




International
Labour
Organization

THE SOUND MANAGEMENT OF **CHEMICALS AND WASTE** IN THE WORLD OF WORK





“[It is] the solemn obligation of the International Labour Organization to further (...) programmes which will achieve (...) adequate protection for the life and health of workers in all occupations.”

ILO Declaration of Philadelphia, 1944

Labour Administration, Labour Inspection and Occupational Safety
and Health Branch (LABADMIN/OSH)
Governance and Tripartism Department

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INTRODUCTION

Workers are among those most exposed to hazardous chemicals and waste in various sectors around the world, and particularly in developing countries, economies in transition and in the informal economy.

Workers are exposed to hazardous chemicals throughout the entire supply chain: from production, to handling, to storage, to transport, to disposal and treatment of waste chemicals.

Every year, **around 1 million workers** die from exposure to hazardous substances, including dusts, vapours and fumes.¹ The increase in the global production of chemicals will mean even more exposures for workers in the future.



The ILO was founded on the concept of guaranteeing adequate protection for the life and health of workers in all occupations.



The ILO continues to be a major actor in international fora on chemical safety and waste management. Its large number of legally binding Conventions creates a strong preventative and protective foundation in the area of chemicals and the world of work.



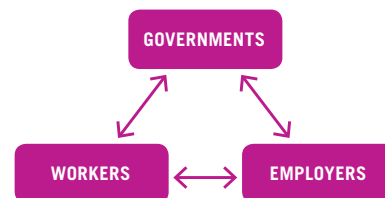
In the last 100 years, the ILO has adopted more than 50 legal instruments on the protection of workers, but also the public and the environment, from chemical hazards.




With its unique tripartite structure, the ILO brings together governments as well as workers' and employers' organizations from around the world to negotiate and adopt international standards in a tripartite setting.



The ILO offers many technical assistance programmes and provides training and guidance tools, with the goal of guaranteeing safe and healthy working conditions and minimizing chemical risks at work.



1 Hämäläinen et al, 2017. Global Estimates of Occupational Accidents and Work-related Illnesses 2017. Workplace Safety and Health Institute.



“Safe and healthy working
conditions are fundamental
to decent work.”

ILO Centenary Declaration
for the Future of Work, 2019

SCOPE OF CHEMICAL EXPOSURES ACROSS THE WORLD OF WORK

The ILO follows an all-encompassing approach to chemical hazards and risks and addresses all chemical-related exposures across all work-related processes. This includes the production, handling, storage and transport of chemicals, the disposal and treatment of chemical waste, the release of chemicals from the workplace, as well as the maintenance and cleaning of chemical equipment and containers. It also addresses the responsibility of chemical suppliers (manufacturers, importers and distributors) and deals with the trade of hazardous chemicals.

This all-encompassing approach is reflected in the main ILO chemical instruments, which have a general scope, covering all hazardous substances present in all branches of economic activity. In addition, the ILO's instruments address chemical risks that affect the public and the environment.

Within its scope of action on chemicals, the ILO focuses on specific sectoral and thematic activities



Mining Many hazardous chemicals are used in mining operations worldwide, particularly in Artisanal and Small Scale Mining (ASGM). These include mercury and cyanide, solvents and other chemicals contained in dust and gases. Workers in this sector suffer from injuries, acute poisonings as well as chronic diseases, including pneumoconiosis and diseases caused by mercury and its compounds.

The ILO has adopted the Safety and Health in Mines Convention, 1995 (No. 176), which deals with the use of all types of hazardous chemicals in mines. It also adopted several Codes of Practice, which provide guidance on the safe use of chemicals in mining.



Textile, clothing, leather and footwear Workers in the garment and textile industry can be exposed to a number of hazardous chemicals such as dyeing agents, detergents and glues, resin in footwear, hazardous dusts from textile fibres, among others. Due to exposure to these substances, many textile workers contract respiratory diseases and other serious illnesses.

Several ILO technical cooperation programmes are involved in improving the management of hazardous chemicals along textile and garment supply chains in many countries around the world.



Agriculture, plantations, other rural sectors Many agricultural enterprises worldwide, both formal and informal, use highly hazardous pesticides, as well as other agrochemicals. Pesticides can cause a number of acute and chronic severe health effects and illnesses for workers handling them, ranging from allergic reactions to respiratory diseases and cancers.

