



The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Materials

18 April 2024

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Four Presentations



What is
the **GHS?**



Hazard
classification



Hazard
communication



Implementing **GHS** and
available data on
substance classification



Four Leaflets

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)



One of the outcomes of the Earth Summit in Rio de Janeiro 1992 was a mandate to develop an international hazard classification and labelling system for chemicals. The work progressed during a ten-year period and was completed in 2001 and the initial version of the GHS was published in 2003. Since then, GHS has been updated every second year and it is available in all six UN languages.

1 Purpose and Benefits

The purpose and benefits of the GHS are to:

- Enhance the protection of human health and the environment by providing an internationally comprehensible system for hazard communication;
- Provide a legal framework for countries without an existing system for classification and labelling of chemicals;
- Reduce the need for testing and evaluation of chemicals;
- Facilitate international trade in chemicals.



2 Elements of the GHS

The GHS pictograms



The GHS contains internationally harmonized criteria for classification of chemical substances and mixtures by type and severity considering physical, health and environmental hazards. The GHS also proposes harmonized communication elements, such as labels and safety data sheets, to make users aware of the hazards of the chemicals they are exposed to. Furthermore, the GHS provides a basis for harmonization of rules and regulations on chemicals at national, regional, and global level, and are as such an important facilitator for trade.

Introduction to the GHS

Hazard Classification and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)



The GHS classifies chemicals according to the type of hazard and the severity of the effect. GHS contains classification criteria that can be applied on pure substances as well as on mixtures of substances.

1 Hazard classes

The hazard class describes the type of hazard. The classes are grouped into physical hazards, health hazards and environmental hazards. GHS defines 17 physical hazard classes, 10 health hazard classes, and 2 environmental hazard classes.

- The physical hazard classes consider effects such as explosivity, flammability, oxidizing potential, metal corrosion, and chemicals under pressure. The criteria for physical hazard classification are aligned with the UN recommendations on the Transport of Dangerous Goods.



- The health hazard classes consider the ability of a chemical to cause harm (toxicity) in humans. The effects may occur after short-term (acute) or long-term (chronic) exposure.

- Acute toxicity is generally characterised by a single or short-term exposure at a high dose causing clinical symptoms of effects which hopefully can be treated and help the affected person to recover. One example is methanol intoxication. Allergic reactions are other type of effects that may occur after single or short-term exposure.

- Chronic toxicity refers to effects that may not cause any obvious immediate symptoms but where harm becomes evident over time, such as cancer and effects on reproduction or development. By the time symptoms develop and are recognised, treatment may not always be possible. One example is lung cancer due to asbestos exposure.

- Two types of environmental hazards are considered by the GHS.

- Hazardous to the aquatic environment means the ability of a chemical to cause harm to water-living organisms. The hazard class covers both acute (short-term) and chronic (long-term) exposure.

- Hazardous to the ozone layer covers the controlled substances listed in Annexes to the Montreal Protocol.

Hazard Classification

Hazard Communication and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)



When hazardous properties of chemical substances and mixtures have been identified and classified, it is important that this knowledge is passed on to handlers and users. The GHS includes provisions for hazard communication through label information and safety data sheets.

1 What constitutes a GHS label?

A label is a group of written, printed or graphic information elements, which is affixed to, printed on, or attached to the immediate container or to the outside packaging of a hazardous product. It is the main source of hazard information for consumers.

The GHS hazard communication elements are:

- Pictograms
- Signal words
- Hazard statements
- Precautionary statements

The nine GHS pictograms consist of black symbols in white squares, set at a top and with red frames. The black symbols indicate the hazard.



The precise nature and severity of the hazard may not be intuitively clear from the symbol alone. It is therefore important to consider the symbol as an alert signal that draws the attention to other information on the label.

The signal word, "Danger" or "Warning", indicates the severity of the hazard where "Danger" signals a more severe hazard than "Warning".



The hazard statement is a short phrase that explains the nature and severity of the hazard. There are hazard statements for physical hazards, health hazards and environmental hazards.

