

# Antimony(V) chloride

sc-239255



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Antimony(V) chloride

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

### EMERGENCY:

ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### SYNONYMS

SbCl<sub>5</sub>, "antimony perchloride", "butter of antimony", pentachloroantimony, "tin chloride"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	0	
Toxicity:	2	
Body Contact:	3	
Reactivity:	1	
Chronic:	2	

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Causes burns.

Risk of serious damage to eyes.

Harmful by inhalation and if swallowed.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

#### SWALLOWED

■ The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and esophagus.

<\/p>

■ Antimony poisoning causes similar symptoms to arsenic poisoning although vomiting is more prominent. There may be changes in the rhythm of the heart beat.

<\/p>

#### EYE

■ The material can produce chemical burns to the eye following direct contact. Vapors or mists may be extremely irritating.

■ If applied to the eyes, this material causes severe eye damage.

■ Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns. Mild burns of the epithelia generally recover rapidly and completely.

<\/p>

#### SKIN

■ The material can produce chemical burns following direct contact with the skin.

■ Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue.

■ Skin contact is not thought to produce harmful health effects (as classified using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.

<\/p>

■ Skin contact with antimony compounds may result in redness and severe irritation with the formation of itchy papules, pustules, skin lesions/ small septic blisters (antimony spots) within a few hours.

Rhinitis may also result from dermal contact.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

#### INHALED

■ Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

■ The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

■ Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness.

<\/p>

■ Inhalation hazard is increased at higher temperatures.

■ Hydrogen chloride (HCl) vapour or fumes present a hazard from a single acute exposure. Exposures of 1300 to 2000 ppm have been lethal to humans in a few minutes.

Inhalation of HCl may cause choking, coughing, burning sensation and may cause ulceration of the nose, throat and larynx. Fluid on the lungs followed by generalised lung damage may follow.

Breathing of HCl vapour may aggravate asthma and inflammatory or fibrotic pulmonary disease.

High concentrations cause necrosis of the tracheal and bronchial epithelium, pulmonary oedema, atelectasis and emphysema and damage to the pulmonary blood vessels and liver.

■ Inhalation of antimony can cause breathing difficulties and gastrointestinal upset including sore throat, shallow breathing, dizziness, weight loss, gum bleeds and anemia. Lung swelling and congestion can occur.

<\/p>

#### CHRONIC HEALTH EFFECTS

■ Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs.

<\/p>

Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Chronic minor exposure to hydrogen chloride (HCl) vapour or fume may cause discolouration or erosion of the teeth, bleeding of the nose and gums; and ulceration of the nasal mucous membranes.

Repeated exposures of animals to concentrations of about 34 ppm HCl produced no immediate toxic effects.

Workers exposed to hydrochloric acid suffered from gastritis and a number of cases of chronic bronchitis have also been reported.

Repeated or prolonged exposure to dilute solutions of HCl may cause dermatitis.

Repeated or prolonged exposure to antimony and its compounds may produce inflammation of the mouth cavity, dry throat, metallic taste, gum infection, perforation of the nasal septum and throat, laryngitis, headache, difficulty breathing, indigestion, nausea, vomiting, diarrhea, loss of appetite, anemia, weight loss, tightness and pain in the chest, sleeplessness, muscular pain and weakness, dizziness, pharyngitis,

bronchitis and pneumonia. Degenerative changes of the liver and kidney may occur.

<p>

Repeated exposure to low vapour concentrations can cause skin tenderness, bleeding of the nose and gums, chronic bronchitis, gastritis. Chronic exposure by inhalation may result in rhinitis, pharyngitis, tracheitis, and over a longer term, bronchitis and eventually pneumoconiosis with obstructive lung disease and emphysema.

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
antimony pentachloride	7647-18-9	>98
hydrolysis yields		
<a href="#">hydrogen chloride</a>	7647-01-0	
<a href="#">antimony pentoxide</a>	1314-60-9	

### Section 4 - FIRST AID MEASURES

#### SWALLOWED

· For advice, contact a Poisons Information Center or a doctor at once. · Urgent hospital treatment is likely to be needed.

#### EYE

■ If this product comes in contact with the eyes: · Immediately hold eyelids apart and flush the eye continuously with running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

#### SKIN

■ If skin or hair contact occurs: · Immediately flush body and clothes with large amounts of water, using safety shower if available. · Quickly remove all contaminated clothing, including footwear.

#### INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested. Inhalation of vapors or aerosols (mists, fumes) may cause lung edema. Corrosive substances may cause lung damage (e.g. <p>

#### NOTES TO PHYSICIAN

- For acute or short term repeated exposures to strong acids:
  - Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
  - Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling.
  - Chelation with British Anti-Lewisite (BAL) for serious antimony exposures should be employed.
  - Dialyse as needed. The role of exchange diffusion is not clear.

### Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	0.975 @ 22.7
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	2.358 (16 deg C)
Lower Explosive Limit (%):	Not available

#### EXTINGUISHING MEDIA

· DO NOT use water.

#### FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.

· May be violently or explosively reactive.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

#### GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Non combustible.

· Not considered to be a significant fire risk.

Decomposition may produce toxic fumes of: hydrogen chloride, metal oxides.

#### FIRE INCOMPATIBILITY

· Keep dry.

· NOTE: May develop pressure in containers; open carefully. Vent periodically.

None known.

#### PERSONAL PROTECTION

Glasses:

Safety Glasses.

Full face- shield.

Gloves:

Respirator:

Type B-P Filter of sufficient capacity

## Section 6 - ACCIDENTAL RELEASE MEASURES

### MINOR SPILLS

- Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
- Check regularly for spills and leaks.
- Clean up all spills immediately.
- Avoid breathing vapors and contact with skin and eyes.

### MAJOR SPILLS

- DO NOT touch the spill material.
- Environmental hazard - contain spillage.
- Clear area of personnel and move upwind.
  - Alert Emergency Responders and tell them location and nature of hazard.

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- DO NOT allow clothing wet with material to stay in contact with skin.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

### RECOMMENDED STORAGE METHODS

- DO NOT use aluminum or galvanized containers.

Check regularly for spills and leaks.

Glass container.

- Lined metal can, Lined metal pail/drum
- Plastic pail.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	Notes
Canada - British Columbia Occupational Exposure Limits	antimony pentachloride (Hydrogen chloride Revised 2003)					2		
Canada - Ontario Occupational Exposure Limits	antimony pentachloride (Hydrogen chloride)					2		
US - Minnesota Permissible Exposure Limits (PELs)	antimony pentachloride (Hydrogen chloride)					5	7	
US ACGIH Threshold Limit Values (TLV)	antimony pentachloride (Hydrogen chloride)					2		TLV Basis: upper respiratory tract irritation
US NIOSH Recommended Exposure Limits (RELs)	antimony pentachloride (Hydrogen chloride)					5	7	

Canada - Alberta Occupational Exposure Limits	antimony pentachloride (Hydrogen chloride)					2	3
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	antimony pentachloride (Hydrogen chloride)					5	7
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	antimony pentachloride (Hydrogen chloride)	(C)5	(C)7				
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	antimony pentachloride (Hydrogen chloride)					5	7
US - California Permissible Exposure Limits for Chemical Contaminants	antimony pentachloride (Hydrogen chloride; muriatic acid)	5	7			C	
US - Idaho - Limits for Air Contaminants	antimony pentachloride (Hydrogen chloride)					5	7
US - Hawaii Air Contaminant Limits	antimony pentachloride (Hydrogen chloride)					5	7
US - Alaska Limits for Air Contaminants	antimony pentachloride (Hydrogen chloride)					5	7
US - Michigan Exposure Limits for Air Contaminants	antimony pentachloride (Hydrogen chloride)					5	7
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	antimony pentachloride (Hydrogen chloride)	5	7	-	-		
US - Washington Permissible exposure limits of air contaminants	antimony pentachloride (Hydrogen chloride)					5.0	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	antimony pentachloride (Hydrogen chloride)					2	
US - Oregon Permissible Exposure Limits (Z-1)	antimony pentachloride (Hydrogen chloride)					5	7
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	antimony pentachloride (Hydrogen chloride)					5	7

Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	antimony pentachloride (Hydrogen chloride)			5	7,5	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	antimony pentachloride (Hydrogen chloride)			5	7	
Canada - Northwest Territories Occupational Exposure Limits (English)	antimony pentachloride (Hydrogen chloride)			5	7.5	
Canada - Nova Scotia Occupational Exposure Limits	antimony pentachloride (Hydrogen chloride)			2		TLV Basis: upper respiratory tract irritation
Canada - Prince Edward Island Occupational Exposure Limits	antimony pentachloride (Hydrogen chloride)			2		TLV Basis: upper respiratory tract irritation
Canada - British Columbia Occupational Exposure Limits	hydrogen chloride (Hydrogen chloride Revised 2003)			2		
Canada - Ontario Occupational Exposure Limits	hydrogen chloride (Hydrogen chloride)			2		
US - Minnesota Permissible Exposure Limits (PELs)	hydrogen chloride (Hydrogen chloride)			5	7	
US ACGIH Threshold Limit Values (TLV)	hydrogen chloride (Hydrogen chloride)			2		TLV Basis: upper respiratory tract irritation
US NIOSH Recommended Exposure Limits (RELs)	hydrogen chloride (Hydrogen chloride)			5	7	
Canada - Alberta Occupational Exposure Limits	hydrogen chloride (Hydrogen chloride)			2	3	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	hydrogen chloride (Hydrogen chloride)			5	7	
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	hydrogen chloride (Hydrogen chloride)	(C)5	(C)7			
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	hydrogen chloride (Hydrogen chloride)			5	7	
US - California Permissible Exposure Limits for Chemical Contaminants	hydrogen chloride (Hydrogen chloride; muriatic acid)	5	7	C		

US - Idaho - Limits for Air Contaminants	hydrogen chloride (Hydrogen chloride)		5	7		
US - Hawaii Air Contaminant Limits	hydrogen chloride (Hydrogen chloride)		5	7		
US - Alaska Limits for Air Contaminants	hydrogen chloride (Hydrogen chloride)		5	7		
US - Michigan Exposure Limits for Air Contaminants	hydrogen chloride (Hydrogen chloride)		5	7		
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	hydrogen chloride (Hydrogen chloride)	5	7	-	-	
US - Washington Permissible exposure limits of air contaminants	hydrogen chloride (Hydrogen chloride)		5.0			
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	hydrogen chloride (Hydrogen chloride)		2			
US - Oregon Permissible Exposure Limits (Z-1)	hydrogen chloride (Hydrogen chloride)		5	7		
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	hydrogen chloride (Hydrogen chloride)		5	7		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	hydrogen chloride (Hydrogen chloride)		5	7,5		
US OSHA Permissible Exposure Levels (PELs) - Table Z1	hydrogen chloride (Hydrogen chloride)		5	7		
Canada - Northwest Territories Occupational Exposure Limits (English)	hydrogen chloride (Hydrogen chloride)		5	7.5		
Canada - Nova Scotia Occupational Exposure Limits	hydrogen chloride (Hydrogen chloride)		2			TLV Basis: upper respiratory tract irritation
Canada - Prince Edward Island Occupational Exposure Limits	hydrogen chloride (Hydrogen chloride)		2			TLV Basis: upper respiratory tract irritation

ENDOELTABLE

## PERSONAL PROTECTION



## RESPIRATOR

Type B-P Filter of sufficient capacity  
Consult your EHS staff for recommendations

## EYE

- Chemical goggles.
- Full face shield.

## HANDS/FEET

- Elbow length PVC gloves.
  - When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
- frequency and duration of contact,
  - chemical resistance of glove material,
  - glove thickness and
  - dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Neoprene gloves.

## OTHER

- Overalls.
- PVC Apron.

## ENGINEERING CONTROLS

- Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.

<\p>

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Liquid.  
Corrosive.  
Acid.

State	Liquid	Molecular Weight	299.05
Melting Range (°F)	38.3	Viscosity	Not Available
Boiling Range (°F)	154.4 (14 mm Hg)	Solubility in water (g/L)	Reacts
Flash Point (°F)	Not Applicable	pH (1% solution)	<7
Decomposition Temp (°F)	Not Applicable	pH (as supplied)	Not available
Autoignition Temp (°F)	Not available	Vapor Pressure (mmHg)	0.975 @ 22.7
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	2.358 (16 deg C)
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	100	Evaporation Rate	Not available

### APPEARANCE

Yellow oily liquid which fumes in air; mixes with water. Soluble in hydrochloric acid, chloroform, carbon tetrachloride. Small amounts of water produce mono- and tetra- hydrates producing a solid. Large amounts of water cause hydrolysis to Sb2O5 and hydrochloric acid.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Contact with alkaline material liberates heat.
- Presence of incompatible materials.