The ILO has adopted the Safety and Health in Agriculture Convention, 2001 (No. 184), which prescribes standards on the safe use of pesticides but also other chemicals used in agriculture. It also adopted several Codes of Practice, which provide guidance on the safe use of chemicals in agriculture.



Construction Workers in the construction sector are exposed to numerous hazardous chemicals, including but not limited to asbestos, lead, silica, flame retardants, welding fumes and formaldehyde. Asbestos has long been classified as a human carcinogen in all of its forms, leading to lung cancer, mesothelioma, cancer of the larynx and ovary, and asbestosis (fibrosis of the lungs).

The ILO has adopted the Safety and Health in Construction Convention, 1988 (No. 167), which deals with the use of hazardous chemicals at construction sites, and the Asbestos Convention, 1986 (No. 162) on the exposure of workers to asbestos. It also adopted several Codes of Practice, which provide guidance on the safe use of chemicals in construction.



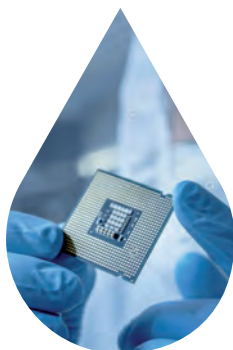
Electronics manufacturing and engineering The manufacture of high-tech electronic equipment and semiconductors requires the storage, use and disposal of a wide range of hazardous substances including solvents, acids, alkalines, metals, gases, plastics and resins, among others. An increasing number of studies have identified hazardous conditions in this sector, resulting in high rates of occupational diseases.

The ILO has produced a number of technical publications on occupational safety and health (OSH) in electrical and electronics manufacturing and holds global policy forums to discuss the issue.



Waste management Many occupational risks are related to exposure to hazardous waste materials. This concerns workers working in waste disposal facilities, but also workers working in industrial undertakings, where hazardous waste is produced. An important problem are chemicals contained in electronic waste, which have been associated with various health effects such as inflammation, oxidative stress, DNA damage and possibly even cancer.

The ILO takes part in the UN E-waste Coalition, which provides a global platform for support with this issue. It has produced technical publications on E-waste, held a tripartite Global Dialogue Forum on Decent Work in E-waste Management to discuss the issue and offers training courses and other technical assistance programmes to support its constituents in addressing e-waste risks.



Emerging chemical risks New chemicals and mixtures are constantly introduced to the market, bringing with them new risks for human health, which are not always fully understood. An important example of an emerging hazard are the risks connected to manufactured nanomaterials, whose production has been increasing considerably.

The emerging nature of chemical risks is reflected by ILO instruments on chemicals, such as the Chemicals Convention, 1990 (No. 170). This Convention has an open scope, covering all chemical hazards present at workplaces, including all new risks, which have emerged since the Convention's adoption.

Exposure to toxic substances and chemicals in the world of work represents a truly cross-cutting labour issue

Changes in working practices, demographics, technology and the environment have created new OSH concerns and have resulted in growing trends of occupational health inequalities among workers worldwide, particularly when it comes to exposure to toxic substances. Certain groups of workers, such as young workers, aging populations, migrant workers, women, workers in the informal sector, among others, may face increased exposures to toxic exposures and suffer disproportionately from their health effects.

“It is our duty to reaffirm the right to a safe and healthy working environment for all working people.”

Guy Ryder,
ILO Director General, 2017

Promoting Fundamental Principles and Rights at Work (FPRWs):

The protection of workers against exposure to toxic substances is closely linked to the ILO’s efforts to promote decent work and especially the FPRWs, which include the elimination of child labour, forced labour and discrimination at work, as well as the right to freedom of association and collective bargaining. In regards to child labour, due to critical periods of biological development, exposures to even low doses of chemicals can cause devastating and lifelong functional impairments. Victims of forced labour and discrimination are also more likely to be affected by chemical exposure due to their often unsafe working conditions. The same applies to workers who are not allowed to organize and bargain for their rights to be protected against hazardous substances.

