Introduction to the GHS

Globally **H**armonized **S**ystem of Classification and Labelling of Chemicals

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Purpose and benefits of the GHS

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;

Reduce the need for testing and evaluation of chemicals;

Facilitate international trade in chemicals whose hazard have been properly assessed and identified on an international basis

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GHS is the basis for safe use of chemicals

Successful hazard communication alerts the user to the presence of a hazard and the need to minimize exposures and the resulting risks.

Fundamental questions:

What is it?

Is it hazardous?

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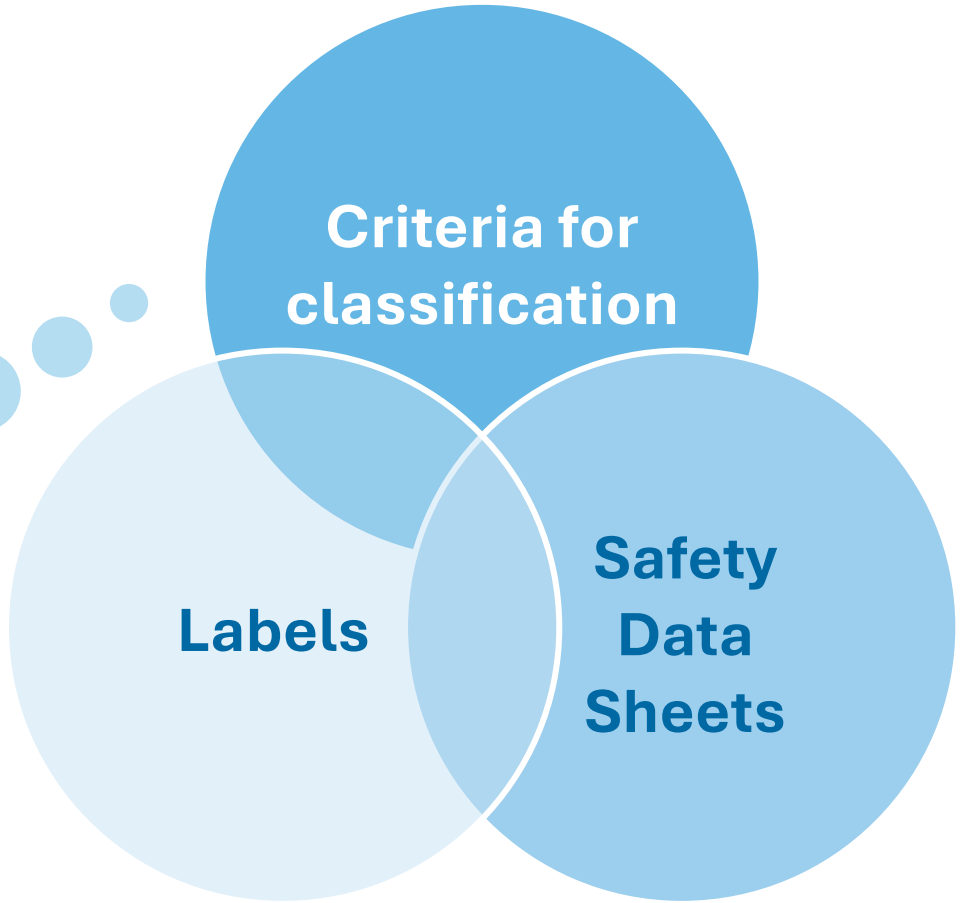
Elements of GHS

Hazard assessment

Is it hazardous? How hazardous is it?



How do you make people aware of the hazard?

Hazard communication

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Hazard classes

The hazard class describes the **type** of hazard

GHS includes:

- **17** Physical hazard classes *(GHS Chapters 2.1 – 2.17)*
- **10** Health hazard classes *(GHS Chapters 3.1 – 3.10)*
- **2** Environmental hazard classes *(GHS Chapters 4.1 – 4.2)*

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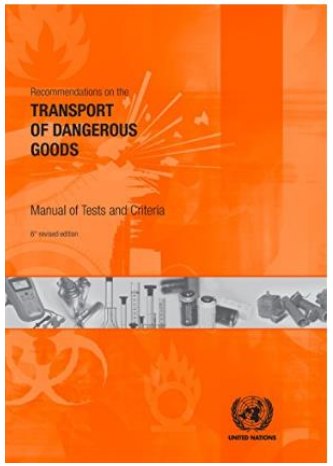
Physical hazard classes

The physical hazard classes covers properties such as:



- Flammability
- Explosivity
- Oxidising potential
- Metal corrosion
- Gas under pressure

The GHS classification criteria for physical hazards are adopted from the UN Manual of Tests and Criteria

2.1	Explosives
2.2	Flammable gases
2.3	Aerosols and chemicals under pressure
2.4	Oxidising gases
2.5	Gases under pressure
2.6	Flammable liquids
2.7	Flammable solids
2.8	Self-reactive substances and mixtures
2.9	Pyrophoric liquids
2.10	Pyrophoric solids
2.11	Self-heating substances and mixtures
2.12	Substances and mixtures which, in contact with water, emit flammable gases
2.13	Oxidising liquids
2.14	Oxidising solids
2.15	Organic peroxides
2.16	Corrosive to metals
2.17	Desensitized explosives

