

COBALT FACT SHEET

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

Chemical Information

- Odorless, silver-gray to black solid
- Used alloys in manufacturing and as a coloring agent for glass, ceramics and paint.
- Toxic via inhalation, ingestion and dermal contact routes.

Regulatory Standards

- The Occupational Safety & Health Administration (OSHA) set the PEL for cobalt exposures in the workplace at $0.1\text{mg}/\text{m}^3$ calculated as an 8-hour time-weighted average.¹
- The National Institute for Occupational Safety and Health (NIOSH) set the REL for cobalt exposures in the workplace at $0.05\text{mg}/\text{m}^3$ calculated as a 10-hour time-weighted average.

Hazards Identification

Acute Exposure:

- High levels of cobalt exposure by inhalation can result in congestion, edema and hemorrhage of the lung.

Chronic Exposure:

- Chronic inhalation exposure can cause irritation, wheezing, asthma, decreased lung function, pneumonia and fibrosis.
- Cobalt sensitization can develop overtime from cobalt exposure.
- Gastrointestinal effects such as nausea, vomiting and diarrhea can occur from oral exposure.
- Blood effects, liver damage and allergic dermatitis have also been observed from chronic cobalt exposure.
- Cardiomyopathy from chronic oral exposure may develop.
- The International Agency for Research on Cancer (IARC) classifies cobalt as a possible human carcinogen.

Stability & Reactivity

- Cobalt dust and fumes may cause fire or explode when in contact with strong oxidizers or ammonium nitrate.

Handling & Storage

- Keep separated from strong oxidizers.
- Store in closed containers in a cool, well-ventilated environment.
- Keep away from flames or ignition sources if working with cobalt powder or dust.

Glossary

PEL - The Occupational Health and Safety Administration defines Permissible Exposure Levels (PELs) as threshold levels for the workplace that are applicable to exposure periods of eight hours.

REL - The National Institute for Occupational Safety and Health defines Recommended Exposure Limit (RELs) as threshold levels for the workplace that are applicable to exposure periods of up to 10 hours in a 40 hour workweek.

Time weighted average (TWA) - The maximum average exposure to a hazardous contaminant to which workers may be exposed without experiencing significant adverse health effects over said period.

