The Chemical Company
19 Narragansett Avenue
Jamestown, RI 02835
Phone: (401) 423- 3100

Antimony Trioxide

MSDS

1. Supplier and Substance Identification

CHEMICAL NAME:	**Antimony Trioxide**
CHEMICAL FAMILY:	Antimony Compound
FORMULA:	Antimony Compound
DOT SHIPPING NAME:	Non-Hazardous Flame Retardant
ITEM NO:	50155
SUB NO:	4
DOT HAZARD CLASS:	50
ISSUE DATE:	January 1, 2009

Supplier:
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2. Composition /Information on ingredients

IDENTITY	CAS NO.	TYPICAL %	TWA	ACGIH STEL	OSHA PEL
Antimony Trioxide	1309-64-4	>99.5	0.5mg/m3 as Sb	none	0.5mg/m3 as Sb
Arsenic	7440-38-2	<0.10	0.01mg/m3 as As		0.01mg/m3 as As
Lead		<0.10	0.05mg/m3 as Pb		0.05mg/m3 as Pb

3. Hazard Identification

PERMISSIBLE EXPOSURE LIMITS (TLV)	The permissible exposure limit for antimony is 0.5mg/m3 as Sb-8 hour TWA, OSHA 29CFR 1910.1000 (May 28,1975)
TOXICITY DATA	
LC-50 INHALATION	See “Effects of Overexposure” section
LD-50 DERMAL	(rabbits) > 2g/kg
LD-50 INGESTION	(rats) >34.6g/kg
LC-50 FISH (LETHAL CONCENTRATION)	Unknown
HUMAN EXPOSURE INFORMATION/DATA	TLV-TWA for As is .2mg/m3 TLV-TWA FOR Zinc Oxide is 10mg/m3 See “Effects of Overexposure” section

4. First Aid Measures

INHALATION	Remove to fresh air. If not breathing, give artificial respiration, preferable mouth-to-mouth. If breathing is difficult, give oxygen. Call physician.
SKIN CONTACT	Flush skin with plenty of water. If irritation occurs consult a physician.

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EYE CONTACT	Flush eyes thoroughly with water for at least 15 minutes. Call physician.
INGESTION	(Swallowing) Drink a quart of water the induce vomiting by placing a finger far back in the throat. Call a physician. If vomiting cannot be induced take immediately to a physician or a hospital. Do not induce vomiting or give anything by mouth to an unconscious person.

5. Fire Fighting Measures

FLASH POINT	None
FLAMMABLE LIMITS IN AIR (% BY VOLUME)	Not Applicable
EXTINGUISHING MEDIA	Not Applicable
SPECIAL FIRE FIGHTING PROCEDURES	Not Applicable
UNUSUAL FIRE AND EXPLOSION HAZARDS	Not Applicable

6. Accidental Release Measures

Steps to be taken if material is spilled or released:
Vacuum all visible spilled materials and place in closed plastic bags for disposal. Thoroughly flush area of spill with water. Water flush should be used only after all visible material has been vacuumed. DO NOT flush spilled material to sewer.

7. Handling and Storage

Precautions to be taken during handling and storing:

1. When handling wear long sleeved shirt, rubber gloves and chemical safety goggles.
2. Wear respiratory protection where potential exposure to dust may occur.
3. Respiratory protection must be NIOSH/MSHA approved for protection against dust.
4. Store in a dry, well-ventilated area.
5. Do not store in open, unlabeled or mislabeled containers.

Other precautions:

1. Do not inhale dust. Inhalation may cause irritation of respiratory tract and mucous membranes. Long-term exposure may cause irreversible lung changes and other health effects.
2. Use only with adequate ventilation. Ventilation must be sufficient to limit employee exposure to antimony oxide in work area as far below OSHA permissible exposure limit as practical.
3. Avoid contact with eyes. May cause irritation and pain.
4. Do not take internally.
5. Do not eat or drink in work area.
6. Wash thoroughly after handling and take shower at end of work shift. Wear clean clothing daily.

8. Exposure Controls/Personal Protection

Respiratory Protection	NIOSH/MSHA approved dust respirator. Respiratory program must be in accordance with 29CFR 1910.134.
Ventilation Type	Local Exhaust-Sufficient to maintain employee exposure as far below OSHA permissible exposure limits as practical.
Eye Protection	Chemical Safety Goggles
Gloves	Rubber, Neoprene or Nitrile
Other Protective Equipment	Long sleeved shirt, eye-wash fountain and safety shower in immediate area. Personnel protective clothing and use of equipment must be in accordance with 29CFR 1910.133.

9. Physical and Chemical Properties

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BOILING POINT @ 760 HG	2597 F
VAPOR DENSITY (AIR-1)	Not Applicable
SPECIFIC GRAVITY (H20)	Not Applicable
Ph OF SOLUTIONS	Not Applicable
FREEZING/MELTING POINT	Not Applicable
SOLUBILITY (WEIGHT % IN WATER)	Slight
BULK DENSITY	Unknown
VOLUME % VOLATILE	Not Applicable
EVAPORATION RATE	Not Applicable
HEAT OF SOLUTION	Not Applicable
APPEARANCE AND ODOR	Fine White Powder/Odorless

10. Stability and Reactivity

STABILITY	Stable
CONDITIONS TO AVOID	None known
HAZARDOUS POLYMERIZATION	Will not occur
INCOMPATIBILITY (MATERIALS TO AVOID)	None known
HAZARDOUS DECOMPOSITION PRODUCTS	Not applicable

11. Toxicological Information

This section covers the effects of overexposure for inhalation, eye/skin contact, ingestion and other types of overexposure information in the order of the most hazardous and the most likely rout of overexposure.