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Health hazard classes

3.1	Acute toxicity
3.2	Skin corrosion/irritation
3.3	Serious eye damage/eye irritation
3.4	Respiratory or skin sensitization
3.5	Germ cell mutagenicity
3.6	Carcinogenicity
3.7	Reproductive toxicity
3.8	Specific target organ toxicity (STOT) — single exposure
3.9	Specific target organ toxicity (STOT) — repeated exposure
3.10	Aspiration hazard

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Environmental hazard classes

4.1 Hazardous to the aquatic environment

Covers effects observed after both acute (short-term) and chronic (long-term) exposure.
The **persistency** (degradation rate) of a chemical in the environment and its **bioaccumulating potential** are important to consider in long-term hazard classification.

4.2 Hazardous to the ozone layer

Chemicals covered by the Montreal protocol

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Hazard categories

Differentiation of the hazard within a hazard class according to:

- the **severity of the effect**

or

- **weight of the evidence.**

Example

1	2	3	4	5

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Labelling

GHS hazard communication elements

- Pictograms
- Signal words
- Hazard statements
- Precautionary statements

Additional information on label

- *Product identifier*
- *Supplier identifier*
- *Supplemental information*

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Safety Data Sheet (SDS): The 16 sections

1. Identification
2. Hazard identification
3. Composition/information on ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information

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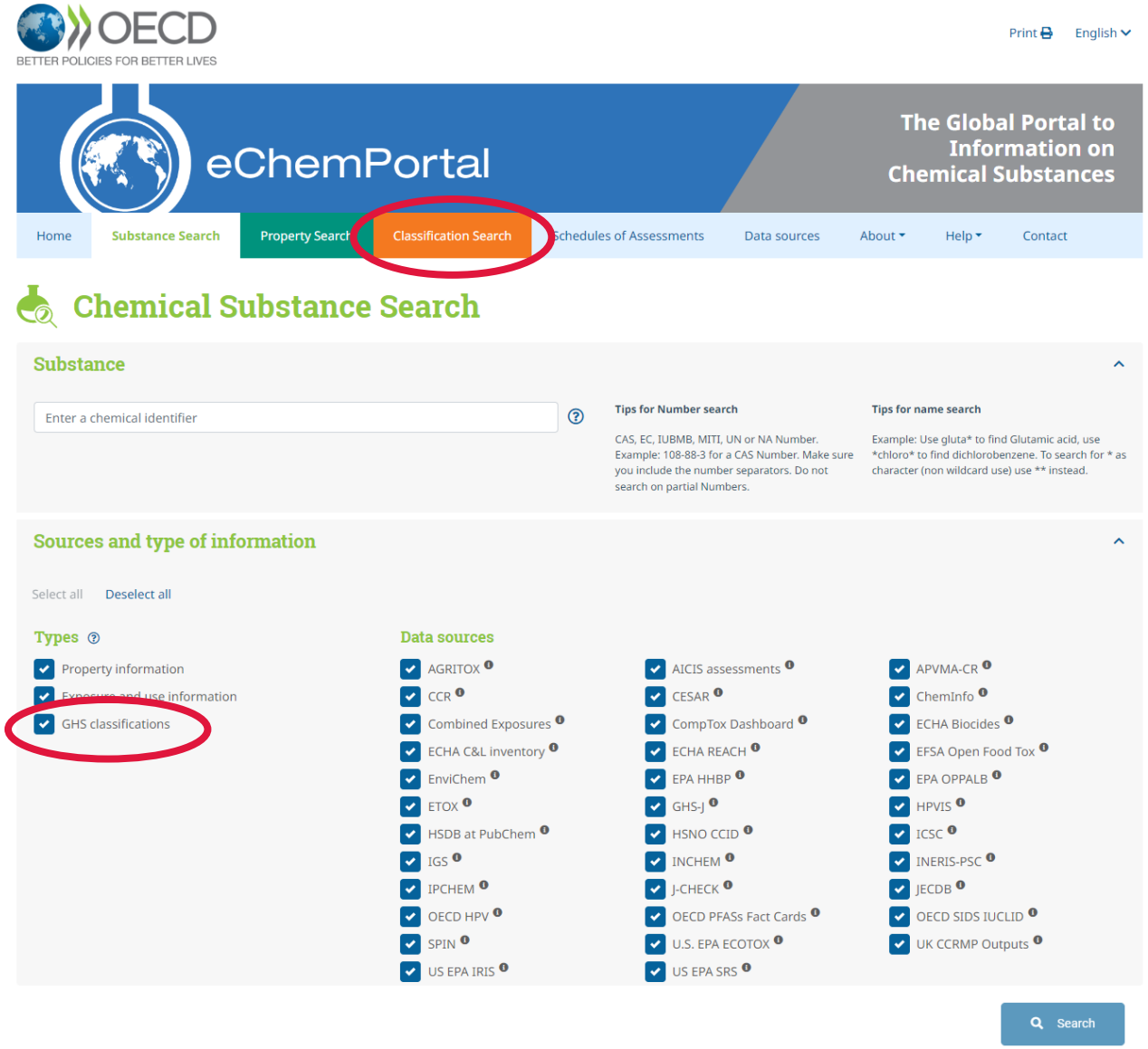
eChemPortal

eChemPortal provides free public access to information on properties of chemicals:

