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**SAFETY
+ HEALTH
FOR ALL**

► **The GHS in the world of work:**

Mapping synergies between
ILO Instruments and the
Globally Harmonized System
of Classification and
Labelling of Chemicals
(GHS)



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► Preface

Every year, more than 1 million workers lose their lives due to exposure to toxic chemicals. In addition to harmful workplace exposures leading to disease and chronic illness, major industrial accidents caused by unsafe chemical management have claimed countless lives in the past decades – the most recent example in August 2020 when ammonium nitrate stored in the port of Beirut, Lebanon exploded, killing hundreds and injuring thousands. All of these deaths, injuries and long term health impacts for workers, their families and broader communities, are entirely preventable.

Since its founding in 1919, one of the core objectives of the ILO has been to promote safe and healthy working environments, in a framework of tripartite consultation and engagement. Following a number of major industrial accidents in the 1970s and 1980s, the ILO led efforts to develop a Globally Harmonized System of Classification and Labelling of Chemicals (GHS), in close collaboration with its constituents. The GHS provides an internationally accepted standard for labelling and classifying chemicals and has been implemented by over 60 countries around the world to date. In addition, the GHS includes Safety Data Sheets (SDS), which have been produced in the form of International Chemicals Safety Cards providing information in many languages for over 1,700 chemicals.

The ILO, through its normative framework on chemicals, helps reinforce and create synergies with the GHS. While implementation of the GHS indirectly and directly supports implementation of key provisions from several International Labour Standards (ILS), countries which ratify and give practice to ILS on chemicals create enabling conditions to implement the GHS. The continued implementation of the GHS, as well as ILS on chemicals and occupational safety and health in general, in member states around the world are important steps towards achieving the 2030 Sustainable Development Goal 8 on Decent Work and Economic Growth.

This report explores critical synergies between the GHS and the ILO's instruments on chemicals and occupational safety and health, with an aim to further promote GHS implementation and an even greater engagement of the world of work in global efforts towards the safer management of chemicals.



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► Acronyms

CEACR	Committee of Experts on the Application of Conventions and Recommendations
CG/HCCS	Coordinating Group for the Harmonization of Chemical Classification Systems
ECOSOC	United Nations Economic and Social Council
EU	European Union
FAO	Food and Agriculture Organization
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
ICSCs	International Chemical Safety Cards
IFCS	Intergovernmental Forum on Chemical Safety
ILO	International Labour Organization
ILS	International labour standards
OECD	Organisation for Economic Cooperation and Development
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
SDS	Safety data sheets
UN	United Nations
UN CETDG	UN Committee of Experts on the Transport of Dangerous Goods
UN RTDG	UN Recommendations on the Transport of Dangerous Goods
UNCED	UN Conference on Environment and Development
UNITAR	United Nations Institute for Training and Research
WHO	World Health Organization

► Executive Summary

Over the past three decades, the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) has emerged as a fundamental element of protecting workers from chemical hazards. Whether in agriculture, manufacturing, mining or waste management, workers face significant risks from chemical exposures and major industrial accidents. Through hazard classification, communication and training, implementation of the GHS can help ensure chemical safety while also reducing barriers to international trade.

In the early 1990s, the labour sector played a crucial role in leading the process for the development of a global system for hazard classification and communication in the wake of a series of tragic major industrial accidents around the world. Since then, the GHS has been increasingly adopted by the environmental and public health sectors, with the labour sector continuing to play an important role in the implementation of the GHS. Efforts in several countries have been led by the ministries of labour, with important contributions by worker and employer organizations.

A number of international labour standards (ILS) require the implementation of systems for hazard classification, communication and training, laying a foundation for the implementation of the GHS. Over 25 global instruments that comprise the ILS require implementation of these elements of the GHS to some degree. Indeed, ILO Chemicals Convention, 1990 (No. 170) and Chemicals Recommendation, 1990 (No. 177), which laid the normative foundation for what later would become the GHS, contain at their core, clear delegation of responsibilities and duties for various actors, while also recognizing the worker's right to know about chemicals hazards in the workplace.

Just as the ILS enable implementation of the GHS, States that are implementing the GHS are well positioned to implement the ILS. In particular, through GHS implementation, States have implemented much of their responsibilities under Convention No. 170 and Recommendation No. 177, while also building chemicals safety systems that pave the way toward the ratification and implementation of the Prevention of Major Industrial Accidents Convention, 1993 (No. 174), Occupational Safety and Health Convention, 1981 (No. 155), Safety and Health in Agriculture Convention, 2001 (No. 184), among others.

Through its tripartite development methods, ILS provide guidance on the duties and responsibilities of employers, chemical suppliers, workers and governments. In doing so, ILS can help provide substantive clarity for the private sector in its responsibilities in implementing safe and healthy working conditions as enshrined in the International Bill of Human Rights, which is referenced in the UN Guiding Principles on Business and Human Rights as well as UN Human Rights Council resolutions. The implementation of the GHS in the context of related obligations within ILS is a useful tool to help ensure that workers are protected, businesses enjoy a level playing field, and international trade and cooperation is facilitated.

The synergies between the GHS and the ILS are clear. While much progress has been made, further efforts are required. All States should fully implement the GHS as a matter of urgency. For States that have implemented the GHS, they should consider ratification and implementation of a number of ILS, in particular Convention No. 170, Convention No. 174 and Convention No. 155, among others, as relevant to their national situation. Independent of this, businesses should continue to implement the GHS as part of their responsibilities.



► Introduction

Chemicals are prolific in many sectors of the world of work. Workers find themselves exposed to chemicals throughout extraction, production, handling, storage, transport, disposal and treatment of chemicals. Some sectors that face particularly high risk include mining, textiles, agriculture, construction, electronics, manufacturing and waste management. Of course, workers throughout all sectors can be exposed to chemicals at some point in time.

Information is the foundation for the protection of workers from hazardous substances, including industrial and agricultural chemicals. The right to information, including the worker's right to know, is well-established under international law. The right to information is a necessary precondition to fundamental principles and rights at work, such as freedom of association and collective bargaining, among other human rights recognized by the United Nations (UN)¹, including the right to safe and healthy working conditions. The right to safe and healthy working conditions is explicitly recognized under the International Covenant

on Economic, Social and Cultural Rights, one of three instruments that comprise the International Bill of Human Rights. Workers have a right to information that is available and accessible, in a format that is understandable and meets the needs of all workers.²

An indispensable tool for the realization of the worker's right to know is the GHS. The GHS (see box below) is a widely accepted international standard for the protection of workers, public health and the environment, which is a necessary element of sound chemicals management. This report traces the development and implementation of the GHS, beginning with efforts instigated by the ILO in the 1980s. It elucidates the synergies between the implementation of the GHS and ILS. Through GHS implementation, States are in fact implementing selected provisions of the ILS for OSH, as well as numerous other international obligations.

1 See e.g. Article 19, Universal Declaration of Human Rights (1945). See also, Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Mr. Abid Hussain, E/CN.4/2000/63 (18 January 2000), para. 43; and Report of the Special Rapporteur on human rights and hazardous substances and wastes, Mr. Baskut Tuncak, A/HRC/30/40 (8 July 2015), paras. 22-25.

2 *Id.*, A/HRC/30/40 paras. 31-37.

► **Box 1. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)**

The Globally Harmonized System of Classification and Labelling of Chemicals (or GHS) is an internationally agreed upon system to standardize chemical hazard classification and communication. To date, over 60 countries around the world are in the process of implementing GHS. While the GHS is a voluntary international instrument, implementing legislation is typically legally-binding. All chemicals are included in the scope of the GHS, with few exceptions.

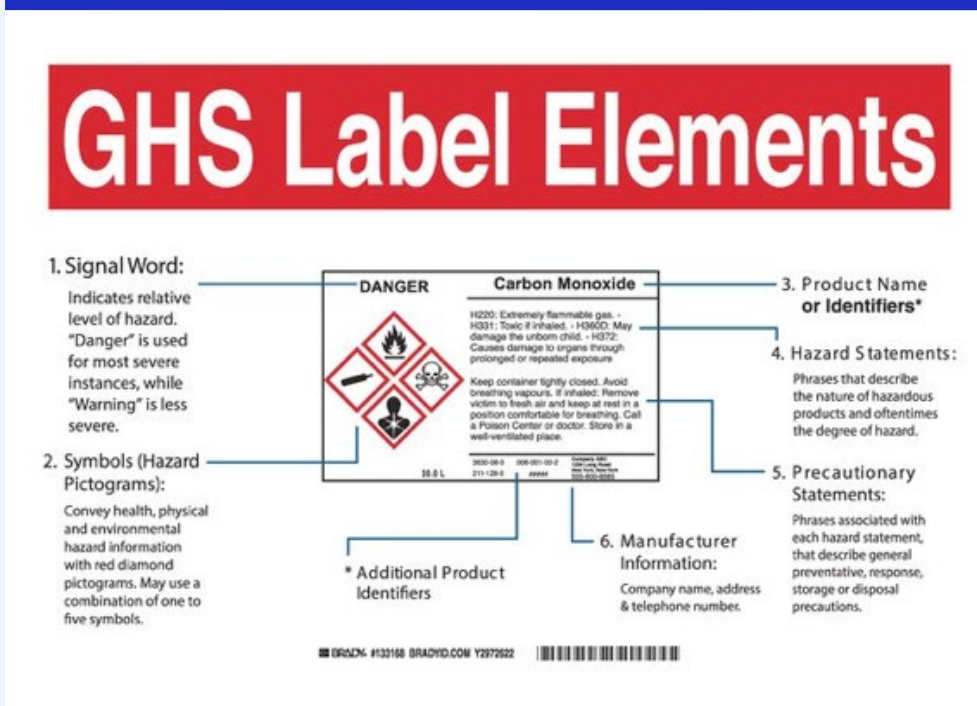
Broadly stated, the need for information about chemicals hazards in the world of work underlies three of four main sectors for GHS implementation: workplace, agriculture and transport.³ The GHS is expected to facilitate global trade by enabling the communication of hazard information about chemicals to those at risk, and to promote regulatory efficiency.

