

Antimony Trioxide

MATERIAL SAFETY DATA SHEET

I

PRODUCT IDENTIFICATION

Trade Name

:

Antimony

Synonym

:

Stibium, **Antimony** Metal

Chemical Nature

:

Metallic element

Formula

:

Sb

CAS #

:

7440-36-0

Molecular Weight

:

121.75

II

HAZARDOUS INGREDIENTS

Hazardous Component

%

OSHA/PEL

ACGIH/TLV

Antimony

0-100

0.5 m g/m

₃

0.5 m g/m

₃

SARA Title III Sec. 313

: Yes

III

PHYSICAL DATA

Boiling Point: 1587 °C

Melting Point: 630 °C

Specific Gravity: 6.6 g/cc

Vapor Density: N/A

Vapor Pressure: 1 mm Hg at 886 °C

% Volatiles: N/A

Solubility in H₂O : Insoluble

pH: N/A

Appearance and Odor

: Silver grey metal, odorless

IV

FIRE AND EXPLOSION HAZARDS DATA

Flash Point

: N/A

Autoignition Temperature

: N/A

Flammable Limits

:

Upper

: N/A

Lower

: N/A

Extinguishing Media

: Do not use halogenated extinguishers or water. Smother flames with dry powdered dolomite or other suitable dry powdered extinguishing agents.

Special Fire Fighting Procedures

: Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing - hats, boots and gloves.

Unusual Fire & Explosion Hazard

: In solid form, **antimony** is not readily flammable. If ground to a powder, or if vapors are produced, it presents a moderate fire and explosion hazard.

V

HEALTH HAZARD INFORMATION**Effects of Exposure**

: **Antimony** and its compounds are irritating to the skin and mucous membranes and are systemic poisons. Effects are reported to include a metallic taste in the mouth, vomiting, colic, loss of appetite and weight, and diarrhea. In addition, dermatitis may result

which starts as an inflammation of the hair follicles and can progress through pus formation and sloughing to leave a contracted scar.

Acute Effects

:

Inhalation

: Inhalation may cause upper respiratory tract irritation and systemic poisoning with symptoms including abdominal pain, nausea, dizziness and dry throat.

Ingestion

: May cause severe irritation of lining of stomach and intestines.

Skin

: Dermatitis may result from repeated skin contact with **antimony** compounds.

Eye

: May cause severe eye irritation.

Chronic Effects

: Liver and kidney abnormalities or pneumonitis may result from chronic **antimony** exposure. Some animal studies indicate that inhalation of **antimony trioxide** may pose an increased risk of lung cancer. Chronic inhalation of **antimony trioxide** is

reported to produce a reduction in white blood cells and damage to the liver.

Primary Routes of Entry

: Ingestion

Carcinogenicity

: IARC classifies **Antimony Trioxide** as a Group 2B carcinogen (possibly carcinogenic to humans).

Medical Conditions Possibly Aggravated

: Disease of the lung, kidney, liver and nervous system.

EMERGENCY AND FIRST AID PROCEDURES

:

INHALATION

: Remove to fresh air; get medical attention.

INGESTION

: Give 1-2 glasses of water and induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person. Get immediate medical attention.

SKIN

: Vacuum off excess dust. Wash well with soap and water. Avoid blowing particulate in the atmosphere.

EYE

: Flush well with running water to remove particulate. Consult a physician.

VI

REACTIVITY DATA

Stability

: Stable

Conditions to Avoid

: Thermal decomposition

Incompatibility (Material to Avoid)

: Strong acids, bases, nascent hydrogen or reducing agents.

Hazardous Decomposition Products

: At temperatures above the melting point, metal oxide fumes may be evolved. Under reducing conditions (i.e. any strong acid or base plus an active metal) or in the presence of nascent hydrogen, highly toxic stibine gas may be evolved. With nitric acid may emit NO_x; with other acids may emit toxic **antimony** hydride or stibine. Use adequate hood facilities.

Hazardous Polymerization

: Will not occur

VII

SPILL OR LEAK PROCEDURES

Steps to Be Taken in Case Material Is Released or Spilled

: Any method which keeps dusts to a minimum is acceptable.

Vacuuming is preferred for dust. Use approved respiratory protection if possibility of dust/fume exposure exists. Do not use compressed air for cleaning.

Waste Disposal Method

: Dispose of in accordance with all State, Federal and Local regulations.

DOT Regulations

: This material is only regulated by the DOT if in a powder form with a particle size <100 microns. The Reportable Quantity(RQ) is 1 pound.

VIII

SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type)

: Where airborne exposures may exceed OSHA/ACGIH permissible air concentrations, the minimum respiratory protection recommended is negative pressure air purifying respirator with cartridges that are NIOSH/MSHA

approved against dusts, fumes and mists having a TWA less than 0.05 mg/m

³

Ventilation

: Local exhaust - melt metal under hood with inert gas cover. Mechanical - use filters to trap oxide smoke generated.

Protective Gloves

: Rubber for chemical treatment; high temperature for melting.

Eye/Face Protection

: Safety glasses recommended where the possibility of getting dust particles in eyes exists.

Other Clothing and Equipment

: Full protective clothing is recommended for exposures that exceed permissible air concentrations.

All contaminated clothing should be removed before leaving plant premises.

IX

SPECIAL PRECAUTIONS

Normal Handling

: Use of approved respirators is required for applications where adequate ventilation cannot be provided.

Activities which generate dust or fume should be avoided. When melted, the temperature should be kept as low as possible.

Engineering Controls

: Local exhaust ventilation is recommended for du