the transport sector, while also focusing on reducing the adverse effects of transport activities on the environment and contributing effectively to sustainable development. The Division is responsible for 59 legal instruments (several of them of global scope and application) dealing with the establishment of coherent international infrastructure networks for the various modes of inland transport; the adoption of uniform transport regulations ensuring a high level of efficiency, safety, security and environmental protection in transport (including transport of dangerous goods); and the harmonization and simplification of border crossing procedures.

In addition, the Division provides secretariat services to the ECOSOC Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification of Chemicals (GHS) and its two sub-committees. The recommendations issued by the Committee address worldwide harmonization of classification and labelling criteria of hazardous chemicals for all sectors (transport, storage, workplace, consumer chemicals), as well as harmonization of transport provisions for the safe transport of dangerous goods by all modes at worldwide level. The outcome of the work of the intergovernmental bodies serviced by the **Sustainable Transport** Division dealing with chemicals management can be summarized as follows:

[5] The Industrial Accidents Convention, including its Annex I, is available at https://unece.org/environment-policy/publications/convention-transboundary-effects-industrial-accidents.

- The UN Recommendations on the Transport of Dangerous Goods, Model Regulations[6] contain a harmonized set of provisions for the safe transport of dangerous goods (including AN and AN-based fertilizers) that provide a regulatory framework allowing for the uniform development of national and international regulations for all modes of transport (e.g. IMO IMDG Code for maritime transport; ICAO technical instructions for air transport; and ADR, RID, and for road, rail and inland waterways transport). They cover classification and listing of dangerous goods, general packing requirements, marking, labelling and placarding of packaging and transport units, consignment procedures, training and security provisions; requirements for construction and testing of means of containment and provisions concerning transport operations applicable to all modes of transport (e.g. those relating to loading and segregation). The Model Regulations are applied worldwide.
- The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)[7] addresses the classification of chemicals by types of hazard and proposes harmonized hazard communication elements (including labels and safety data sheets). It aims to ensure that information on these hazards is available to enhance human and environmental safety during the handling, transport and use of chemicals. The GHS also provides a basis for the harmonization of rules and regulations on chemicals at national, regional and worldwide levels. The classification of physical hazards in GHS is consistent with the classification for transport purposes in the Model Regulations and is used to define the conditions for storage. GHS provisions are implemented worldwide.[8]
- The UN Manual of Tests and Criteria[9] contains criteria, test methods and procedures to be used for classification of dangerous goods (including AN and AN-based fertilizers), according to the provisions of the Model Regulations and GHS. It gives descriptions of the test methods and procedures considered to be the most useful for providing classifiers with the necessary information to arrive at a proper classification. It also supplements national or international regulations that are derived from the Model Regulations or GHS.
- The Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)[10] is open for accession to all UN Member States and currently has 52 Contracting Parties. Its structure and contents are consistent with that of the Model Regulations and, in addition, address specific provisions applicable to the transport of dangerous goods (including AN and AN-based fertilizers) by road (including conditions of carriage, loading, unloading and handling, as well as requirements for vehicle crews, equipment, operation and documentation and construction and approval of vehicles).
- The European Agreement concerning the International Carriage of Dangerous Goods by inland waterways (ADN)[11] has 18 Contracting Parties. Its structure and contents are consistent with that of the Model Regulations and, in addition, address specific provisions applicable to the transport of dangerous goods (including AN and AN-based fertilizers) by inland waterways (including conditions of carriage, loading,

[6] The UN Model Regulations and related information is available at https://unece.org/about-recommendations.
[7] Information on the GHS is available at https://unece.org/about-ghs.
[8] Information about the status of implementation is available at https://unece.org/ghs-implementation-0.
[9] Information on the UN Manual of Tests and Criteria is available at https://unece.org/about-manual-tests-and-criteria.
[10] Information about the ADR is available at https://unece.org/about-adr.
[11] Information about the ADN is available at https://unece.org/about-adn.

unloading and handling, as well as requirements for vehicle crews, equipment, operation and documentation and construction and approval of vehicles).