The core components of the GHS are hazard classification and hazard communication.

A major element of hazard communication under the GHS is a system of harmonized labels with symbols (pictograms) that can be interpreted by people across linguistic and national boundaries. Safety data sheets (SDS) are part of the hazard communication system for chemicals used in the workplace. The ILO and WHO, with support from the EU, adopted these in the form of [International Chemical Safety Cards \(ICSCs\)](#), which include comprehensive, peer-reviewed information on over 1,700 chemicals in over 10 languages.

The GHS is intended to enable education and training for employers and workers on chemical hazards and risk reduction. To help users understand the information provided, national programs on GHS have included mandatory workplace training.

► **Figure 1. Sample GHS label**



Source: <https://www.fishersci.com/shop/products/brady-ghs-label-elements-signs/19000479>

3 The workplace is considered its own sector in order to ensure that appropriate measures are instituted at the enterprise level. The fourth sector, related to consumer products, falls outside the scope of the workplace for the purposes of this report.



GHS and the world of work in the 21st century

► GHS and the world of work in the 21st century

Throughout the 20th century, the world of work witnessed a series of preventable industrial accidents, most of which share the inaccessibility of information as a common contributor to the ensuing tragedy.

- In **1974**, a vapour cloud explosion of cyclohexane took 28 workers' lives in Flixborough, UK.
- In **1976**, a reactor in a chemical manufacturing plant exploded in Seveso, Italy, releasing a large volume of toxic chemicals (dioxin).
- In **1984**, the world witnessed one of the deadliest industry accidents to date, the Bhopal disaster in Madhya Pradesh, India, where methyl isocyanate instantly killed more than 3,000 workers and local community members and continues to adversely affect hundreds of thousands.
- In **1989**, the Phillips disaster caused 23 fatalities in Pasadena, Texas when chemicals were released from a complex, wounding around 300 workers.
- In **2020**, a large amount of ammonium nitrate stored at the port of Beirut, Lebanon, exploded, causing more than 300 deaths, and thousands of injuries.

All of these deaths, injuries and long term health impacts for workers, their families and broader communities, were preventable.

These major industrial accidents, among others, prompted the international community to focus on achieving the sound management of chemicals with increasing urgency in the 1980s. Common to several of these catastrophes was the deficiency of information about chemical hazards. As a result, international efforts on chemicals management devoted considerable efforts

to the development of a global system to ensure everyone in the world of work had access to necessary and timely information about chemical hazards. As described below, the labour community played an instrumental role in these efforts to promote access to information about chemical risks and hazards.

While progress has been made, workers as well as employers continue to find themselves without adequate information on hazards they encounter on a regular basis. For example:



Workers in agriculture – formal and informal workers (including the self-employed) continue to testify about the lack of information about the pesticides and other agro-chemicals they use or are exposed to.



Workers in manufacturing – workers often testify they are unaware of what chemicals are used. Some describe solvents by their smell, or differentiate chemicals simply based on the coloured bottles they handle, with little to no knowledge of their risks.



Workers in other industrial facilities – workers continue to be injured and killed from preventable disasters brought by a lack of information and training about the chemical hazards present in industrial facilities.

Many of these examples come from low- and middle-income countries, many of which have not fully implemented the GHS. Globally, more than 1 million workers lose their lives due to exposure to toxic chemicals, and millions more suffer debilitating chronic diseases. The lack of timely, accurate and accessible information on chemical hazards is contributing to this toll, causing undue suffering while placing a heavy burden on public resources.



► Box 2. Agricultural workers and pesticide labelling

In 2015, a monitoring report was filed with the Food and Agriculture Organization (FAO) regarding inadequate labelling of pesticides in Punjab, India.⁴ For example, labels and information leaflets of all the products analyzed lacked adequate safety advice or health warnings. The packet of one pesticide with reproductive hazards omitted the warning phrase “suspected of damaging the unborn child,” whereas the label of the same pesticide in the UK contained such a warning.

The official language of the state is Punjabi, written in the Gurmukhi script. Hindi is only spoken by approximately 8 per cent of the population. Yet, only one of the pesticides examined had Punjabi on the label. The farmers interviewed had great difficulty deciphering the text, and many were not able to read it at all due to the size of the font or illiteracy.

In such a context, other forms of hazard communication and training become even more important. Products were not labelled with GHS compliant symbols, but were colour coded to indicate the acute toxic effects in order to alert the user to the level of toxicity of a product – with red indicating the most toxic and green signifying that a product is considered less toxic. The majority of pesticide users interviewed in the survey did not know the correct order nor understood the logic of the colour code system. For example, one worker believed that: “yellow is the most dangerous, it works from outside. Red works from inside”, another thought blue meant the product “killed everything” and that products with a green colour code increased the yield.

4 https://www.ecchr.eu/fileadmin/Juristische_Dokumente/CaseReport_Pesticides_IndiaPunjab_FAO_20151009.pdf

► **Box 3. Implementation of the GHS in the garment sector**

The garment sector uses many different types of hazardous chemicals in its operations. In Viet Nam, as in many countries, enterprises in the garment sector faced a number of challenges when it came to GHS implementation.

The practical implementation of the GHS at factory level took time after the legislative reform: garment manufacturers had existing stocks of chemicals with old labels and needed to adapt storage information and warning signs displayed in the factory.

It is possible to gain a good understanding of the reality of the transition and implementation process thanks to the [ILO/IFC Better Work program](#). This program monitors working conditions in garment factories exporting to international brands, and conducts annual assessments at factory level of compliance with national legislation and international labour standards. The data resulting from these assessments also covers the labelling of chemicals and the availability of SDS in accordance with the GHS.

The program reported that in 2012, non-compliance on chemical labelling and SDS was detected in a number of factories.⁵ With respect to labelling, many defects were identified, including:

- Containers were found to not be labelled with contents in one third of factories deemed non-compliant;
- hazard pictograms were not indicated on secondary containers in the vast majority of non-compliant factories; and
- labels were in a foreign language (typically English or Chinese) in one third of non-compliant factories.

Other widespread and serious defects included situations where the wrong chemical was identified on the label; chemicals were stored in water bottles or other inappropriate containers; either the wrong hazard pictogram was used or one or several hazard pictograms was missing (compared to the SDS); or the label was torn, blurred or otherwise disfigured (Figure 2).

While compliance with SDS requirements was relatively more likely than with labelling requirements, deficiencies were still noted in approximately half of the factories. The root of many SDS problems stemmed from factories not receiving SDS from original chemical manufacturers but rather downloading forms from various websites, contrary to the requirements of Vietnamese law.

► **Figure 2.** Torn label on chemical container (BetterWork)



5 Better Work Vietnam: Garment Industry 5th Compliance Synthesis Report, 2012, p. 16.

The program worked with Vietnamese authorities and businesses to provide regular individual advisory visits to participating factories to help them improve working conditions, as well as joint classroom training sessions (including on chemical management). The advisory visits and training cover the following aspects:

- ▶ chemical management systems for understanding chemical risks and hazards, how to track and store chemicals properly, communication and training requirements, control measures following the hierarchy of controls;
- ▶ the role of the OSH/chemical/environmental officers;
- ▶ responsibilities of various procedures (e.g. who controls and translates labels and SDS on receipt from supplier, decisions about storage and use, etc.);
- ▶ how to read SDS, training for workers working with chemicals, and regular internal inspections;
- ▶ good practices on labelling and SDS, such as visual posters; and
- ▶ introduction of restricted substance list from brands and list of prohibited chemicals from the applicable law.

Six years later in 2018, due to enhanced capacity development, significant progress was achieved in GHS implementation in the Vietnamese garment sector, although opportunities for further improvement remain. Non-compliance related to chemical labelling and SDS concerns were significantly reduced.⁶ Critical to the progress was international cooperation with active involvement of the labour sector.

The comparison of the data from 2012 to 2018 illustrates the progress achieved towards compliance with GHS labelling and SDS in the garment sector in Viet Nam. The experience illustrates the potential of the labour sector to be a critical partner in GHS implementation, and highlights the potential for expanding this good practice to other countries and regions.



The world of work: A driver of GHS development and implementation

► The world of work: A driver of GHS development and implementation

Global level

While the Bhopal disaster of **1984** was a pivotal moment for the development of a globally harmonized system for hazard communication, these efforts build upon earlier work by international organizations, starting with the ILO from the 1950s.

In **1952**, the ILO called on its Chemical Industries Committee to study the classification and labelling of dangerous substances. Then in **1953**, the United Nations Economic and Social Council (ECOSOC) created within the Economic Council for Europe, the UN Committee of Experts on the Transport of Dangerous Goods (UN CETDG). This Committee elaborated the first internationally recognized classification and labelling system for the purpose of transporting dangerous goods. It was first published in **1956** as the UN Recommendations on the Transport of Dangerous Goods (UN RTDG). The RTDGs are now included in the transport legislation of most of the UN member States and are also used for labelling chemicals in the workplace in a large number of developing countries. A number of classification and labelling systems for chemicals were also elaborated by regional organizations such as the European Communities and by individual States such as Australia, Canada, Japan and the United States of America, driven to a significant degree by the labour movement.