**STORAGE INCOMPATIBILITY**

- Inorganic acids are generally soluble in water with the release of hydrogen ions. The resulting solutions have pH's of less than 7.0.
- Inorganic acids neutralize chemical bases (for example: amines and inorganic hydroxides) to form salts.
- Hydrogen chloride:
  - reacts strongly with strong oxidisers (releasing chlorine gas), acetic anhydride, caesium cyanotridecahydrodecaborate(2-), ethylidene difluoride, hexalithium disilicide, metal acetylide, sodium, silicon dioxide, tetraselenium tetranitride, and many organic materials
  - is incompatible with aliphatic amines, alkanolamines, alkylene oxides, aluminium, aluminium-titanium alloys, aromatic amines, amides, 2-aminoethanol, ammonia, ammonium hydroxide, calcium phosphide, chlorosulfonic acid, ethylenediamine, ethyleneimine, epichlorohydrin, isocyanates, metal acetylides, metal carbides, oleum, organic anhydrides, perchloric acid, 3-propiolactone, sulfuric acid, uranium phosphide, vinyl acetate, vinylidene fluoride
  - attacks most metals forming flammable hydrogen gas, and some plastics, rubbers and coatings.
- Reacts with mild steel, galvanized steel / zinc producing hydrogen gas which may form an explosive mixture with air.
- Segregate from alcohol, water.
- NOTE: May develop pressure in containers; open carefully. Vent periodically.
- Avoid storage with metals, metal oxides, hydroxides, amines, carbonates, alkaline materials, acetic anhydride, cyanides, sulfides, sulphites, phosphides, acetylides, borides, carbides, silicides, vinyl acetate, formaldehyde and potassium permanganate.
- For incompatible materials - refer to Section 7 - Handling and Storage.

**Section 11 - TOXICOLOGICAL INFORMATION**

ANTIMONY PENTACHLORIDE

**TOXICITY AND IRRITATION**

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (rat) LD50: 1115 mg/kg	Nil Reported
Inhalation (rat) LC50: 720 mg/m <sup>3</sup> /2h	
Inhalation (mouse) LC50: 620 mg/kg	
Oral (guinea pig) LD50: 900 mg/kg	

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

**CARCINOGEN**

ANTIMONY COMPOUNDS	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65-MC
--------------------	---	--------------	--------

**Section 12 - ECOLOGICAL INFORMATION**

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 This material and its container must be disposed of as hazardous waste.  
 Avoid release to the environment.  
 Refer to special instructions/ safety data sheets.

**Ecotoxicity**

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
antimony pentachloride	LOW		LOW	HIGH
hydrogen chloride	LOW		LOW	HIGH

**GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles**

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No \_\_\_\_\_  
 \_\_\_\_\_ Hydrochlo 864 389 Ino 0 0 Ino 1 NI 1 1 3 3C 3 DE 3 ric acid rg / CAS:7647- 18- 9 / MW4025000

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships)  
 NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation,  
 B1=Acuteaquatic toxicity LC/EC1C50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg),  
 C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion,

D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

## Section 13 - DISPOSAL CONSIDERATIONS

### US EPA Waste Number & Descriptions

#### A. General Product Information

Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

For small quantities:

- Dissolve the material (in water or acid solution as appropriate) or convert it to a water soluble state with appropriate oxidizing agent.
- Precipitate as the sulfide, adjusting the pH to neutral to complete the precipitation.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

## Section 14 - TRANSPORTATION INFORMATION



DOT:

Symbols: None Hazard class or Division: 8

Identification Numbers: UN1730 PG: II

Label Codes: 8 Special provisions: B2, IB2, T7, TP2

Packaging: Exceptions: None Packaging: Non- bulk: 202

Packaging: Exceptions: None Quantity limitations: 1 L

Passenger aircraft/rail:

Quantity Limitations: Cargo 30 L Vessel stowage: Location: C aircraft only:

Vessel stowage: Other: 40

Hazardous materials descriptions and proper shipping names:

Antimony pentachloride, liquid

### Air Transport IATA:

ICAO/IATA Class: 8 ICAO/IATA Subrisk: None

UN/ID Number: 1730 Packing Group: II

Special provisions: None

Cargo Only

Packing Instructions: 812 Maximum Qty/Pack: 30 L

Passenger and Cargo Passenger and Cargo

Packing Instructions: 808 Maximum Qty/Pack: 1 L

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: Y808 Maximum Qty/Pack: 0.5 L

Shipping Name: ANTIMONY PENTACHLORIDE, LIQUID

### Maritime Transport IMDG:

IMDG Class: 8 IMDG Subrisk: None

UN Number: 1730 Packing Group: II

EMS Number: F-A , S-B Special provisions: None  
Limited Quantities: 1 L Marine Pollutant: Yes  
Shipping Name: ANTIMONY PENTACHLORIDE, LIQUID