Greening workplaces: The changing world of work, matched with the threat of climate change and environmental degradation, has prompted the ILO to develop numerous initiatives to promote the greening of jobs and workplaces. These initiatives include promoting safe and healthy workspaces, reducing of the use of dangerous chemicals, enhancing resource efficiency and building low-carbon sustainable societies.



More information:
ilo.org/labadmin-osh

INTERNATIONAL LABOUR STANDARDS

The two ILO Conventions that provide the basis for the sound management of all types of chemicals in the world of work are:

- the [Chemicals Convention, 1990 \(No. 170\)](#) and
- the [Prevention of Major Industrial Accidents Convention, 1993 \(No. 174\)](#)

Other related and equally important Conventions

Risk specific standards

- [Benzene Convention, 1971 \(No. 136\)](#)
This Convention limits the exposure of workers to benzene.
- [Occupational Cancer Convention, 1974 \(No. 139\)](#)
This Convention protects workers against carcinogenic substances used at workplaces.
- [Working Environment Convention, 1977 \(No. 148\)](#)
This Convention focuses on chemicals polluting the air and ambient environment of workplaces.
- [Asbestos Convention, 1986 \(No. 162\)](#)
This Convention protects workers against exposure to asbestos.

Sector specific instruments

- [Safety and Health in Construction Convention, 1988 \(No. 167\)](#)
This Convention deals with the use of hazardous substances, including chemicals in construction.
- [Safety and Health in Mines Convention, 1995 \(No. 176\)](#)
This Convention deals with hazardous substances, including chemicals used in mining.
- [Safety and Health in Agriculture Convention, 2001 \(No. 184\)](#)
This Convention prescribes standards on the safe use of chemicals used in agriculture, including pesticides.

ILO standards dealing with the fundamental principles of OSH that provide a framework for risk management, including chemical risks

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

The Convention is a general OSH instrument directed at all occupational risks to which workers can be exposed, including chemical risks.

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

This Convention is also a general OSH instrument, which prescribes the establishment of national policies, systems and programmes against all occupational risks, including chemicals.

- **Occupational Health Services Convention, 1985 (No. 161)**

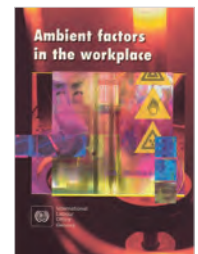
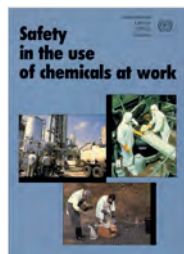
This Convention deals with the establishment of occupational health services at workplaces, which prevent occupational risks, including chemical risks.

- **List of Occupational Diseases Recommendation, 2002 (No. 194)**

This non-binding Recommendation contains a list of occupational diseases, including all major diseases caused by chemical exposures. It was updated in 2010.

All of the Conventions are accompanied by **Recommendations** for further implementation guidance.

The ILO has also produced various **Codes of Practice and guidelines** on the safe handling of chemicals in all kinds of hazardous working environments:



Did you
know

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- **109 member states have ratified** at least one major ILO Convention on chemicals and have thereby committed to implement measures addressing all or most chemical hazards at work.
- Most of the ILO instruments do not only cover a list of specific chemicals, but have an **open scope** and apply to all chemical hazards. They therefore also take into account any new hazard discovered after their adoption.
- ILO legal standards mostly focus on chemical safety at work. They however also contain provisions **protecting the general public and the environment** from chemical hazards. An example is Convention No. 170, which contains obligations on the classification and labelling of chemicals and the disposal of chemical waste. Convention No. 174 also protects the public and the environment from industrial accidents.

“Although globally recognized for over 50 years (...) the right of all workers to safe and healthy working conditions (...) continues to remain insufficiently implemented and realized, particularly with respect to occupational exposures to hazardous substances.”

Baskut Tuncak, UN Special Rapporteur on hazardous substances and wastes, 2019



SUPERVISION OF THE IMPLEMENTATION OF ILO STANDARDS

The implementation of all ILO Conventions is ensured by the ILO supervisory system.