In **1989**, the ILO adopted a Resolution concerning the harmonization of systems of classification and labelling for the use of hazardous chemicals at work. In **1990**, ILO Convention No. 170 and Recommendation No. 177 concerning safety in the use of chemicals at work were adopted, containing explicit provisions on core elements of the GHS, namely classification, labelling, safety data sheets and training. From **1991-92**, the ILO evaluated the size of the task of harmonizing classification systems

and established, within the IPCS, a Coordinating Group for the Harmonization of Chemical Classification Systems (CG/HCCS). The secretariat (ILO) of the Coordinating Group was asked to draft a workplan for achieving harmonization within a reasonable period of time and to include in this workplan a set of general principles, the elements of the classification and hazard communication process for the purpose of prioritization and, where possible, an assignment of priorities and tasks.

Over the years, the need to implement a globally harmonized system was increasingly endorsed by non-labour forums. In **1992**, the UN Conference on Environment and Development (UNCED), identified harmonization of classification and labelling of chemicals by the year 2000 as one of six action programs on hazardous chemicals as part of the pivotal outcomes of the Rio Conference.⁷ At its inception in **1994**, the Intergovernmental Forum on Chemical Safety (IFCS) adopted a resolution calling for the completion of classification criteria and hazard communication elements, as well as an international framework to translate the technical work of harmonization into an instrument or recommendations applicable legally at the national level.

In **2002**, the GHS was adopted by the United Nations and has been identified as one of the main tools to achieve sound management of chemicals. Starting from the **2002** World Summit on Sustainable Development, to the **2006** Strategic Approach to International Chemicals Management and **2015** UN Sustainable Development Goals (12.4), governments continue to be encouraged to fully implement the GHS as soon as possible. The ILO has also contributed to the development of the International Chemical Safety Cards (ICSCs), created in partnership with WHO and supported by

7 Agenda 21, chapter 19

the EU, since the 1980s. These cards provide information in over 10 languages on over 1,700 chemicals, which are being updated to reflect GHS standards. In addition, the [OECD eChemPortal](#) and [European Chemical Agency database](#) are also sources of information for GHS classifications, the latter of which is continuously updated at present.

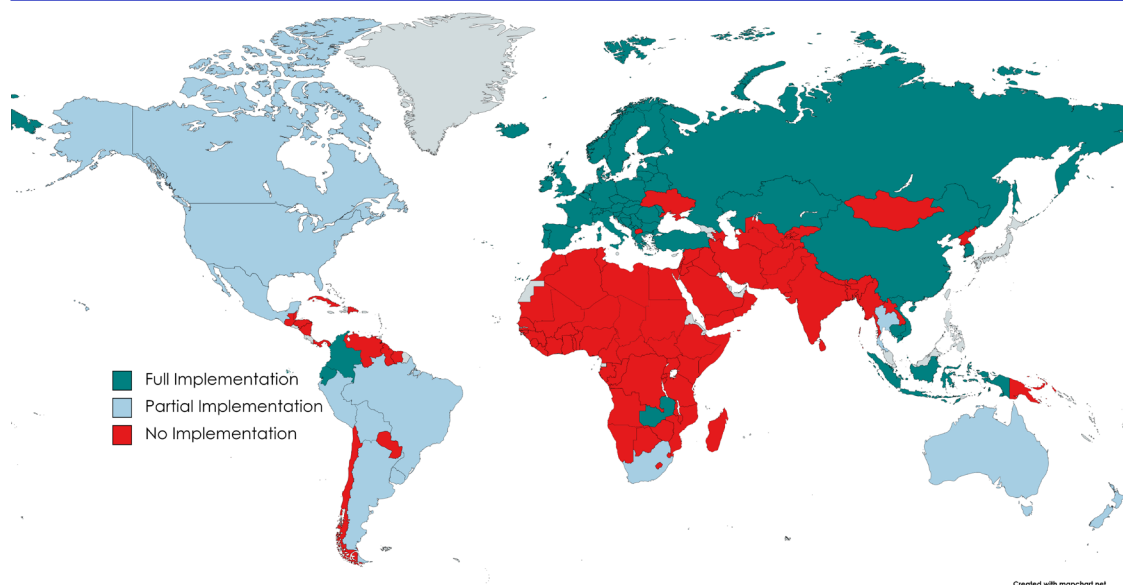
Although ratification has been limited, the core provisions of ILO's Chemicals Convention (No. 170)⁸ nevertheless served as the foundation for the global development and implementation of the GHS. In particular Convention No. 170 calls for classification and labelling of chemicals as well as the training of workers in this regard (see **Annex 1**). During the International Labour Conference in 2003, it was noted that the two main provisions in C170 - labelling chemicals and the creation of SDS - were the foundation for international cooperation to create and adopt the GHS.⁹

The provisions of Convention No. 170 are further reinforced by other ILO instruments pertaining to OSH, such as those that enshrine the obligation of States to create a general national policy on OSH (Convention No. 155) and the prevention of diseases in the workplace and major industrial accidents (Convention No. 174). These and other ILO instruments that connect to and reinforce the GHS, are described further below.

National level

The GHS has emerged as the global standard on hazard classification and communication for the sound management of chemicals. To a significant degree, it has been implemented in countries of the Americas, Europe and parts of Asia, including all members of the OECD. In the EU, the Classification and Labelling of Chemical Products Regulation (No 1272/2008) implements the GHS.

► **Figure 3.** Global GHS implementation status



The boundaries shown on this map do not imply endorsement or acceptance by the ILO

Source: UNITAR, as at 19 April 2021; adapted and updated, based on the GCO-II, UNEP, 2019 and Explaining the Legal Implementation Gap, Stockholm Environment Institute, Persson et al. 2017. Updates are based on information received from partners and stakeholders and is presented as an indicator of implementation status, verified to the extent possible.

8 22 ratifications

9 ILO, 2003. ILO Standards-related activities in the area of occupational safety and health: An in-depth study for discussion with a view to the elaboration of a plan of action for such activities. International Labour Conference. Sixth item on the agenda. 91st Session. Report VI. Available at: <https://www.ilo.org/public/english/standards/relm/ilc/ilc91/pdf/rep-vi.pdf>

Labour authorities have played an important role in the development and implementation of the GHS at the national level. In **Malaysia**, the GHS was introduced through the promulgation of the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 (CLASS Regulations). Following the establishment of a coordinating committee on GHS implementation, the Malay Department of Occupational Safety and Health (DOSH) was tasked with the implementation of the GHS in the workplace. DOSH has played a critical role in GHS implementation through providing guidance to industry (e.g. via Codes of Practice), the operationalization of training regimen on the GHS in the workplace, among other activities.

In the **US**, the Department of Labor's Occupational Safety and Health Administration (OSHA) facilitated alignment of the Hazard Communication Standard with the GHS. The efforts helped to provide specific criteria for classification of health and physical hazards, as well as classification of mixtures; harmonized signal word, pictogram, and hazard statement for each hazard class and category, as well as precautionary statements; a specified format for safety data sheets; and an obligation that employers

provide information and training to workers on the new label elements and safety data sheets format to facilitate recognition and understanding.

In the African region, **South Africa** has been a leader in the implementation of GHS. The Government has moved forward with mandating that the GHS be implemented, starting with the labour sector. Previously, the South African standard for classification and labeling was voluntary. The Government has employed labour inspectors to help ensure compliance, and the Ministry of Labour is tasked with enforcing requirements of importers.

Across different regions, chemical industry associations have assisted in the implementation of the GHS through capacity building. Such efforts have included developing emergency response programs, growing knowledge of the GHS, and training distributors on safe handling of chemicals.

Although a voluntary global instrument, the GHS has enabled the development of mandatory national systems for hazard communication that implement the GHS. These examples illustrate the critical role that labour ministries play in the development and implementation of the GHS nationally.



Synergies between the International Labour Standards and the GHS

► Synergies between the International Labour Standards and the GHS

Many ILO instruments, including conventions, recommendations and codes of practice, have clear synergies with the GHS. The GHS, together with instruments from the ILO, contribute to the foundation for chemical safety in the world of work. Efforts to implement the GHS are directly and indirectly implementing many of the provisions of ILO conventions and recommendations that form the ILS, as described below. Conversely, the ILS help to build enabling conditions for GHS implementation. Implementing

the GHS, together with ILO conventions and recommendations, can assist with national compliance with international systems and standards, as well as international environmental conventions such as the Basel, Rotterdam and Stockholm Conventions.¹⁰ As the ILO's ILS are developed through tripartite dialogue (between governments, employers and workers) and are legally-binding, they help to create a valuable complement to the voluntary provisions of the GHS.

► Box 4. ILO Normative Standards

International labour standards are legal instruments developed through tripartite dialogue and cooperation between governments, employers and workers. Conventions are legally binding international treaties that can be ratified by ILO member States. Recommendations, while not legally binding, guide member states on how to take action on principles and rights at work. As ILO conventions are legally binding, a supervisory system exists at the international level to monitor their implementation. Member States who have ratified a Convention are required to regularly report on their implementation to the Committee of Experts on the Application of Convention and Recommendations. The Committee of Experts reviews these reports and provides feedback in the form of observations and direct requests. The annual report of the Committee of Experts is submitted to the International Labour Conference, where it is examined by the Conference Committee on the Application of Standards in a tripartite fashion.

The ILO Chemicals Convention, 1990 (No. 170) includes obligations for ratifying states that cover components of the GHS such as classification, labelling and provision of SDS, as well as other important aspects of GHS implementation such as training of workers on chemical hazards. Like other instruments, Convention No. 170 provides clear indication of the rights and responsibilities of different stakeholders, including with regard to the elements of hazard classification and communication systems, as well as training.

