

GAS	SYMBOL	SPECIFIC GRAVITY	COLOR, ODOR OR TASTE	FLAMMABLE / EXPLOSIVE	SOURCE(S)	ROUTE OF ENTRY	TLV (PPM)*	TOXIC EFFECTS	FIRST AID
Air	—	1.0000	None	No	Atmosphere	Inhalation	—	—	—
Nitrogen	N <sub>2</sub>	0.967	None	No	About 4/5th of atmosphere. Rock strata from some mines.	Inhalation	—	Asphyxiant from oxygen deficiency.	Move victim to fresh air. Perform artificial respiration if needed.
Oxygen	O <sub>2</sub>	1.105	None	No	1/5th of atmosphere.	Inhalation	—	Oxygen deficiency Below 17%-panting Below 15%-dizziness Below 9%-collapse Below 7%-death	Move victim to fresh air. Perform artificial respiration if needed.
Carbon Dioxide	CO <sub>2</sub>	1.529	Low concentration - none. High concentration - slightly acidic taste	No	Oxidation of coal. Rotting mine timbers. Breathing, blasting, explosions, fires, diesel engines, and rock strata in some mines.	Inhalation	5,000	Concentrations of 5% can produce shortness of breath and headaches. Concentrations of 10% can produce death due to oxygen deficiency.	Move victim to fresh air. Perform artificial respiration if needed.
Methane	CH <sub>4</sub>	0.5545	None	Yes 5% - 15% with at least 12% Oxygen	Coal and rock strata, carbonaceous shale, and rotting mine timbers.	Inhalation	—	Oxygen deficiency	Move victim to fresh air. Perform artificial respiration if needed.
Carbon Monoxide	CO	0.967	None	Yes 12.5% - 74%	Diesel engines, fires, explosions, and blasting	Inhalation	50	Low concentrations can produce headache, dizziness and drowsiness. Higher concentrations can produce nausea, vomiting, collapse, coma and death.	Move victim to fresh air. Perform artificial respiration if needed.
Nitric Oxide	NO	1.036	Colorless in low concentrations. Reddish-brown in high concentrations. Odorless and tasteless.	No	Blasting or burning of dynamite, diesel engines, and electrical discharge.	Inhalation, skin and eye contact.	25	Irritation of eyes, nose and throat. Drowsiness and unconsciousness	Move victim to fresh air. Perform artificial respiration if needed.

Nitrogen Dioxide	NO2	1.589	Colorless in low concentrations. Reddish-brown in high concentrations. Sharp sweet odor and tasteless.	No	Blasting or burning of dynamite, diesel engines, and electrical discharge.	Inhalation, skin and eye contact.	5	Gas can irritate eyes and mucous membranes and cause pulmonary irritation. Extremely corrosive when inhaled - cause severe burns to skin, eyes and mucous membranes.	Irrigate eyes immediately. Flush skin with water. Move victim to fresh air. Perform artificial respiration if needed. If swallowed, get medical help, give large amounts of water - do not induce vomiting.
Sulfur Dioxide	SO2	2.264	Colorless, strong sulfur odor and acidic taste.	No	Fires involving iron pyrites. Some diesel fuels.	Inhalation, skin and eye contact.	5	Respiratory irritation. Corneal burns.	Irrigate eyes immediately. Flush skin with water. Move victim to fresh air. Perform artificial respiration if needed.
Hydrogen Sulfide	H2S	1.1910	Colorless and an odor of rotten eggs.	Yes 4.5% - 45% with enough Oxygen	Rotting mine timbers, mine water and rock strata in some mines.	Inhalation, skin and eye contact.	10	Irritation of eyes and respiratory tract. Acute exposure may cause immediate coma and rapid death from respiratory paralysis.	Irrigate eyes immediately. Flush skin with water. Move victim to fresh air. Perform artificial respiration if needed.
Hydrogen	H2	0.0695	None	Yes 4.1% - 74% with as little as 5% Oxygen	Fires, explosions, battery charging. Water or steam contacting hot carbonaceous material. Strong acids on metals.	Inhalation	—	Oxygen deficiency	Move victim to fresh air. Perform artificial respiration if needed.

\* PPM - parts of gas per million parts of the gas-air mixture