













## COMPRESSED GASES LABELING SYSTEMS



**Globally Harmonized System (GHS)** is a labeling system dictated by OSHA 29CFR1910.1200 on Hazard Communication Systems. The GHS approach is to make the labeling consistent internationally.

DOT is guidance from **Department of Transportation (DOT)** for labeling of hazardous materials during transport especially if there is an accident during movement informing emergency responders.

	GHS Label	DOT Label	GHS definition	DOT definition
<b>Compressed Gas</b>			<b>Gases under pressure</b> are gases that are contained in a receptacle at a pressure not less than 280 Pa at 20°C or as a refrigerated liquid.	<b>Non-Flammable Compressed gas</b> is any material or mixture that exerts an absolute pressure of 280 kPa (40.6 psia) or greater at 20° (68°F) in the packaging or is a cryogenic liquid and is not flammable.
<b>Flammables</b>			<b>Flammables</b> include flammable gases, liquids, and solids. <b>Flammable gas</b> means a gas having a flammable range in air at 20°C and a standard pressure of 101.3 kPa. <b>Flammable liquid</b> means a liquid having a flash point of not more than 93°C.	<b>Flammables</b> include flammable gases, liquids, and solids. <b>Flammable gas</b> means any material which is a gas at 20°C (68°F) or less and 101.3 kPa (14.7 psia) of pressure which: is ignitable at 101.3 kPa (14.7 psia) when in a mixture of 13 percent or less by volume with air; or has a flammable range at 101.3 kPa (14.7 psia) with air of at least 12 percent regardless of the lower limit.

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<b>Corrosives</b>			<p>Corrosives include several sub-categories:</p> <p><b>Corrosive to metal</b> means a substance or a mixture which by chemical action will materially damage, or even destroy, metals.</p> <p><b>Skin Corrosion</b> is the production of irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following the application of a test substance for up to 4 hours.</p> <p>Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discoloration due to blanching of the skin, complete areas of alopecia, and scars.</p> <p><b>Serious eye damage</b> means the production of tissue damage in the eye, or serious physical decay of vision, following application of a test substance to the anterior surface of the eye, which is not fully reversible within 21 days of application.</p>	<p><b>Corrosive material</b> is liquid or solid that causes visible destruction or irreversible damage to human skin tissue on contact. Also, it may be a liquid that has a severe corrosion rate on steel.</p>
<b>Oxidizers</b>			<p><b>Oxidizing gas</b> means any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does.</p>	<p>An <b>oxidizer</b> is a substance such as chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.</p>

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<b>Explosives</b>			An <b>explosive substance</b> (or mixture) is a solid or liquid which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings and includes pyrotechnic substances and mixtures.	An <b>explosive</b> is any chemical compound, mixture, or device which is designed to function by explosion that is substantially instantaneous with the release of gas and heat.
<b>Acute Toxicity/ Poisonous Material</b>			<b>Acute toxicity</b> refers to those adverse effects occurring following oral or dermal administration of a single dose of a substance, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours.	<b>Gas poisonous by inhalation</b> means a material which is a gas at 20°C (68°F) or less and a pressure of 101.3 kPa (14.7 psia) (a material which has a boiling point of 20°C (68°F) or less at 101.3 kPa (14.7 psia)) and which: is known to be so toxic to humans as to pose a hazard to health during transportation, or in the absence of adequate data on human toxicity, is presumed to be toxic to humans because when tested on laboratory animals it has an LC50 value of not more than 5000 mL/m <sup>3</sup> .

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<b>Irritant</b>		NA	The <b>Irritant</b> label identifies multiple hazard categories: skin sensitization, and lesser hazard categories for acute toxicity, skin corrosion, eye damage, and specific organ toxicity from repeated exposures.	NA
<b>Health Hazard</b>		NA	The label corresponds to multiple health hazards including respiratory sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity following single exposure, specific target organ toxicity following repeated exposures, and aspiration hazard.	NA