Countries have utilized Convention No. 170 as an avenue to implement the GHS, and vice versa. For example, the Committee of Experts on the Application of Conventions and Recommendations (CEACR) noted that countries such as China, Brazil, Mexico, Tanzania and Italy implemented the GHS as a synergistic method of applying provisions of Convention No. 170.¹¹

10 OECD, The GHS and the Global Partnership - a success story from Rio to Rio Achievements: lessons learned and future directions, (June 2012), available at: <http://www.oecd.org/env/ehs/risk-management/50500627.pdf>

11 ILO, Legal Analysis on Chemical Instruments <https://www.ilo.org/dyn/normlex/en/f?p=1000:20010::NO::>

The synergies of the GHS with the ILS go far beyond the implementation of Convention No. 170. The GHS is relevant for the implementation of over 25 ILO conventions, recommendations and codes of practice (see **Table 1** and **Annex 1**). The ILO Convention on Major Industrial Accidents (No. 174) has several such provisions that require hazard identification and training. Article 9 of Convention No. 174 requires that employers establish and maintain a documented system of major hazard control including the identification of hazards and organizational measures, including training and instruction of personnel. In addition, the GHS is fundamental to the objectives of ILS for substances of concern, such as asbestos (Convention No. 162) and carcinogens in general (Convention No. 139). Workers in chemical-intensive sectors covered by international standards, such as agriculture (Convention No. 184), mining (Convention No. 176) and construction

(Convention No. 167), will face considerable risks until the GHS is fully implemented.

In addition to specific provisions of ILO instruments, the GHS is an essential component of occupational safety and health management systems (ILO-OSH 2001). As reflected in the ILS, the hierarchy of controls in the workplace is fundamental to ensuring that workers have a safe and healthy workplace. The hierarchy starts with the elimination of chemical hazards, progressing through other risk reduction measures, until finally personal protective equipment (PPE) is the final recourse to protect workers from the hazards of chemicals (see e.g. ILO Recommendation 164, article 3(h)). Implementation of these controls is dependent on employers and workers having access to necessary information about chemical hazards to implement measures accordingly.

► **Table 1.** Synergies between GHS elements and various ILO conventions and recommendations

ILO instrument	GHS element			
	Classification	Labelling	Safety Data Sheets	Training
Conventions				
C170 – Chemicals	X	X	X	X
C174 – Major industrial accidents	X	X		X
C187 – Promotional framework for OSH	X	X		X
C155 – Occupational Safety and Health	X	X	X	X
C139 – Occupational cancer	X	X	X	X
C148 – Working environment	X	X	X	X
C162 – Asbestos		X	X	X
C136 – Benzene		X	X	X
C184 – Safety and health in agriculture	X	X	X	X
C176 – Safety and health in mines	X	X	X	X

ILO instrument	GHS element			
	Classification	Labelling	Safety Data Sheets	Training
Recommendations				
R177 - Chemicals	X	X	X	X
R164 – Occupational Safety and Health		X	X	X
R147 – Occupational Cancer	X	X		X
R172 - Asbestos		X	X	X
R144 - Benzene	X	X	X	X
R192 – Safety and Health in Agriculture				X
R175 – Safety and Health in Construction				X
R183 – Safety and Health in Mines	X	X	X	X

The implementation of the GHS is important to realize ILO's fundamental principles and rights at work as well as relevant conventions that are not primarily focused on OSH. The fundamental rights to freedom of association and the effective recognition of the right to collective bargaining is dependent upon the right to know. Without information, workers and their representatives cannot engage in meaningful discussions on workplace hazards and measures for protection.

The GHS is an important tool towards efforts to eliminate the worst forms of child labour. Without information about chemical hazards, child workers remain more vulnerable to hazardous work, one of the worst forms of child labour. In this light, the updated "FAO/WHO International Code of Conduct on Pesticide Management"¹² added new language in 2014 on both (1) the need to prevent the use of pesticides by children and

(2) to ensure classification of highly hazardous pesticides according to internationally accepted standards such as the GHS.¹³

Beyond child labour, workers across various other protected groups, such as gender and race, remain vulnerable to discrimination in employment and occupation when workplace hazards are unknown or undisclosed. Furthermore, the elimination of forced or compulsory labour, i.e. modern slavery, has been defined to include deception¹⁴ regarding the type of work entailed. Without information about chemical hazards, workers may be unaware of the chemical risk that they are being subject to. For example, the lack of information about chemical risks to workers who are pregnant has been well-documented and reinforces the need for effective chemical hazard communication in the workplace about hazards, including those to reproduction.

¹² FAO and WHO, 2014. The International Code of Conduct on Pesticide Management. Rome. Available at: <http://www.fao.org/3/I3604E/i3604e.pdf>

¹³ See "definitions" and section 6.1.2

¹⁴ See e.g. UK Modern Slavery Act of 2015, part 1 section 3



Conclusion

► Conclusion

Thanks in large part to the leadership of the labour sector, including worker representatives, employer organizations, national labour authorities and the ILO, subsequently supported by many international organizations, the GHS has now emerged as the global standard for the classification and communication of chemical hazards in the world of work and beyond.

Over the years, International Labour Standards have embraced the need for hazard communication and training in the world of work. The GHS is an indispensable element of States meeting their obligations and responsibilities under ILO conventions. Implementation of the GHS is a significant step towards implementation of not only the ILO's Chemicals Convention (No. 170), but also other conventions, recommendations and codes of practice. The information made available through the GHS is also a foundation for the realization of various ILO's fundamental principles and rights at work, for which all Member States have obligations. In addition, the GHS is an important tool for the realization of the right to safe and healthy working conditions, recognized under the International Bill of Human Rights. Many States have made noteworthy progress in this regard; however, much work remains to be done. Employers, chemical suppliers and other businesses should implement the GHS as it applies to their products and their activities, including domestic and international supply and value chains.

Suggested action points:

1. All States should fully implement the GHS, as a matter of urgency, and as part of their implementation of International Labour Standards.
2. States that have or are in the process of implementing the GHS should ratify and implement Convention No. 170, Convention No. 174, Convention No. 155 and Convention No. 187, among others listed in table 1, capitalizing on the clear synergies between the GHS and these ILS.
3. To help countries with less resources and to take advantage of lessons learnt from implementation, national labour authorities may wish to consider enhancing international cooperation, both bilaterally and regionally. To this end, international organizations serve as a resource for GHS implementation, which States may consider in their implementation plans.
4. Businesses should strive to ensure that hazard communication and training procedures are GHS compliant and consider including due diligence responsibilities.
5. Employers and other businesses should ensure that chemical hazard information is available in workplaces and workers are properly trained in understanding health and safety hazards and precautionary measures to be taken.
6. Governments, employers organizations and workers organizations should engage in social dialogue on GHS implementation, as it is an "essential element" of occupational safety and health.¹⁵

¹⁵ See Article 20, Occupational Safety and Health Convention (C155).



Annex 1

**ILO instruments
containing GHS
elements**

Annex 1: ILO instruments containing GHS elements

Chemical Instruments

C170 – Chemicals Convention, 1990 (No. 170)¹⁶

Preamble

Noting that workers have a need for, and right to, information about the chemicals they use at work, and

Considering that it is essential to prevent or reduce the incidence of chemically induced illnesses and injuries at work by:

- (a) ensuring that all chemicals are evaluated to determine their hazards;
- (b) providing employers with a mechanism to obtain from suppliers information about the chemicals used at work so that they can implement effective programmes to protect workers from chemical hazards;
- (c) providing workers with information about the chemicals at their workplaces, and about appropriate preventive measures so that they can effectively participate in protective programmes;

Article 6: Classification Systems

1. Systems and specific criteria appropriate for the classification of all chemicals according to the type and degree of their intrinsic health and physical hazards and for assessing the relevance of the information required to determine whether a chemical is hazardous shall be established by the competent authority, or by a body approved or recognised by the competent authority, in accordance with national or international standards.
2. The hazardous properties of mixtures composed of two or more chemicals may be determined by assessments based on the intrinsic hazards of their component chemicals.
3. In the case of transport, such systems and criteria shall take into account the United Nations Recommendations on the transport of dangerous goods.
4. The classification systems and their application shall be progressively extended.

Article 7: Labelling and Marking

1. All chemicals shall be marked so as to indicate their identity.
2. Hazardous chemicals shall in addition be labelled, in a way easily understandable to the workers, so as to provide essential information regarding their classification, the hazards they present and the safety precautions to be observed.
3.
 - a) Requirements for marking or labelling chemicals pursuant to paragraphs 1 and 2 of this Article shall be established by the competent authority, or by a body approved or recognised by the competent authority, in accordance with national or international standards.
 - b) In the case of transport, such requirements shall take into account the United Nations Recommendations on the transport of dangerous goods.

¹⁶ C170 – Chemicals Convention, 1990 (No. 170). 25 June, 1990. 77th ILC session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C170

Article 8: Chemical Safety Data Sheets

1. For hazardous chemicals, chemical safety data sheets containing detailed essential information regarding their identity, supplier, classification, hazards, safety precautions and emergency procedures shall be provided to employers.
2. Criteria for the preparation of chemical safety data sheets shall be established by the competent authority, or by a body approved or recognised by the competent authority, in accordance with national or international standards.
3. The chemical or common name used to identify the chemical on the chemical safety data sheet shall be the same as that used on the label.

Article 9: Responsibilities of Suppliers

1. a) such chemicals have been classified in accordance with Article 6 on the basis of knowledge of their properties and a search of available information or assessed in accordance with paragraph 3 below;
b) such chemicals are marked so as to indicate their identity in accordance with Article 7, paragraph 1
c) hazardous chemicals they supply are labelled in accordance with Article 7, paragraph 2
d) chemical safety data sheets are prepared for such hazardous chemicals in accordance with Article 8, paragraph 1, and provided to employers.
2. Suppliers of hazardous chemicals shall ensure that revised labels and chemical safety data sheets are prepared and provided to employers, by a method which accords with national law and practice, whenever new relevant safety and health information becomes available.
3. Suppliers of chemicals which have not yet been classified in accordance with Article 6 shall identify the chemicals they supply and assess the properties of these chemicals on the basis of a search of available information in order to determine whether they are hazardous chemicals.