International Labour Organization (ILO): The ILO is the secretariat of several treaties that regulate hazardous substances and industrial accidents. The ILO has adopted legally binding International Labour Standards relating to chemicals, which have been ratified by dozens of member states. International Labour Standards are developed through tripartite dialogue between employers organizations, workers organizations and governments. The Chemicals Convention, 1990 (No. 170 with 22 Parties) and Chemicals Recommendation, 1990 (No. 177) provide an international framework for the safe use, including storage and handling, of chemicals at work. The Prevention of Major Industrial Accidents Convention, 1993 (No. 174 with 18 Parties) obliges Parties to formulate, implement and review a coherent national policy concerning the protection of workers, the public and the environment against the risk of major accidents. The ILO hosted the 2020 Inter-Agency Coordination Group on Industrial/Chemical Accidents meeting, which took place shortly after the Beirut port explosion – following which the ILO indicated an interest in further involvement in following up, analyzing and learning lessons from the accident.

International Maritime Organization (IMO): IMO is the UN's specialized agency responsible for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships. With 174 Members States, it acts as the secretariat of 50 Conventions and Protocols and numerous codes and has prepared guidance and recommendations.[12] Of those, the Recommendations on the Safe Transport of Dangerous Cargoes and Related activities in Port Areas (MSC.1/Circ.1216, 26 February 2007) apply to dangerous cargo in port areas as part of a *transport chain*, in which case land-use planning and other specifics pertaining to the temporary storage and regular checks of dangerous goods are taken into account.[13]

United Nations Office for Disaster Risk Reduction (UNDRR): UNDRR supports countries in implementing the Sendai Framework along its four priority areas. The framework calls for societies to engage in managing the risks of natural and man-made hazards and related environmental, technological and biological hazards and risks. UNDRR provided the framework for the development of the Words into Action Guidelines: Implementation Guide for Man-made and Technological Hazards[14], prepared under the leadership of UNEP/OCHA JEU, with contributions from UNECE, OECD and other organizations that are part of the Inter-Agency Coordination Group on Industrial/Chemical Accidents. UNDRR cooperates with UNECE and other organizations through the network of UN DRR focal points, guided by the UN Plan for Action for Strengthening Resilience.

UNEP/OCHA Joint Environment Unit (JEU): The JEU responds to the environmental dimensions of emergencies, whether from natural hazards, technological accidents or a combination of both, providing technical expertise to affected countries. It conducts rapid environmental assessments and analysis and provides tools and guidance on environmental

[12] Some IMO legal instruments that cover the handling and transport of dangerous goods, including AN, include: International Convention for the Safety of Life at Sea (SOLAS); International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL); and International Maritime Dangerous Goods (IMDG) Code.

[13] IMO's Revised Recommendations on the Safe Transport of Dangerous Cargoes and Related activities in Port Areas (MSC.1/Circ.1216, 26 February 2007, Section 3.4.1) recommends that: "Dangerous cargo areas should have separate areas with all necessary facilities appropriate to the hazards emanating from the cargoes to be kept. Where appropriate these facilities should include separate ventilation, drainage, fire resisting walls, ceilings, etc."

[14] Available at https://www.undrr.org/publication/words-action-guideline-man-made/technological-hazards.

emergencies, including on chemical accidents. One such tool is the Flash Environmental Assessment Tool (FEAT) to rapidly assess chemical risks, including from substances listed in Annex I of the Industrial Accidents Convention. The seminar will provide a platform for the JEU to share lessons learned during the Beirut mission following the 2020 explosion, and to involve its networks, in particular in relation to preparedness and response.

Organisation for Economic Co-operation and Development (OECD): The OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response aims to prevent accidents that result in harm to health, the environment or property, and to mitigate their consequences through respective preparedness and response measures. The Working Party on Chemical Accidents leads the OECD's work on these topics and, building on its several ongoing partnerships with the UNECE secretariat, has expressed its interest to be involved in the organization of this seminar. At its thirtieth meeting (October 2020), the Working Party already discussed existing guidance on ammonium nitrate storage among its members.