The regular supervisory mechanism is managed by two bodies:

- The **Committee of Experts on the Application of Conventions and Recommendations (CEACR)**, which consists of distinguished legal experts from around the world
- The **Committee on the Application of Standards (CAS)**, which consists of representatives from all three ILO constituents (workers, employers and governments)

The mechanism functions as follows:



Each ILO member State must, at regular intervals, provide reports on the implementation of its ratified ILO Conventions. Employer and worker organizations are also allowed to submit comments on the state of implementation. The CEACR reviews these reports and makes “observations” on cases of non-compliance. A selection of the most serious cases is then discussed at the CAS.

The ILO Constitution also foresees two grievance procedures in Art. 24 and 26:



ILO constituents can file representations (Art. 24) and complaints (Art. 26) on the non-compliance of any ILO member State with an ILO Convention. They are reviewed by the ILO Governing Body, which can then decide to set up a tripartite committee or commission, with representatives from governments, workers and employers, to investigate the case and issue recommendations on it.

States with pending supervisory comments can request technical assistance programmes from the ILO, to help them develop and implement measures to achieve compliance.

Did you
know
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- The ILO supervisory system is the oldest UN supervisory system, dating back to the 1920s, and has been a model for similar mechanisms of other UN agencies. It is well established and has a **proven success rate**. Every year, the CEACR records on average 54 cases, in which substantial progress was achieved.
- In contrast to the supervisory mechanisms of other international instruments, the ILO supervisory system enables the **involvement of workers and employers**, which can file complaints and representations and send comments. In many cases the information provided by these actors is vital and helps track non-compliance cases, which would otherwise go unnoticed.
- The supervisory system regularly reviews Conventions related to chemicals. There are currently around **250 pending supervisory comments on chemical instruments**.



ilo.org/global/standard
ilo.org/dyn/normlex

“Workers have a need for, and right to, information about the chemicals they use at work”

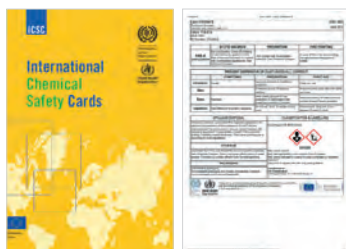
Preamble of ILO Convention No. 170

TOOLS AND TRAINING



Globally Harmonized System for the Classification and Labelling of Chemicals

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is an internationally agreed-upon standard on the classification and labelling of chemicals. As the ILO was a main initiator of the GHS and made major contributions to the system's development, its global implementation remains a priority for the ILO. The ILO, in collaboration with the United Nations Institute for Training and Research (UNITAR), has developed the UNITAR/ILO Global GHS Capacity Building Programme, to assist developing countries and countries with economies in transition to implement the GHS.



International Chemical Safety Cards

The International Chemical Safety Cards (ICSCs) are data sheets intended to provide essential safety and health information on chemicals in a clear and concise way. To date, more than 1700 Cards are available in more than 10 languages. The primary aim of the Cards is to promote the safe use of chemicals in the workplace and the main target users are workers. The ICSCs project is a common undertaking between the International Labour Organization and the World Health Organization with the cooperation of the European Commission. ICSCs are prepared in English by a group of experts that meets regularly to review the Cards before making them public. The information provided in the Cards is in line with the ILO Chemicals Convention, 1990 (No. 170) and the GHS.



Online chemical safety training modules

The ILO has created a number of online training modules, which introduce the safe use of chemicals at workplaces.

Technical publications on chemical safety

The ILO offers training with a large number of technical publications on chemical safety in various industries.



ILO International Training Center in Turin

The ILO offers training programmes related to chemical safety at work through its International Training Center (ITC) in Turin.



International **Training** Centre



ilo.org/labadmin-osh
itcilo.org

INTERNATIONAL COLLABORATION



Inter-Organization Programme for the Sound Management of Chemicals (IOMC)

The IOMC brings together nine international organizations actively involved in chemical safety. The objective of the IOMC is to strengthen international cooperation in the field of chemicals. The ILO was a founding member of the IOMC and continues to be an active Participating Organization. It participates at the regular IOMC meetings and reports all its projects on chemicals to the IOMC database.