Article 10: Identification

1. Employers shall ensure that all chemicals used at work are labelled or marked as required by Article 7 and that chemical safety data sheets have been provided as required by Article 8 and are made available to workers and their representatives.
2. Employers receiving chemicals that have not been labelled or marked as required under Article 7, or for which chemical safety data sheets have not been provided as required under Article 8, shall obtain the relevant information from the supplier or from other reasonably available sources, and shall not use the chemicals until such information is obtained.
3. Employers shall ensure that only chemicals which are classified in accordance with Article 6 or identified and assessed in accordance with Article 9, paragraph 3, and labelled or marked in accordance with Article 7 are used and that any necessary precautions are taken when they are used.
4. Employers shall maintain a record of hazardous chemicals used at the workplace, cross-referenced to the appropriate chemical safety data sheets. This record shall be accessible to all workers concerned and their representatives.

Article 15

- b) instruct the workers how to obtain and use the information provided on labels and chemical safety data sheets;
- c) use the chemical safety data sheets, along with information specific to the workplace, as a basis for the preparation of instructions to workers, which should be written if appropriate;

Article 18

3. Workers concerned and their representatives shall have the right to:
 - a) information on the identity of chemicals used at work, the hazardous properties of such chemicals, precautionary measures, education and training;
 - b) the information contained in labels and markings;
 - c) chemical safety data sheets;
 - d) any other information required to be kept by this Convention.

R177- Chemicals Recommendation, 1990 (No. 177)¹⁷

Section 6, Classification

The criteria for the classification of chemicals established pursuant to Article 6, paragraph 1, of the Convention should be based upon the characteristics of chemicals including:

- a) toxic properties, including both acute and chronic health effects in all parts of the body;
- b) chemical or physical characteristics, including flammable, explosive, oxidising and dangerously reactive properties;
- c) corrosive and irritant properties;
- d) allergenic and sensitising effects;
- e) carcinogenic effects;
- f) teratogenic and mutagenic effects;
- g) effects on the reproductive system.

Section 8 and 9, Labelling and Marking

8. The requirements for the labelling and marking of chemicals established pursuant to Article 7 of the Convention, should be such as to enable persons handling or using chemicals to recognise and distinguish between them both when receiving and when using them, so that they may be used safely.

The labelling requirements for hazardous chemicals should, in conformity with existing national or international systems, cover the information to be given on the label including as appropriate:

trade names; identity of the chemical; name, address and telephone number of the supplier; hazard symbols; nature of the special risks associated with the use of the chemical; safety precautions; identification of the batch; the statement that a chemical safety data sheet giving additional information is available from the employer; the classification assigned under the system established by the competent authority; the legibility, durability and size of the label; the uniformity of labels and symbols, including colours.

¹⁷ R177 – Chemicals Recommendation, 1990 (No. 177). 25 June, 1990. 77th ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=1000:12100:0::NO::P12100_INSTRUMENT_ID,P12100_LANG_CODE:312515,fr:NO

The label should be easily understandable by workers.

In the case of chemicals not covered by subparagraph (2) above, the marking may be limited to the identity of the chemical.

9. Where it is impracticable to label or mark a chemical in view of the size of the container or the nature of the package, provision should be made for other effective means of recognition such as tagging or accompanying documents. However, all containers of hazardous chemicals should indicate the hazards of the contents through appropriate wording or symbols.

Section 10, Safety Data Sheets

The criteria for the preparation of chemical safety data sheets for hazardous chemicals should ensure that they contain essential information including, as applicable:

- a) chemical product and company identification (including trade or common name of the chemical and details of the supplier or manufacturer);
- b) composition/information on ingredients (in a way that clearly identifies them for the purpose of conducting a hazard evaluation);
- c) hazards identification;
- d) first-aid measures;
- e) fire-fighting measures;
- f) accidental release measures;
- g) handling and storage;
- h) exposure controls/personal protection (including possible methods of monitoring workplace exposure);
- i) physical and chemical properties;
- j) stability and reactivity;
- k) toxicological information (including the potential routes of entry into the body and the possibility of synergism with other chemicals or hazards encountered at work);
- l) ecological information;
- m) disposal considerations;
- n) transport information;
- o) regulatory information;
- p) other information (including the date of preparation of the chemical safety data sheet).

Section 12, 14-16 Operational control within the workplace

Section 12

In accordance with the Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, adopted by the Governing Body of the International Labour Office, a national or multinational enterprise with more than one establishment should provide safety measures relating to the prevention and control of, and protection against, health hazards due to occupational exposure to hazardous chemicals, without discrimination, to the workers in all its establishments regardless of the place or country in which they are situated.

Section 14

The competent authority should ensure that criteria are established for safety in the storage of hazardous chemicals, including provisions covering, as applicable:

- f) labelling and relabelling requirements

Section 15

The competent authority should ensure that criteria consistent with national or international transport regulations are established for the safety of workers involved in the transport of hazardous chemicals, including provisions covering, as applicable

- f) labelling requirements

Section 16

1. The competent authority should ensure that criteria consistent with national or international regulations regarding disposal of hazardous waste are established for procedures to be followed in the disposal and treatment of hazardous chemicals and hazardous waste products with a view to ensuring the safety of workers.
2. These criteria should include provisions covering, as applicable:
 - a) the method of identification of waste products;
 - c) the identification, construction, nature, integrity and protection of waste containers;

Section 24, 26 - Rights of Workers

Section 24

1. Workers and their representatives should have the right to:
 - a) obtain chemical safety data sheets and other information from the employer so as to enable them to take adequate precautions, in co-operation with their employer, to protect workers against risks from the use of hazardous chemicals at work;

Section 26

Workers should receive:

- a) information on the classification and labelling of chemicals and on chemical safety data sheets in forms and languages which they easily understand

Code of practice: safety in the use of chemicals at work¹⁸

Note: only includes key provisions unique to the Code of practice on safety in the use of chemicals at work

4.3.9. Labelling of hazardous chemicals may be impracticable because of the size of the container or nature of the package. It should, however, include the information required by paragraph 4.3.2 (purpose of label) by such means as tagging or accompanying documents. In these circumstances, all containers of hazardous chemicals should at least indicate the hazards of the contents by appropriate wording or symbols.

4.3.10. Each container or layer of packaging should be labelled. The particulars should always be visible on the container or package during each stage of the supply and use of chemicals.

4.3.11. Pesticide containers may also be labelled with additional information in accordance with applicable international guidelines, such as those of the United Nations Food and Agriculture Organization (FAO) on good labelling practice.

¹⁸ ILO, 1993. Safety in the use of chemicals at work. Code of practice. 01 January 1993. Available at: https://www.ilo.org/global/topics/safety-and-health-at-work/normative-instruments/code-of-practice/WCMS_107823/lang--en/index.htm

ILO instruments on major industrial accidents

C174 - Major Industrial Accidents Convention, 1993 (No. 174)¹⁹

Article 5

1. The competent authority, or a body approved or recognized by the competent authority, shall, after consulting the most representative organizations of employers and workers and other interested parties who may be affected, establish a system for the identification of major hazard installations as defined in Article 3 (c), based on a list of hazardous substances or of categories of hazardous substances or of both, together with their respective threshold quantities, in accordance with national laws and regulations or international standards.
2. The system mentioned in paragraph 1 above shall be regularly reviewed and updated.

Article 7

1. Employers shall identify any major hazard installation within their control on the basis of the system referred to in Article 5.

Article 9

In respect of each major hazard installation employers shall establish and maintain a documented system of major hazard control which includes provision for:

- a) the identification and analysis of hazards and the assessment of risks including consideration of possible interactions between substances;
- b) technical measures, including design, safety systems, construction, choice of chemicals, operation, maintenance and systematic inspection of the installation;
- c) organizational measures, including training and instruction of personnel, the provision of equipment in order to ensure their safety, staffing levels, hours of work, definition of responsibilities, and controls on outside contractors and temporary workers on the site of the installation;

Article 20

The workers and their representatives at a major hazard installation shall be consulted through appropriate cooperative mechanisms in order to ensure a safe system of work. In particular, the workers and their representatives shall:

- a) be adequately and suitably informed of the hazards associated with the major hazard installation and their likely consequences;

¹⁹ C174 – Prevention of Major Industrial Accidents Convention, 1993 (No. 174). 22 June 1993. 80th ILC session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=1000:12100:0::NO::P12100_INSTRUMENT_ID,P12100_LANG_CODE:312319,fr:NO

Code of practice on the prevention of major industrial accidents²⁰

Note: only includes key provisions unique to the Code of practice on the prevention of major industrial accidents

2.1.1. Competent authorities should make arrangements for both existing and proposed new major hazard installations to be clearly defined and identified by a list of hazardous substances or categories of substances and associated threshold quantities, which should include:

- a) very toxic chemicals such as: – methyl isocyanate; phosgene;
- b) toxic chemicals such as: acrylonitrile; ammonia; chlorine; sulphur dioxide; hydrogen sulphide; hydrogen cyanide; carbon disulphide; hydrogen fluoride; hydrogen chloride; sulphur trioxide;
- c) flammable gases and liquids;
- d) explosive substances such as: ammonium nitrate; nitroglycerine; trinitrotoluene.

3.1.3.1. The implementation of a major hazard control system should start with the identification of major hazard installations.

3.1.3.4. The notification should include a list of hazardous substances and quantities present which qualify the installation to be classified as a major hazard installation.

3.2.6.3. A safety report should document the results of a hazard analysis and inform the authorities about the standard of safety and the potential hazards of the installation.

3.2.7.1. In view of the crucial role of workers in the prevention of major accidents, works management should make sure that:

...

- b) workers are informed of the hazards of substances used;
- c) workers are adequately trained.