5. Organizational aspects

The organization of the seminar will be conducted by an Organizing Committee, with advice and guidance provided by an Advisory Group.

5.1 Organizing committee

The Organizing Committee, comprised of UNECE (secretariats to the Industrial Accidents Convention (lead) and to the Sub-Committees of Experts on the Transport of Dangerous Goods and the GHS), ILO, IMO, UNDRR Regional Office of Arab States, UNEP/OCHA JEU, and OECD, will make decisions on the organization of the seminar. The Committee's main purposes will be to: agree on the final version of the concept note; conduct and analyze the preceding survey (see Section 7 below), involving its respective constituencies; determine the seminar's agenda, session formats, speakers and moderation; engage the respective speakers; prepare and issue related communications materials, such as press releases and social media messages, coordinated or, as feasible, joint; and review the seminar conclusions and identify possible follow-up actions and related synergies.

5.2 Advisory Group

The Advisory Group is comprised of members nominated through the UNECE Industrial Accidents Convention's Bureau and the OECD Working Party on Chemical Accidents[15], as well as members of partner organizations' governing organs, and, as desired, representatives of their constituencies. Partner organizations have been invited to facilitate nominations of their constituencies, if so desired. The group's main purposes will be to provide technical guidance and support in the development and facilitation of the seminar. This group will

[15] The Advisory group is currently comprised of: Mr. Michael Struckl (Chair of the Advisory Group and Vice-Chair of the Industrial Accidents Convention Bureau; **Austria**), Ms. Torill Tandberg (Chair of the Industrial Accidents Convention, **Norway,** Directorate for Civil Protection); Mr. Martin Merkofer (Vice-Chair of the Industrial Accidents Convention Bureau; **Switzerland**, Federal Office for the Environment), Mr. Ivars Nakurts (**Latvia**, Civil Protection Department of the State Fire and Rescue Service), Ms. Maureen Wood (**European Union**, Major Accident Hazards Bureau of the Joint Research Centre), Mr. Guy Marlair and Ms. Marie-Astrid Soenen (**France**, Ineris), Ms. Heike Michael-Schulz (**Germany**, Bundesamt für Materialforschung (BAM)), Mr. Lorens Van Dam (**Sweden**, Swedish Civil Contingency Agency), Mr. Mark Hailwood, (**Germany**, Landesanstalt für Umwelt Baden-Württemberg), Ms. Rachel McCann (Chair of the OECD Working Party on Chemical Accidents; **United Kingdom**, Health and Safety Executive) and Ms. Deanne Grant (**United States**, Environmental Protection Agency).

therefore advise the Organizing Committee on the substantive organization of the seminar, incl. making proposals for speakers.

6. Practicalities

The seminar will be held on 14 December 2021, as a three-hour online event.

The budget of the UNECE Industrial Accidents Convention, in particular through contributions from the French Ministry for Ecology, Sustainable Development and Energy and co-financing from the German Federal Ministry of the Environment, Nature Conservation and Nuclear Safety, will cover the expenses related to the seminar organization, incl. the contracting of an online platform provider and related interpretation of the event as well as translation of the survey. The seminar is envisaged to be interpreted into five of the UN official languages: Arabic, English, French, Russian and Spanish. The concept note and survey are also envisaged to become available in Arabic (translation covered by UNDRR), English, French (translation covered by OECD), Russian and Spanish. This approach will allow bringing on board the the different constituencies of the partner organizations, enable worldwide participation and expand the seminar's impacts.

7. Survey

A survey will be prepared and conducted online in advance of the seminar. It will aim to take stock of current measures and practices in place that aim to prevent accidents like the 2020 Beirut port explosion. It will be distributed to the constituencies of the partner organizations, with the objective of reaching a wide target audience. The Organizing Committee, informed by the Advisory Group, will review and refine an initial set of survey questions prepared by UNECE that span existing legislation, regulations, guidance documents and good practices. The results will help inform elements of the seminar's programme. The survey results will also be presented and discussed at the seminar and used as a basis to develop conclusions and recommendations moving forward.