- Physical Chemical Properties
- Ecotoxicity
- Toxicity
- Environmental Fate and Behaviour
- Classification and labelling
- Exposure and use

eChemPortal allows searching of GHS classification results.



https://www.echemportal.org/echemportal/substance-search

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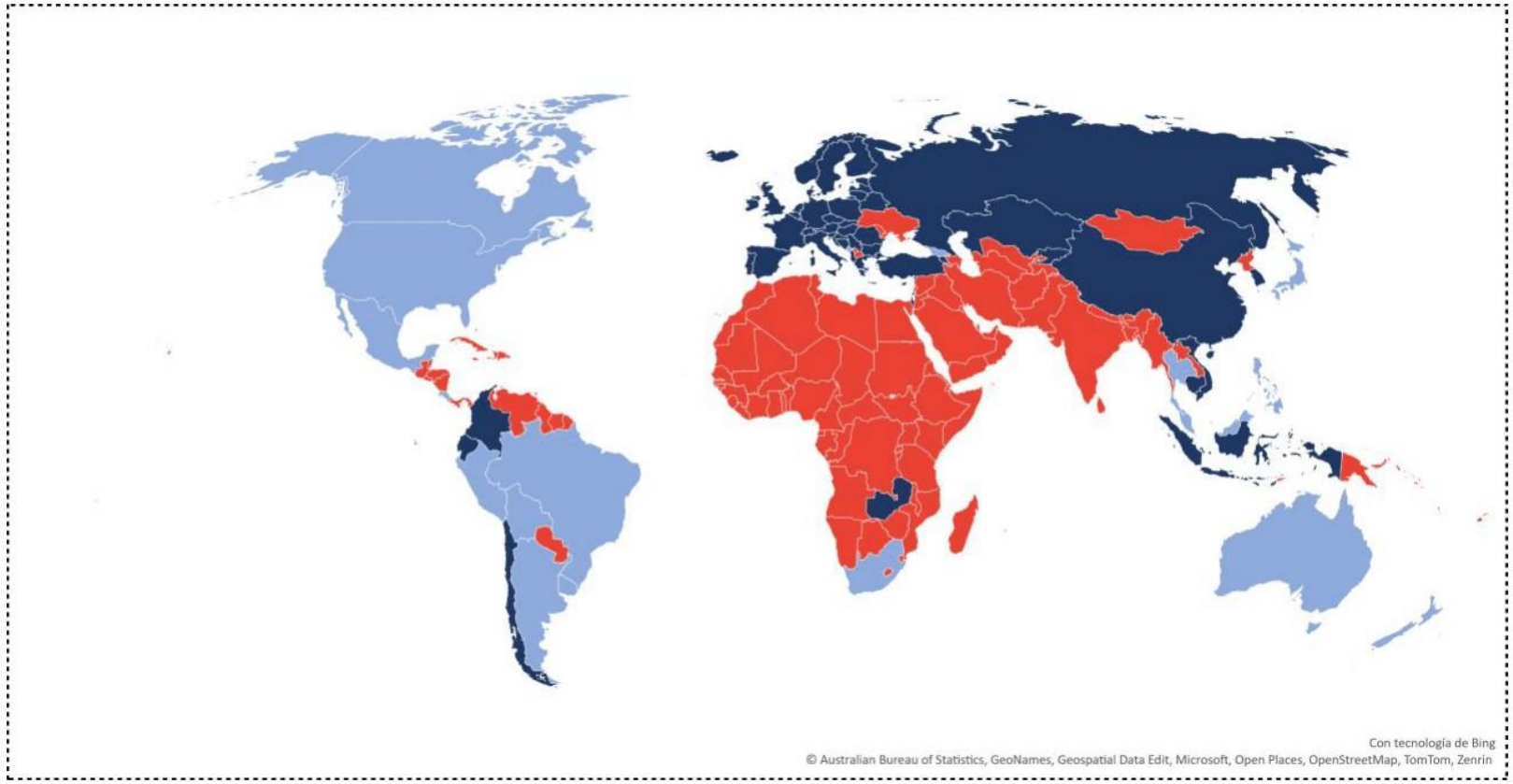
Global implementation of GHS



GHS IMPLEMENTATION KEY

0 - no legal implementation

1 - legal implemenation in 1 or 2 sectors

2 - legal implementation in all sectors

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

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