

# CADMIUM FACT SHEET

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

## Chemical Information

- Blue-white metal or grayish-white powder
- Odorless
- Toxic via inhalation and ingestion routes
- Flammable in powder form
- Gathered as a byproduct of processing zinc ore
- Used in electroplating of autos, aircraft, electronic parts, various enamels, and Ni-Cd storage batteries

## Regulatory Standards

- The Environmental Protection Agency (EPA) Acute Exposure Guideline Level 1 (AEGL - 1) for cadmium is  $0.041 \text{ mg/m}^3$  for an 8-hour period.

## Hazards Identification

### **Acute Exposure:**

- Ingestion can severely irritate the stomach, leading to vomiting, diarrhea, and sometimes death
- Inhalation can severely damage the lungs and can cause death

### **Chronic Exposure:**

- Inhalation and ingestion of low levels of cadmium over time can lead to a build-up of cadmium in the kidneys, potentially resulting in kidney disease.
- Prolonged ingestion of cadmium can cause bones to become brittle and break easily.

## Stability & Reactivity

- Powder form is flammable, but metal form is noncombustible
- Violent explosion will occur if cadmium rod is submerged in hydrazoic acid after 30 min. Powdered cadmium will explode with contact to ammonium nitrate or when it is exposed to heat.
- Reacts with nitric acid and hydrochloric acid, elemental sulfur, selenium, and tellurium.

## Handling & Storage

- Store in closed containers and protect from physical damage.

## **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.