3.3.2.1. Workers and their representatives should have the right to receive comprehensive information of relevance to the hazards and risks connected with their workplace. In particular, they should be informed of:

- a) the chemical names and composition of the hazardous substances;
- b) the hazardous properties of such substances;
- c) the hazards of the installation and precautions to be taken;

...

3.4.2. Where technology or equipment would create a major hazard, the [international] supplier should provide, in addition, information on the following aspects:

- a) an identification of the hazardous substances, their properties, the quantities involved and the manner in which they are stored, processed or produced;

For consideration: Sections 8.3.4, 8.5.2.1 f), 9.1.2 b)

11.4.2.3. A list of all hazardous substances should be given, including:

- a) raw materials and the final products;
- b) intermediate products and by-products;
- c) waste products;
- d) catalysts, additives, etc.

²⁰ ILO, 1997. Prevention of major industrial accidents. Code of Practice. Available at: http://ilo.org/safework/info/standards-and-instruments/codes/WCMS_218624/lang--en/index.htm

11.4.2.4. Information about the hazardous substances should include:

- a) the process stage in which the substances are involved;
- b) the quantity of substances used;
- c) safety-related physical and chemical data;
- d) toxicological data;
- e) environmental impact data.

11.4.3.1. The description of the hazards of the installation should be based on a systematic hazard analysis, including:

- a) the identification of hazards; ...

12.2.1. The competent authorities should draw up a definition of a major hazard installation. This definition, based on a list of hazardous substances with their threshold quantities, should be clear and unambiguous.

ILO instruments addressing the core principles of occupational safety and health

C187 - Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)²¹

Article 3

- 3.** In formulating its national policy, each Member, in light of national conditions and practice and in consultation with the most representative organizations of employers and workers, shall promote basic principles such as assessing occupational risks or hazards; combating occupational risks or hazards at source; and developing a national preventative safety and health culture that includes information, consultation and training.

Article 5: National Program

...

- 2.** The national programme shall:
- b) contribute to the protection of workers by eliminating or minimizing, so far as is reasonably practicable, work-related hazards and risks, in accordance with national law and practice, in order to prevent occupational injuries, diseases and deaths and promote safety and health in the workplace;

C155 - Occupational Safety and Health Convention, 1981 (No. 155)²²

Article 12

Measures shall be taken, in accordance with national law and practice, with a view to ensuring that those who design, manufacture, import, provide or transfer machinery, equipment or substances for occupational use--

²¹ C187 – Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187). 15 June 2006. 95th ILC session. Geneva. Available at: https://www.ilo.org/dyn/normlex/de/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312332

²² C155 – Occupational Safety and Health Convention, 1981 (No. 155). 22 June 1981. 67th ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C155m

- a) satisfy themselves that, so far as is reasonably practicable, the machinery, equipment or substance does not entail dangers for the safety and health of those using it correctly;
- b) make available information concerning the correct installation and use of machinery and equipment and the correct use of substances, and information on hazards of machinery and equipment and dangerous properties of chemical substances and physical and biological agents or products, as well as instructions on how known hazards are to be avoided;

R164 - Occupational Safety and Health Recommendation, 1981 (No. 164)²³

II. Technical Fields of Action, Section 3

As appropriate for different branches of economic activity and different types of work and taking into account the principle of giving priority to eliminating hazards at their source, measures should be taken in pursuance of the policy referred to in Article 4 of the Convention, in particular in the following fields:

- h) manufacture, packing, labelling, transport, storage and use of dangerous substances and agents, disposal of their wastes and residues, and, as appropriate, their replacement by other substances or agents which are not dangerous or which are less dangerous

ILO instruments on occupational cancer

C139 - Occupational Cancer Convention, 1974 (No. 139)²⁴

Article 4

Each Member which ratifies this Convention shall take steps so that workers who have been, are, or are likely to be exposed to carcinogenic substances or agents are provided with all the available information on the dangers involved and on the measures to be taken.

R147 - Occupational Cancer Recommendation, 1974 (No. 147)²⁵

3. 1) The competent authority should prescribe the measures to be taken to protect workers against the risks of exposure to carcinogenic substances or agents.
4. 1) Employers should make every effort to use work processes which do not cause the formation, and particularly the emission in the working environment, of carcinogenic substances or agents, as main products, intermediates, by-products, waste products or otherwise.
- 2) Where complete elimination of a carcinogenic substance or agent is not possible, employers should use all appropriate measures, in consultation with the workers and their organisations and in the light of advice from competent sources, including occupational health services, to eliminate exposure or reduce it to a minimum in terms of numbers exposed, duration of exposure and degree of exposure.
- 3) In cases to be determined by the competent authority, the employer should make arrangements for the systematic surveillance of the duration and degree of exposure to carcinogenic substances or agents in the working environment.

23 R164 – Occupational Safety and Health Recommendation, 1981 (No. 164). 22 June 1981. 67th ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R164

24 C139 – Occupational Cancer Convention, 1974 (No. 139). 24 June 1974. 59th ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C139

25 R147 – Occupational Cancer Recommendation, 1974 (No. 147). 24 June 1974. 59th ILC session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100::NO:12100:P12100_ILO_CODE:R147:NO

4) Where carcinogenic substances or agents are transported or stored, all appropriate measures should be taken to prevent leakage or contamination.

5. Workers and others involved in occupational situations in which the risk of exposure to carcinogenic substances or agents may occur should conform to the safety procedures laid down and make proper use of all equipment furnished for their protection or the protection of others.

16(2). [The competent authority] should endeavour to establish the criteria for determining the carcinogenicity of substances and agents.

19. Employers should ensure that in the case of any substance or agent which is carcinogenic there is at the workplace an appropriate indication to any worker who may be liable to exposure of the danger which may arise.

ILO instruments on air pollution

C148 - Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148)²⁶

Article 4

1. National laws or regulations shall prescribe that measures be taken for the prevention and control of, and protection against, occupational hazards in the working environment due to air pollution, noise and vibration.
2. Provisions concerning the practical implementation of the measures so prescribed may be adopted through technical standards, codes of practice and other appropriate methods.

Article 8

1. The competent authority shall establish criteria for determining the hazards of exposure to air pollution...

Article 13

All persons concerned shall be adequately and suitably—

- a) informed of potential occupational hazards in the working environment due to air pollution, noise and vibration; and
- b) instructed in the measures available for the prevention and control of, and protection against, those hazards.

²⁶ C148 – Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148). 20 June 1977. 63rd ILC session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C148

ILO instruments on asbestos

C162 - Asbestos Convention, 1986 (No. 162)²⁷

Article 14

Producers and suppliers of asbestos and manufacturers and suppliers of products containing asbestos shall be made responsible for adequate labelling of the container and, where appropriate, the products, in a language and manner easily understood by the workers and the users concerned, as prescribed by the competent authority.

Article 22

1. The competent authority shall make appropriate arrangements, in consultation and collaboration with the most representative organisations of employers and workers concerned, to promote the dissemination of information and the education of all concerned with regard to health hazards due to exposure to asbestos and to methods of prevention and control.
2. The competent authority shall ensure that employers have established written policies and procedures on measures for the education and periodic training of workers on asbestos hazards and methods of prevention and control.
3. The employer shall ensure that all workers exposed or likely to be exposed to asbestos are informed about the health hazards related to their work, instructed in preventive measures and correct work practices and receive continuing training in these fields.

R172 - Asbestos Recommendation, 1986 (No. 172)²⁸

17. The measures to be taken to prevent or control the exposure, and to avoid exposure, of workers to asbestos should include in particular the following-
 - e) the areas of activity which involve exposure to asbestos should be clearly demarcated and indicated by warning signs restricting unauthorised access;
20. 1) Producers and suppliers of asbestos and manufacturers and suppliers of products containing asbestos should be made responsible for the appropriate and adequate labelling of the container or product.
 - 2) National laws or regulations should require that the label be printed in the language or languages in common use in the country concerned and indicate that the container or product contains asbestos, that the inhalation of asbestos dust carries a health risk, and that appropriate protective measures should be taken.
 - 3) National laws or regulations should require producers and suppliers of asbestos and manufacturers and suppliers of products containing asbestos to develop and provide a data sheet listing the asbestos content, health hazards and appropriate protective measures for the material or product.
40. The competent authority should take measures to promote the training and information of all persons concerned with respect to the prevention and control of, and protection against, health hazards due to occupational exposure to asbestos.

²⁷ C162 – Asbestos Convention, 1986 (No. 162). 24 June 1986. 72nd ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C162

²⁸ R172 – Asbestos Recommendation, 1986 (No. 172). 24 June 1986. 72nd ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312510:NO

41. The competent authority, in consultation with the most representative organisations of employers and workers concerned, should draw up suitable educational guides for employers, workers and others.
42. Employers should ensure that workers liable to be exposed to asbestos receive periodic training and instructions, at no cost to them, in a language and manner which are easily understood by them, on the effects of such exposure on health, on measures to be taken to prevent and control exposure to asbestos, especially on correct work practices which prevent and control the formation and release of asbestos dust into the air and on the use of the general and personal protective equipment placed at the workers' disposal.
43. Educational measures should draw attention to the particular danger to the health of workers created by the combination of smoking and exposure to asbestos.
44. Employers' and workers' organisations should take positive action to cooperate in and contribute to programmes of training, information, prevention, control and protection in relation to occupational hazards due to exposure to asbestos.

ILO instruments on benzene

C136 - Benzene Convention, 1971 (No. 136)²⁹

Article 12

The word "Benzene" and the necessary danger symbols shall be clearly visible on any container holding benzene or products containing benzene.

Article 13

Each Member shall take appropriate steps to provide that any worker exposed to benzene or products containing benzene receives appropriate instructions on measures to safeguard health and prevent accidents, as well as on the appropriate action if there is any evidence of poisoning.

