Hazard identification.

Usage	Transport		Usage	Transport	
		Explosive			Acute toxic (oral, skin, inhalation
		Flammable		Not applicable	Harmful Eye, skin and respiratory irritant Skin sensitizer Drowsiness or dizziness Hazardous to the ozone layer
		Oxidising		Not applicable	Health hazard,for example: Mutagenic Carcinogenic Reproductive toxicity Respirator sensitizer Specific Target Organ Toxicity Aspiration hazard
		Gas under pressure			Hazardous to the aquatic environment
		Material and skin corrosive, Serious eye damages			

Getting ahead through innovation.

With its innovative concepts, Linde is playing a pioneering role in the global market. As a technology leader, it is our task to constantly raise the bar. Traditionally driven by entrepreneurship, we are working steadily on new high-quality products and innovative processes.

Linde offers more. We create added value, clearly discernible competitive advantages, and greater profitability. Each concept is tailored specifically to meet our customers' requirements – offering standardized as well as customized solutions. This applies to all industries and all companies regardless of their size.

If you want to keep pace with tomorrow's competition, you need a partner by your side for whom top quality, process optimization, and enhanced productivity are part of daily business. However, we define partnership not merely as being there for you but being with you. After all, joint activities form the core of commercial success.

Linde – ideas become solutions.

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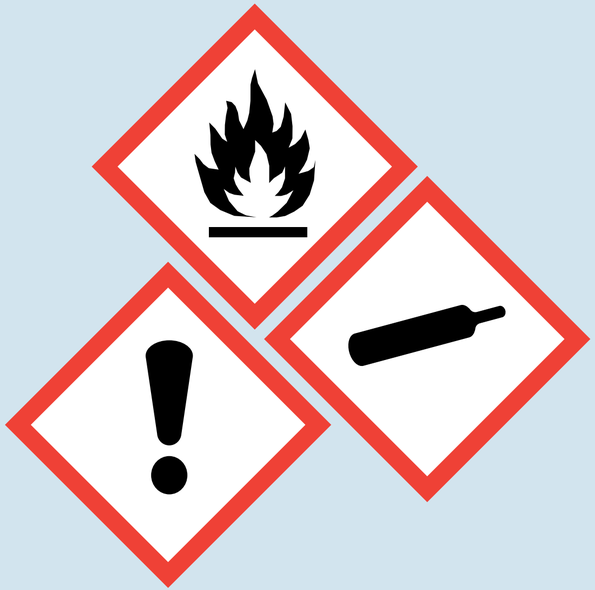
THE LINDE GROUP

Leading towards a global language of safety.



Harmonising the language of safety.

Launched in 2005 by the United Nations (UN), GHS stands for Globally Harmonised System of Classification and Labelling of Chemicals. Although it is not a formal treaty and is not legally binding, GHS is an international agreement that affects more than 60 countries. It is gradually being phased into national legislation around the world.

GHS provides a logical, comprehensive framework to
- define the physical, health and environmental hazards of chemicals
- classify and label substances and mixtures accordingly and
- harmonise hazard and precautionary communication systems through labels and safety datasheets.

The aim of GHS is, on the one hand, to protect human health and the environment in connection with the handling, transportation and use of chemicals. On the other, it aims to facilitate international trade. Although the benefits of a harmonised safety language are immense, the effort involved in aligning regional labelling and datasheets is also massive. Suppliers have to work hard to cascade the new harmonised safety information down through their distribution chains to end users. Users, in turn, can find the transition to new symbols and information confusing, especially if there are still regional variations.

Safety first

As a leading supplier of industrial gases, safety is our number one priority. As always, we are keen to comply with new safety guidelines as quickly and efficiently as possible. So it comes as no surprise that we should want to lead the way in complying with the new GHS guidelines. As a result, our cylinders and datasheets worldwide already reflect the new classification and labelling guidelines.

So what does partnering with Linde mean for you?

Having a trusted partner such as Linde at your side means that you can be confident that your cylinders will already be fully compliant by the time the new guidelines become effective in your region.

You can also save time and money in eliminating the need to reconcile, and comply with, the requirements of different national and regional systems. The new classifications and labels give you the insights you need to put appropriate safety measures and procedures in place. GHS thus allows you to proactively drive safety throughout your entire process flow. Looking beyond the employees who work directly with chemicals, this also benefits those who work with chemicals indirectly, such as warehouse managers, health and safety officers, goods handlers or even fire fighters.