## Section 15 - REGULATORY INFORMATION



### REGULATIONS

#### ND

Ingredient CAS % de minimus concentration  
hydrogen chloride 7647-01-0 1.0  
antimony pentoxide 1314-60-9 (1.0)

#### ND

Ingredient CAS RQ  
hydrogen chloride 7647-01-0 5000 lb (2270 kg)  
antimony pentoxide 1314-60-9 \*\*

#### **antimony pentachloride (CAS: 7647-18-9) is found on the following regulatory lists;**

"Canada - Saskatchewan Industrial Hazardous Substances", "Canada Domestic Substances List (DSL)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - Massachusetts Oil & Hazardous Material List", "US - New Jersey Right to Know Hazardous Substances", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US CWA (Clean Water Act) - List of Hazardous Substances", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "US Toxic Substances Control Act (TSCA) - Inventory"  
Regulations for ingredients

#### **hydrogen chloride (CAS: 7647-01-0) is found on the following regulatory lists;**

"Canada - Alberta Ambient Air Quality Objectives", "Canada - Alberta Occupational Exposure Limits", "Canada - British Columbia Occupational Exposure Limits", "Canada - Northwest Territories Occupational Exposure Limits (English)", "Canada - Nova Scotia Occupational Exposure Limits", "Canada - Ontario Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens", "Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)", "Canada - Saskatchewan Industrial Hazardous Substances", "Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits", "Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances", "Canada Controlled Drugs and Substances Act Schedule VI", "Canada Domestic Substances List (DSL)", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada National Pollutant Release Inventory (NPRI)", "Canada Prohibited Toxic Substances, Schedule 2, Concentration Limits (English)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Maritime Dangerous Goods Requirements (IMDG Code) - Goods Forbidden for Transport", "OECD Representative List of High Production Volume (HPV) Chemicals", "United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II", "United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control - Table II", "US - Alaska Limits for Air Contaminants", "US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)", "US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)", "US - California Permissible Exposure Limits for Chemical Contaminants", "US - California Toxic Air Contaminant List Category II", "US - Connecticut Hazardous Air Pollutants", "US - Hawaii Air Contaminant Limits", "US - Idaho - Limits for Air Contaminants", "US - Massachusetts Oil & Hazardous Material List", "US - Michigan Exposure Limits for Air Contaminants", "US - Minnesota Hazardous Substance List", "US - Minnesota Permissible Exposure Limits (PELs)", "US - New Jersey Right to Know Hazardous Substances", "US - Oregon Hazardous Materials", "US - Oregon Permissible Exposure Limits (Z-1)", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US - Washington Permissible exposure limits of air contaminants", "US - Wyoming List of Highly Hazardous Chemicals, Toxics and Reactives", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US ACGIH Threshold Limit Values (TLV)", "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "US Clean Air Act - Hazardous Air Pollutants", "US CWA (Clean Water Act) - List of Hazardous Substances", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US Department of Homeland Security Chemical Facility Anti-Terrorism Standards - Chemicals of Interest", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals", "US EPA Acute Exposure Guideline Levels (AEGs) - Final", "US EPA High Production Volume Chemicals Additional List", "US EPA Master Testing List - Index I Chemicals Listed", "US EPCRA Section 313 Chemical List", "US Food Additive Database", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "US NFPA 45 Fire Protection for Laboratories Using Chemicals -

Flammability Characteristics of Common Compressed and Liquefied Gases", "US NIOSH Recommended Exposure Limits (RELs)", "US OSHA List of Highly Hazardous Chemicals, Toxics and Reactives", "US OSHA Permissible Exposure Levels (PELs) - Table Z1", "US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide", "US SARA Section 302 Extremely Hazardous Substances", "US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants", "US Toxic Substances Control Act (TSCA) - Inventory" **antimony pentoxide (CAS: 1314-60-9) is found on the following regulatory lists;** "Canada Domestic Substances List (DSL)", "US Toxic Substances Control Act (TSCA) - Inventory"

## Section 16 - OTHER INFORMATION

### LIMITED EVIDENCE

- Cumulative effects may result following exposure\*.
- Limited evidence of a carcinogenic effect\*.

\* (limited evidence).

*Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.*

- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:  
[www.chemwatch.net/references](http://www.chemwatch.net/references).

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

*This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.*

Issue Date: Apr-26-2009

Print Date: Oct-13-2010