R144 - Benzene Recommendation, 1971 (No. 144)³⁰

6. 1) Occupational hygiene and technical measures should be taken to ensure effective protection of workers exposed to benzene or to products containing benzene.
16. On the occasion of the medical examinations the workers concerned should be given written instructions on protective measures against the health hazards of benzene.
21. 1) The word "Benzene" and the necessary danger symbols should be clearly visible on any container holding benzene or products containing benzene.
2) An indication of the percentage of benzene contained in the product in question should also be given.
3) The danger symbols referred to in subparagraph (1) of this Paragraph should be internationally recognised.
23. Each Member should take appropriate steps to provide that any worker exposed to benzene or products containing benzene receives appropriate training and instructions at the

29 C136 – Benzene Convention, 1971 (No. 136). 23 June 1971. 56th ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C136

30 R144 – Benzene Recommendation, 1971 (No. 144). 23 June 1971. 56th ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R144

employer's expense on measures to safeguard health and prevent accidents, as well as on the appropriate action if there is any evidence of poisoning.

24. In appropriate positions in premises in which benzene or products containing benzene are used, notices should be displayed which indicate—
- a) the hazards;
 - b) the preventive measures to be taken;
 - c) the protective equipment to be used;
 - d) first-aid measures to be taken in cases of acute benzene poisoning

ILO instruments on chemical safety in agriculture

C184 - Safety and Health in Agriculture Convention, 2001 (No. 184)³¹

Article 7

In order to comply with the national policy referred to in Article 4 of the Convention, national laws and regulations or the competent authority shall provide, taking into account the size of the undertaking and the nature of its activity, that the employer shall:

- (a) carry out appropriate risk assessments in relation to the safety and health of workers and, on the basis of these results, adopt preventive and protective measures to ensure that under all conditions of their intended use, all agricultural activities, workplaces, machinery, equipment, chemicals, tools and processes under the control of the employer are safe and comply with prescribed safety and health standards;
- (b) ensure that adequate and appropriate training and comprehensible instructions on safety and health and any necessary guidance or supervision are provided to workers in agriculture, including information on the hazards and risks associated with their work and the action to be taken for their protection, taking into account their level of education and differences in language; ...

Article 12: Sound Management of Chemicals

The competent authority shall take measures, in accordance with national law and practice, to ensure that:

- a) there is an appropriate national system or any other system approved by the competent authority establishing specific criteria for the importation, classification, packaging and labelling of chemicals used in agriculture and for their banning or restriction

R192 - Safety and Health in Agriculture Recommendation, 2001 (No. 192)³²

4. 1) To give effect to Article 7 of the Convention, the competent authority should establish a national system for occupational safety and health surveillance which should include both workers' health surveillance and the surveillance of the working environment.

31 C184 – Safety and Health in Agriculture Convention, 2001 (No. 184). 21 June 2001. 89th ILC Session. Geneva. Available at: http://www.ilo.ch/dyn/normlex/de/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312329

32 R192 – Safety and Health in Agriculture Recommendation, 2001 (No. 192). 21 June 2001. 89th ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R192

2) This system should include the necessary risk assessment and, where appropriate, preventive and control measures with respect to, inter alia:

a) hazardous chemicals and waste;

5. To give effect to Article 7 of the Convention, a set of measures on safety and health at the level of the undertaking should include:

a) occupational safety and health services;

b) risk assessment and management measures in the following order of priority:

i) elimination of the risk;

ii) control of the risk at the source;

iii) minimization of the risk by such means as the design of safe work systems, the introduction of technical and organizational measures and safe practices, and training; and

7. 1) The measures prescribed concerning the sound management of chemicals in agriculture should be taken in the light of the principles of the Chemicals Convention and Recommendation, 1990, and other relevant international technical standards.

2) In particular, preventive and protective measures to be taken at the level of the undertaking should include:

...

e) training of agricultural workers on a continuing basis to include, as appropriate, training ... about hazards and on the precautions to be followed in connection with the use of chemicals at work.

Code of practice on occupational safety and health in agriculture³³

3.2.5 ii) The competent authority should: establish requirements for marking and labelling substances provided for use in agriculture, taking into account the need to harmonize such systems internationally;

3.6.1 c) provide information in the language of the user about any residual hazards, including appropriate warning labels and other markings. Chemicals should be accompanied by chemical safety data sheets and containers should be suitably labelled.

Section 10: Chemicals

10.2.2.2.4 Other chronic health effects are reportedly associated with pesticides include neurotoxicity, liver and thyroid disease and allergic dermatitis. Such effects tend to be specific to certain pesticides, so the information provided in chemical safety data sheets, pesticide labels and other health and safety materials should be consulted for each particular chemical.

10.3.1.2. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Annex 4 (United Nations, 2009) provides guidance on the preparation of chemical safety data sheets and the provision of information to the workplace audience, including workers, employers, health and safety professionals, emergency personnel, and relevant government agencies as well as members of the community. Chemical safety data sheets should be written in simple, clear, precise language. They should contain information under the following 16 headings: identification; hazard identification; composition/information on ingredients; first-aid measures; firefighting measures;

³³ ILO, 2011. Code of Practice on Safety and health in Agriculture. 28 November 2011. Available at: https://www.ilo.org/global/publications/books/WCMS_159457/lang--en/index.htm

accidental release measures; handling and storage; exposure controls/personal protection; physical and chemical properties; stability and reactivity; toxicological information; ecological information; disposal considerations; transport information; regulatory information; and other information. In addition, each chemical safety data sheet should contain a brief summary or conclusion of the data given, so that non-experts can identify all the hazards for the hazardous substance or mixture.

10.3.1.3. Chemical safety data sheets that include advice on safe handling of chemicals to ensure adequate prevention and protection should be readily available. All those concerned with storage and handling of chemicals, and with g

Code of practice on safety and health in forestry work³⁴

144. All tools, machines and hazardous chemicals used in forestry should:

a) comply with safety and health requirements as prescribed in international or national standards and recommendations, wherever these are available;

ILO instruments on chemical safety in construction

C167 - Safety and Health in Construction Convention, 1988 (No. 167)³⁵

Article 28

1. Where a worker is liable to be exposed to any chemical, physical or biological hazard to such an extent as is liable to be dangerous to health, appropriate preventive measures shall be taken against such exposure.
2. The preventive measures referred to in paragraph 1 above shall comprise-
3.
 - a) the replacement of hazardous substances by harmless or less hazardous substances wherever possible; or
 - b) technical measures applied to the plant, machinery, equipment or process; or
 - c) where it is not possible to comply with subparagraphs (a) or (b) above, other effective measures, including the use of personal protective equipment and protective clothing.
4. Where workers are required to enter any area in which a toxic or harmful substance may be present, or in which there may be an oxygen deficiency, or a flammable atmosphere, adequate measures shall be taken to guard against danger.

R175 - Safety and Health in Construction Recommendation, 1988 (No. 175)³⁶

9. Construction work should be planned, prepared and undertaken in such a way that-
 - a) risks liable to arise at the workplace are prevented as soon as possible;
 - b) excessively or unnecessarily strenuous work positions and movements are avoided;
 - c) organisation of work takes into account the safety and health of workers;

³⁴ ILO, 1998. Safety and health in forestry work. Code of practice. 01 January 1998. Available at: https://www.ilo.org/global/topics/safety-and-health-at-work/normative-instruments/code-of-practice/WCMS_107793/lang-en/index.htm

³⁵ C167 – Safety and Health in Construction Convention, 1988 (No. 167). 20 June 1988. 75th ILC session. Geneva. Available at: https://www.ilo.org/dyn/normlex/de/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312312:NO

³⁶ R175 – Safety and Health in Construction Recommendation, 1988 (No. 175). 20 June 1988. 75th ILC session. Geneva. Available at: https://www.ilo.org/dyn/normlex/de/f?p=1000:12100::NO:12100:P12100_INSTRUMENT_ID:312513

- d) materials and products are used which are suitable from a safety and health point of view;
- e) working methods are employed which protect workers against the harmful effects of chemical, physical and biological agents.

Code of practice on safety and health in construction³⁷

2.2.2. Employers should so provide and maintain workplaces, plant, equipment, tools and machinery and so organise construction work that as far as is reasonably practicable there is no risk of accident or injury to health of workers. In particular, construction work should be so planned, prepared and undertaken that:

[...]

- e) working methods are employed which protect workers against the harmful effects of chemical, physical and biological agents.

ILO instruments on chemical safety in mining

C176 - Safety and Health in Mines Convention, 1995 (No. 176)³⁸

Article 7

Employers shall take all necessary measures to eliminate or minimize the risks to safety and health in mines under their control, and in particular:

- e) ensure the monitoring, assessment and regular inspection of the working environment to identify the various hazards to which the workers may be exposed and to assess their level of exposure;

Article 9

Where workers are exposed to physical, chemical or biological hazards the employer shall:

- a) inform the workers, in a comprehensible manner, of the hazards associated with their work, the health risks involved and relevant preventive and protective measures;
- b) take appropriate measures to eliminate or minimize the risks resulting from exposure to those hazards;

R183 - Safety and Health in Mines Recommendation, 1995 (No. 183)³⁹

- 6.** Requirements relating to the supervision of safety and health in mines pursuant to Article 5, paragraph 2, of the Convention should, where appropriate, include those concerning:
 - a) certification and training;
 - b) inspection of the mine, mining equipment and installations;

³⁷ ILO, 1992. Safety and health in construction. Code of practice. 01 January 1992. Available at: https://www.ilo.org/global/topics/safety-and-health-at-work/normative-instruments/code-of-practice/WCMS_107826/lang--en/index.htm

³⁸ C176 – Safety and Health in Mines Convention, 1995 (No. 176). 22 June 1995. 82nd ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312321:NO

³⁹ R183 – Safety and health in mines recommendation, 1995 (No. 183). 22 June 1995. 82nd ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312521:NO

c) supervision of the handling, transportation, storage and use of explosives and of hazardous substances used or produced in the mining process;

7. Requirements pursuant to Article 5, paragraph 4, of the Convention, could provide that the suppliers of equipment, appliances, hazardous products and substances to the mine should ensure their compliance with national standards on safety and health, label products clearly and provide comprehensible information and instructions.