Hazard Communication

Implementing the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and available data on substance classification



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1 Benefits and costs of implementing GHS

The benefits of implementing GHS have been highlighted by bodies such as the European Chemicals Agency where the executive director in 2022 underscored its importance as a "backbone of chemicals management". The US Occupational Health and Safety Authority has also stressed the importance and benefits of GHS for the health and safety of workers and the public, as well as governments and companies.

Advantages of GHS implementation for governments include:

- Improved protection of workers and the public from chemical hazards;
- Fewer chemical accidents and incidents;
- Lower health care costs;
- Avoiding duplication of efforts in creating national systems;
- Reduction in the costs of enforcement;
- Improved reputation on chemical issues both domestically and internationally.



Advantages from GHS implementation for industry include:

- Leading to safer work environments – with fewer accidents and illnesses and reduced associated costs;
- Improving relations with employees;
- Increasing efficiency and reduce costs in compliance with hazard communication regulations;
- Facilitating market growth and trading;
- Maximising use of expert resources with minimum labour and costs;
- Improving corporate image and credibility.



Implementation

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Two videos

Video 1: What is the GHS?
Aim, development and implementation

Video 2: Content of the GHS
Hazard classification and communication



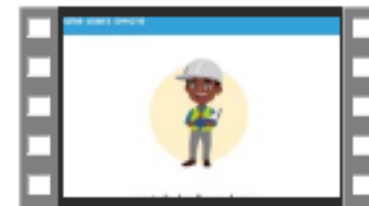
GHS Film 1 (Part
I)



GHS Film 1 (Part
II)



GHS Film 2 (Part
I)

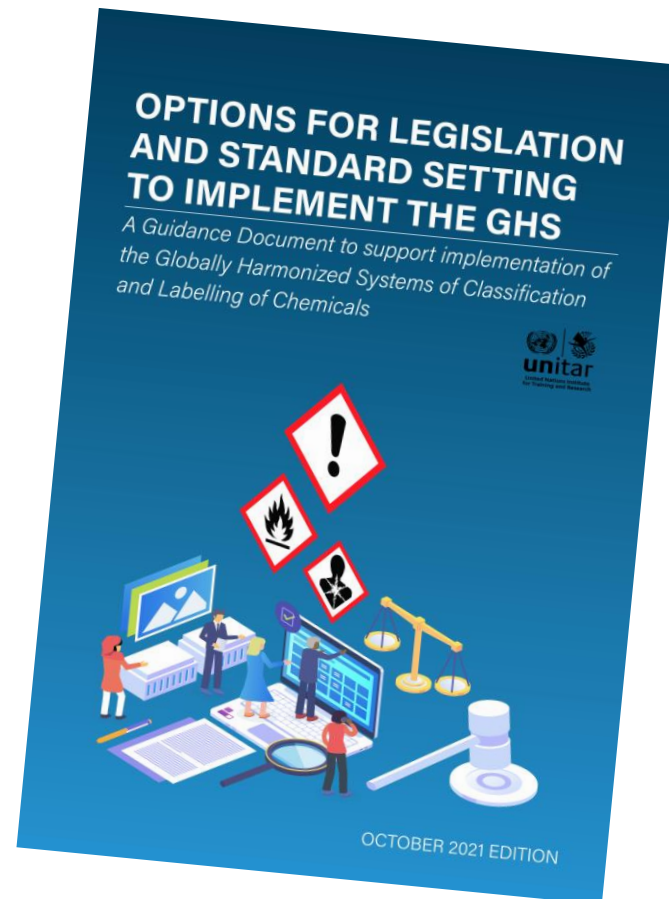


GHS Film 2 (Part
II)

<https://www.unitar.org/sustainable-development-goals/planet/our-portfolio/globally-harmonized-system-classification-and-labelling-chemicals>

Other materials

<https://unitar.org/sustainable-development-goals/planet/our-portfolio/globally-harmonized-system-classification-and-labelling-chemicals/global-partnership-implement-ghs>





**For more information, please contact
UNITAR**

<https://www.unitar.org/sustainable-development-goals/planet/our-portfolio/globally-harmonized-system-classification-and-labelling-chemicals>

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