 <https://www.who.int/iomc/en/>



IOMC Toolbox

The ILO is also a major contributor to the **IOMC toolbox**, an internet-based tool that enables countries to address specific national problems in chemicals management.

 iomctoolbox.oecd.org



Minamata Convention on Mercury

The Minamata Convention is an international treaty designed to protect human health and the environment from mercury emissions. The ILO's mandate on chemicals covers mercury and there exist many synergies between the Minamata Convention and the ILO's chemical instruments and activities. The ILO is clearly referred to in Article 16 of the convention which is titled "Health aspects" and the ILO is mandated to collaborate with the parties and WHO on health-related issues or activities. The ILO has been closely involved in processes under the Minamata Convention and has put a focus on promoting the Convention's implementation. There are also a number of ongoing ILO projects related to mercury use in artisanal and small scale gold mining and in the automobile dismantling sector.

 mercuryconvention.org



Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal

The Basel Convention is an international treaty designed to reduce the movements of hazardous waste between nations. The ILO mandate on chemicals as well as several ILO instruments cover risks related to the disposal of hazardous waste. To promote these synergies, the ILO is closely involved in the processes under the Basel Convention and regularly attends the Convention's Conferences of Parties. The ILO is also involved in several programmes addressing health risks related to hazardous waste, such as the UN E-waste Coalition.



basel.int



Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

The Rotterdam Convention is a multilateral treaty to promote shared responsibilities in relation to the importation of hazardous chemicals. The Convention was based on ILO Convention No. 170 and has many synergies with ILO chemical instruments, which also address the import and export of chemicals. The ILO closely follows the developments under the Convention and regularly attends its Conference of Parties.



pic.int



Stockholm Convention on Persistent Organic Pollutants

The Stockholm Convention is an international environmental treaty, signed in 2001 and effective from May 2004, that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs). POPs are substances, which do not degrade and therefore accumulate in living organisms. POPs are covered by the ILO mandate on chemicals. To promote these synergies, the ILO follows up with processes under the Stockholm Convention and regularly attends its Conference of Parties.



pops.int



Global Alliance to Eliminate Lead Paint

The ILO has joined the Global Alliance to Eliminate Lead Paint in which it leverages its unique tripartite structure to promote social dialogue towards the phase out of the manufacture and sale of lead paint.



<https://www.unenvironment.org/explore-topics/chemicals-waste/what-we-do/emerging-issues/global-alliance-eliminate-lead-paint>

INTERNATIONAL POLICY FRAMEWORKS



The ILO is heavily involved in international policy frameworks for the sound management of chemicals. This includes the **Strategic Approach on the International Management of Chemicals** (SAICM) founded in 2006 and its Beyond 2020 process.

 saicm.org



Science policy interface / Global Chemicals Outlook

The Global Chemicals Outlook (GCO) is an information tool prepared under the coordination of UNEP, which seeks to alert policymakers and other stakeholders to the critical role of the sound management of chemicals and waste in sustainable development. The ILO contributes to the GCO by providing evidence of the crucial link between the sound management of chemicals and waste and sustainable development within the world of work.

 unenvironment.org/fr/node/1209

ILO engagement in the international policy framework and the Beyond 2020 process



Sustainable Development Goals (SDGs)

The ILO activities on chemicals correspond to the 2030 Agenda for Sustainable Development, particularly under SDG 3, 8 and 12:



Target 3.9

“By 2030 substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination”

All ILO instruments and policies on chemicals further Target 3.9, by addressing chemical risks for workers as well as the public and the environment around the world.



Target 8.8

“Protect labour rights and promote safe and secure working environments of all workers, including migrant workers, particularly women migrants, and those in precarious employment”

Target 8.8 is promoted by the ILO policies on chemicals, which all aim at creating safe working environments and at minimizing chemical risks all around the world. All of the ILO’s activities in this field feed into the Target’s indicators, by aiming to reduce the number of occupational accidents and work-related diseases caused by chemicals, and to promote the respect for worker rights on occupational safety and health.



Target 12.4

“By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.”

Target 12.4 is promoted by all ILO instruments and policies on chemicals, which all aim at the sound management of chemicals throughout their life cycle.



ilo.org/global/topics/sdg-2030/sustainabledevelopment.un.org

“The enjoyment of the right of each worker to the highest attainable standard of physical and mental health can be undermined by unsafe exposure to hazardous substances at work.”

UN Human Rights Council, 2019

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