26. Pursuant to Article 13 of the Convention, workers and their safety and health representatives should receive or have access to, where appropriate, information which should include:

e) information and notices on all hazards at work including hazardous, toxic or harmful materials, agents or substances used at the mine;

Code of practice on safety and health in opencast mines⁴⁰

Section 9: Chemicals in the workplace

9.1.1.2: 123. Safety data sheets (SDS) that include advice on the safe handling of any chemical to ensure adequate prevention and protection should be readily available. All those concerned with the storage and handling of chemicals, and with general housekeeping, should be trained and should adopt safe systems of work at all times. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS Rev.6) provides guidance on the preparation of labels, SDS and the provision of information to workers.

The production of SDS in electronic format should be encouraged. Chemical safety data sheets should, as a minimum, meet the requirements of the competent authority and are recommended to contain the following core information:

- a) identification of manufacturer, product and ingredients;
- b) physical and chemical properties, and information on the health effects, physical hazards, environmental impact and relevant exposure limits; and
- c) recommendations concerning safe work practices; transport, storage and handling; waste disposal; protective clothing and PPE; first aid, firefighting and chemical spills.

Labels should, as a minimum, meet the requirements of the competent authority, and are recommended to contain the following core information:

- a) signal word or symbol; identification information, including the manufacturer, product and ingredients;
- b) risks and safety phrases, first-aid and disposal procedures; and
- c) reference to the SDS, and date of issue

⁴⁰ ILO, 2018. Code of practice on safety and health in opencast mines. 11 December 2018. Available at: https://www.ilo.org/sector/Resources/publications/WCMS_617123/lang--en/index.htm

Code of practice on safety and health in underground coalmines⁴¹

6.2.1.2.4. Material safety data sheets (MSDS) that include advice on the safe handling of any chemical to ensure adequate prevention and protection should be readily available. All those concerned with the storage and handling of chemicals, and with general housekeeping, should be trained and should adopt safe systems of work at all times. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (United Nations, 2003) provides guidance on the preparation of labels, MSDS and the provision of information to workers.

6.2.1.2.5. The production of material safety data sheets in electronic format should be encouraged. Chemical safety data sheets should, as a minimum, meet the requirements of the competent authority and are recommended to contain the following core information:

- a) identification of manufacturer, product and ingredients;
- b) physical and chemical properties, and information on the health effects, physical hazards, environmental impact and relevant exposure limits; and
- c) recommendations concerning safe work practices; transport, storage and handling; waste disposal; protective clothing and PPE; first aid, firefighting and chemical spills.

6.2.1.2.6. Labels should, as a minimum, meet the requirements of the competent authority, and are recommended to contain the following core information:

- a) signal word or symbol; identification information, including the manufacturer, product and ingredients;
- b) risks and safety phrases, first-aid and disposal procedures; and
- c) reference to the MSDS and the date of issue.

6.2.1.2.7. The ILO code of practice Safety in the use of chemicals at work (Geneva, 1993) provides comprehensive guidance on the above issues for chemicals and their use.

6.2.1.3.1.2. Each employer should:

- a) develop and implement a written hazard communication programme;
- b) maintain it for as long as a hazardous chemical is known to be at the mine; and
- c) share relevant information with other on-site employers whose miners can be affected.

6.2.1.3.1.3. The hazard communication programme should include the following:

1. how this part is put into practice at the mine through the use of:

- a) hazard determination;
- b) labels and other forms of warning;
- (c) MSDS; and
- d) miner training;

2. a list or other records identifying all hazardous chemicals known to be at the mine, which should:

- a) use a chemical identity that permits cross-referencing between the list, a chemical's label, and its MSDS; and
- b) be compiled for the whole mine or by individual work areas;

⁴¹ ILO, 2006. Safety and health in underground coalmines. 13 May 2006. Available at: https://www.ilo.org/global/topics/safety-and-health-at-work/normative-instruments/code-of-practice/WCMS_110254/lang--en/index.htm

3. at mines with more than one employer, the methods for:
 - a) providing other employers with access to MSDS; and
 - b) informing other employers about:
 - i) hazardous chemicals to which their workers can be exposed;
 - ii) the labelling system on the containers of these chemicals; and
 - iii) appropriate protective measures.

6.2.1.3.1.4. The employer should:

- (a) ensure that each container of a hazardous chemical has a label listing the ingredients and the appropriate hazard warnings; and
- (b) have an MSDS for each hazardous chemical used at the mine which lists the chemical's hazards and protective measures.

6.2.1.3.1.5. The employer should make current MSDS readily available and accessible to workers during each work shift for each hazardous chemical to which they may be exposed.

Code of practice on shipbuilding and shipbreaking⁴²

2.2.1.3. The competent authority should establish, in accordance with the provisions of relevant ILO Conventions and taking into account the need to harmonize such systems internationally:

- a) systems, including criteria, for classifying substances that may be hazardous to health;
- b) systems and criteria for assessing the relevance of the information required to determine whether a substance is hazardous;
- c) requirements for marking and labelling substances. Substances for use in shipbuilding and ship repair should be marked and labelled according to these requirements;
- d) criteria for the information contained in the substance safety data sheets received by employers; and
- e) systems and criteria for identifying safety hazards and appropriate risk control measures relating to structures, facilities, machinery, equipment, processes and operations used in shipbuilding and ship repair.

9.4.3. Containers and packages containing hazardous substances used in painting should:

- a) be plainly marked to indicate the contents, using the name of the chemical and its hazardous nature, and labelled with the appropriate hazard symbol; and
- b) carry or be accompanied by instructions for the safe handling and use of the contents.

10.1.

...

7. Employers should ensure that all chemicals handled, stored and transported or otherwise used are marked, giving their relevant characteristics and instructions on their use, in accordance with the provisions of:

- a) the ILO code of practice on safety in the use of chemicals at work (1993); and
- b) the chemical safety data sheets provided by the supplier.

⁴² ILO, 2019. Safety and health in shipbuilding and ship repair (Revised edition). Code of practice. 19 February 2019. Available at: https://www.ilo.org/sector/Resources/publications/WCMS_618575/lang--en/index.htm

8. Chemicals which have not been marked or are not provided with chemical safety data sheets should not be handled and stored until similar relevant information has been obtained by the employer and has been made available to workers and their representatives.
9. Where necessary in order to minimize the risk to workers, written instructions should be prepared specifying the correct procedure to be observed in these circumstances. The necessary steps should also be taken to inform all workers of possible hazards and the precautions to be taken when hazardous substances are likely to be encountered at the workplace, including evacuation procedures.

10.4 – Control measures

...

3. In accordance with the provisions of sections 6.5–6.9 of the ILO code of practice on safety in the use of chemicals at work (1993), specific control measures should be carried out for:
 - a) chemicals hazardous to health;
 - b) flammable, dangerously reactive or explosive chemicals;
 - c) the storage of hazardous chemicals;
 - d) the transport of chemicals; and
 - e) the disposal and treatment of chemicals;
4. The employer should:
 - a) inform each worker who could be exposed to dangerous substances about the hazards related to the chemicals, and other on-site employers whose workers could be exposed, about chemical hazards and appropriate protective measures;
 - b) ensure workers and/or trained first-aid personnel are aware of emergency procedures related to exposure to hazardous chemicals; and
 - c) provide workers with the necessary training and protection to prevent exposure to hazards, including protective clothing that is adaptable for both women and men.
5. Each employer should:
 - a) develop and implement a written hazard communication programme;
 - b) maintain it for as long as a hazardous chemical is known to be at the shipbuilding and ship repair facility; and
 - c) share relevant information with other on-site employers whose workers could be affected.

10.5. Chemical safety data sheets

1. Chemical safety data sheets (also called “material safety data sheets” or “safety data sheets” in some countries) should be obtained and made available for each of the hazardous substances identified. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (sixth revised edition, United Nations, 2015) provides guidance on the preparation of labels, safety data sheets and the provision of information to workers.
3. Labels should, as a minimum, meet the requirements of the competent authority, and should contain the following core information:
 - a) signal word or symbol; identification information, including the manufacturer, product and ingredients;
 - b) risks and safety phrases, first-aid and disposal procedures; and
 - c) reference to the chemical safety data sheets, and date of issue

R191 - Maternity Protection Recommendation, 2000 (No. 191)⁴³

- 6.** 1) Members should take measures to ensure assessment of any workplace risks related to the safety and health of the pregnant or nursing woman and her child. The results of the assessment should be made available to the woman concerned.

2) In any of the situations referred to in Article 3 of the Convention or where a significant risk has been identified under subparagraph (1) above, measures should be taken to provide, on the basis of a medical certificate as appropriate, an alternative to such work in the form of

- a) elimination of risk;
- b) an adaptation of her conditions of work;
- c) a transfer to another post, without loss of pay, when such an adaptation is not feasible; or
- d) paid leave, in accordance with national laws, regulations or practice, when such a transfer is not feasible.

3) Measures referred to in subparagraph (2) should in particular be taken in respect of:

- a) arduous work involving the manual lifting, carrying, pushing or pulling of loads;
- b) work involving exposure to biological, chemical or physical agents which represent a reproductive health hazard;
- c) work requiring special equilibrium;
- d) work involving physical strain due to prolonged periods of sitting or standing, to extreme temperatures, or to vibration.

⁴³ R191 – Maternity Protection Recommendation, 2000 (No. 191). 15 June 2000. 88th ILC Session. Geneva. Available at: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:::NO:12100:P12100_ILO_CODE:R191:NO



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