

CHLORINE FACT SHEET

North Carolina Division of Public Health • Occupational and Environmental Epidemiology Branch

Chemical Information

- Tenth highest volume chemical produced in the U.S.
- A yellow-green gas at room temperature.
- Has a strong irritating odor.
- Heavier than air and can collect in low-lying areas.
- Provides adequate warning of unsafe concentrations.
- Highly corrosive when it contacts moist tissues such as the eyes, skin, and upper respiratory tract.
- Used as bleach in the manufacture of paper and cloth and to make a wide variety of products.
- Used to sterilize drinking water and disinfect swimming pools.

Hazards Identification

Acute Exposure:

- Can cause burning of nose, throat, and eyes.
- Irritating and corrosive to skin, eyes, and respiratory tract.
- Can produce cough and worsen asthma symptoms.
- Exposure to liquid chlorine can result in frostbite injury.
- Corneal burns may occur at high concentrations.
- Symptoms may be apparent immediately or delayed for a few hours after exposure.
- The Environmental Protection Agency (EPA) Acute Exposure Guideline Level 1 (AEGL - 1) for chlorine is 0.5 ppm for an 8-hour period.

Chronic Exposure:

- Can cause corrosion of the teeth.
- May produce flu-like symptoms and occupational asthma.

Stability & Reactivity

- Reacts explosively and forms explosive compounds with acetylene, ether, turpentine, ammonia, fuel gas, hydrogen, and finely divided metals.

Handling & Storage

- Shipped in steel cylinders as a compressed liquid.
- Store in a cool, dry, well-ventilated area.
- Keep out of direct sunlight and away from heat and ignition sources.

Glossary

The Environmental Protection Agency (EPA) defines Acute Exposure Guideline Levels (AEGLs) as threshold exposure limits for the general public that are applicable to emergency exposure periods ranging from 10 minutes to 8 hours. The three AEGLs are defined as follows:

AEGL-1 – airborne concentration of a substance at which the general population could experience notable discomfort, irritation or certain asymptomatic non-sensory effects.

AEGL-2 – airborne concentration of a substance at which the general population could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

AEGL-3 – airborne concentration of a substance at which the general population could experience life threatening health effects or death.

This document was supported by funds from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) trust fund provided to the North Carolina Department of Health and Human Services under Cooperative Agreement 5U61TS000112 from the Agency for Toxic Substances and Disease Registry and the Centers for Disease Control and Prevention, U.S. Department of Health and Human Services