INHALATION

Animal test (rats) @ 2.7mg/1 (2,760mg/m3) exposure for four hours produced no deaths. Gross pathological alterations found were slight focal discoloration and slight puffy white foci in the lungs.

ACUTE EFFECTS

Inhalations: Antimony oxide inhalation can cause irritation to the respiratory tract and mucous membranes.

Eye contact: Antimony oxide was found to be slightly - moderately irritating. Therefore, eye contact can cause irritation and pain.

Skin contact: Antimony oxide was found to be minimally irritating to the skin when tested on laboratory animals. However, human experience indicates that prolonged or repeated contact with skin can result in irritation and skin lesions, sometimes referred to as “antimony fleas”. Skin irritation is worse when the skin surface is moist as found with perspiration.

CHRONIC EFFECTS

The primary route of chronic overexposure to antimony oxide is by inhalation. Various primarily including dermatitis, rhinitis, inflammation of the upper and lower respiratory tract (including pneumonitis), with a few cases of gastritis, conjunctivitis, and sepal perforation.

Studies on animals exposed to antimony tri-sulfide have been reported to cause changes in the heart (EKG’s). However, no such reports have been reviewed to suggest similar alterations in EKG’s from exposure to antimony tri-oxide.

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Preliminary data from two independent chronic rat inhalation studies revealed antimony oxide induced both benign and malignant lung tumors in animal exposed for at least 12 months to concentration at 4.2 and 50 mg/m3. Animals exposed to 1.6mg/m3 have not shown a carcinogenic response to date. The tumors represented an unusual histological appearance from lesions previously described in rat lungs. A high incidence of lung fibrosis was also associated with exposure.

Antimony oxide and antimony compounds should be handled as suspect carcinogens because of these findings. Antimony oxide is an I.A.R.C. (Group IIB) suspect carcinogen and arsenic is and OSHA cancer hazard, an NTP Human Carcinogen, and an I.A.R.C. (Group I) Human Carcinogen.

AFFECTS OF ACUTE AND CHRONIC OVEREXPOSURE (ARSENIC)

Primary route of entry:	• Inhalation • Ingestion • Skin Contact
Inhalation can cause:	Can affect the heart, liver & kidney. Toxic symptoms include nervousness, vomiting, thirst, diarrhea, cyanosis, & collapse
Ingestion can cause:	Same as above plus GI tract irritation
Skin contact can cause:	Ulcerations

AFFECTS OF ACUTE AND CHRONIC OVEREXPOSURE (LEAD)

Primary route of entry:	• Inhalation • Ingestion • Skin Contact • Eye Contact
Inhalation can cause:	Respiratory irritation, weakness, vomiting, loss of appetite, loss of coordination, convulsions, stupor coma
Ingestion can cause:	Same as above
Skin contact can cause:	Same as above
Eye contact can cause:	Same as above

Left untreated can lead to weakness, insomnia, hypertension, irritation to skin and eye, anemia, metallic taste, constipation, headache, muscle and joint pain, neuromuscular dysfunction, paralysis, encephalopathy, peripheral neuropathy.

12. Ecological Information

Ecotoxicity:	Not available.
BOD5 and COD:	Not available.
Products of Biodegradation:	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation:	The products of degradation are as toxic as the original product.

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Special Remarks on the Products of Biodegradation:	Not available.

13. Disposal Consideration

Waste Disposal Method:

Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. It is your duty to dispose of the chemical materials and/or their containers in accordance with the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act and all state and local laws/regulations regarding disposal.

14. Transport Information

DOT SHIPPING NAME:	Non-Hazardous Flame Retardant
ITEM NO:	50155
SUB NO:	4
DOT HAZARD CLASS:	50

15. Regulatory Information

CLASSIFICATIONS

Sara Title III	HMIS FLAMM	NFPA FLAMM
Acute: Y	React:	React: 0
Chronic: Y	Health:	Health: 0
Press: Y	PPE:	
React: Y		
Fire: Y		

Components of this product which appear in the ingredients section of this MSDS are identified below if they are present in excess of the minimum reporting levels. Components which are not required to be identified by specific chemical name may have a generic description.

SARA TITLE III	Section 302 Extremely Hazardous Substance (s):	None
SARA TITLE III	Section 313 Toxic Chemicals	Antimony Oxide

STATE RIGHT TO KNOW

Components of this product which are specifically identified in the ingredients section of this MSDS may be listed on the following:

1. Pennsylvania Hazardous Substance List
2. Massachusetts Hazardous Substance List
3. California Proposition 65 – This product contains a chemical known by the State of California to cause cancer and a chemical also known by the State of California to be a reproductive toxin.

TSCA INVENTORY

Antimony oxide is reported in EPA TSCA inventory, 1980. Rev. 6: 19 May, 2003

REFERENCES

1. Acute Toxicity Studies with **Antimony Trioxide**, Industrial Bio-Test Laboratories, Inc., Northbrook, Illinois, 60062, Keplinger, et al., Report Nos. T-2298 and A-2297, Nov./Dec. 1972

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2. Industrial Hygiene and Toxicology, Second Edition, Frank A. Patty, 1962
3. Occupational Exposure to antimony, NIOSH Criteria Document, U.S. Department of HEW, September, 1978
4. WIL Research Laboratory, Study # WIL-1277-79, Acute Eye Irritation in Rabbits with Antimony Oxide, December 21, 1979
5. Assessment of Carcinogenicity of **Antimony Trioxide**, experimental Pathology Laboratory, Inc., Herndon, Virginia, August, 1980

16. Other Information

Disclaimer:

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall The Chemical Company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if The Chemical Company has been advised of the possibility of such damages.