

BROMINE FACT SHEET

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

Chemical Information

- Red-brown liquid
Bleach/chlorine-like and suffocating odor
- Highly toxic
- Flammable and dangerous fire risk.
- Toxic to skin, eyes, respiratory tract and gastrointestinal (GI) tract
- Runoff from fire control may be corrosive and/or toxic
- Formed from human activities
- Used to make other chemicals which are used to make flame retardants, agricultural chemicals, sanitizers, pharmaceuticals, etc.

Regulatory Standards

- The Environmental Protection Agency (EPA) Acute Exposure Guideline Level 1 (AEGl - 1) for bromine is 0.033 ppm for any time period.

Hazards Identification

Acute Exposure:

- Inhalation may cause cough and fluid buildup in the lungs.
- Can cause skin irritation and partial thickness burns.
- Can irritate the stomach, causing burns in the esophagus and stomach. Vomiting, drooling and abdominal pain can be associated with esophageal injury.
- In extreme cases ingestion can result in deep burns and necrosis of the GI tract resulting in GI bleeding.
- Ocular exposures can result in severe eye irritation and can lead to permanent vision loss or perforation of the eye.

Chronic Exposure:

- Can cause contact irritation, slow healing, painful acne-like skin eruptions, cardiovascular and GI disorders.
- Prolonged exposure can cause full thickness burns.

Stability & Reactivity

- Reacts violently with reducing materials (organic compounds with active hydrogen atoms such as aldehydes, ketones, carboxylic acids.), rubber, acetone
- Reacts explosively with acetylene, acrylonitrile, ammonia, diethyl zinc, dimethyl formamide, ethyl phosphine, hydrogen, isobutyrophenone, nickel carbonyl, nitrogen triiodide, oxygen difluoride, ozone, phosphorus, potassium, silane, silver azide, sodium and sodium carbide.
- May cause ignition when comes into contact with wood, cotton or straw.

Handling & Storage

- Store in cool, dry, well-ventilated location.
- Store separate from oxidizing materials.

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.