It also means you stay up to date on the latest insights in the world of gases. Although the properties of gases do not change, the understanding of their physical properties can evolve. Hence, for instance, a gas mixture that was originally classified as non-toxic for usage may now be labelled as toxic. The new GHS regulations allow you to keep abreast of these changes.

At the same time, we understand that the new regulations can give rise to some confusion and to questions. To help guide you and your colleagues or partners through these, we have prepared a series of FAQs, which should ideally give you all the answers and insights you need for a safe, rapid transition. We only have room to cover a select few of these questions here; for the full list, please visit
www.linde-gas.com/GHS

FAQs.

What is the purpose of GHS?

GHS aims to:
- enhance the protection of human health and the environment by providing an internationally comprehensible system for hazard communication;
- provide a recognised framework for countries without an existing system;
- reduce the need for testing and evaluation of chemicals; and
- facilitate international trade in chemicals whose hazards have been properly assessed and identified on an international basis.

Which countries does it affect?

In principle all countries may be affected as GHS is global in scope. Regulatory authorities will decide how to apply the various elements of GHS based on local needs and target audiences.

When does it become law?

GHS becomes law when it is implemented in a specific country/region. The implementation timelines vary from one region to another and, in some cases, may also differ for pure substances and mixtures. The following table gives some timeline examples:

Country/region	Deadline for pure substances	Deadline for mixtures
European Union	01.12.2010	01.06.2015
United States of America	01.06.2015	01.06.2015
Australia	01.01.2017	01.01.2017

GHS/CLP safety symbols and hazard statements for pure gas substances and gas mixtures (2015).

[1]EC: 67/548/EEC Directive
[2]GHS-CLP: Globally Harmonized System of classification and labelling of chemicals- Reg. EC 1272/2008

		Old EC Classification[1]		New GHS-CLP Classification[2]		
		Symbol	R-phrases	Symbol	Signal word	H-statements
PHYSICAL HAZARDS	EXPLOSIVE		(R2, R3)		DANGER	H200, H201, H202, H203, H240, H241
			No phrase		WARNING	H204
	FLAMMABLE	No symbol	R10		WARNING	H221
					WARNING	H223, 226
			R11		DANGER WARNING	H225, H228 (cat.1) H228 (cat.2)
			R12		DANGER	H220, H222, H224
	CHEMICALLY INSTABLE		R6 R5		No additional signal word	H230 H231
			R17		DANGER	H250
	PYROPHORIC SELF HEATING		(R15)		DANGER WARNING	H260, H261 (cat.2) H261 (cat.3)
			R12		DANGER WARNING	H241, H242 (type C,D), H251, H242 (type E,F), H252
	ORGANIC PEROXIDE		R7		DANGER WARNING	H241, H242 (type C,D), H242 (type E,F)
			R8		DANGER	H270
	OXIDISING		R8, R9		DANGER WARNING	H271, H272 (cat.2), H272 (cat.3)
	GASES UNDER PRESSURE	No symbol	No phrase		WARNING	H280 H281
	CORROSIVE TO METALS	No symbol	No phrase		WARNING	H290
HEALTH HAZARDS	TOXIC		R28 R27 R26		DANGER	H300 H310 H330
			R25 R24 R23			H301 H311 H331
	CARCINOGENIC MUTAGENIC TOXIC FOR REPRODUCTION		R46 R45, R49		DANGER	H340 H350
			R39 R60, R61			H370 H360
			R48			H372
	HARMFUL	No symbol	No phrase			H304
			R42			H334
			R65			H305
			R68 R40		WARNING	H371, H373 H351
			R48 R62, R63			H373 H361
			R64	No symbol	No signal word	H362
			R22 R21 R20		WARNING	H302 H312 H332
	CORROSIVE		R34, R35		DANGER	H314
	IRRITANT		R41			H318
			R38 R36 R43		WARNING	H315 H319 H317
			R37			H335
	DROWSINESS OR DIZZINESS	No Symbol	R67			H336
ENVIRONMENTAL HAZARDS	HAZARDOUS TO AQUATIC ENVIRONMENT		R50 R50/53		WARNING	H400 H400, H410
			R51/53		No signal word	H411
	HAZARDOUS TO OZONE LAYER		R59		WARNING	H420