ANTIMONY TRICHLORIDE

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
ANTIMONY TRICHLORIDE

OTHER NAMES

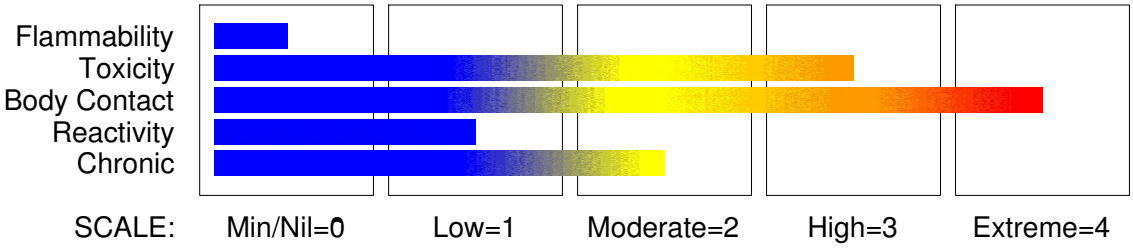
Sb-Cl3, "antimony trichloride, solid", "antimony trichloride solid", "antimony chloride" , "antimonous chloride", "antimony butter", "butter of antimony", "stibine, trichloro-", trichlorostibine, "C.I. 77056", "caustic antimony"

PROPER SHIPPING NAME
ANTIMONY TRICHLORIDE

PRODUCT USE
Bronzing iron, especially gun barrels; mordant for patent leather and in dyeing; colouring zinc black; manufacture of lakes, particularly from wood dyes; furniture polishes; fireproofing textiles; analytical reagent. Also used as chlorinating agent in organic synthesis; manufacture of antimony salts; in pharmaceuticals.

SUPPLIER
Company: S D FINE- CHEM LIMITED
Address:
315- 317, T.V. INDUSTRIAL ESTATE,
248, WORLI,
MUMBAI- 400030.INDIA.
technical@sdfine.com
Telephone: 91- 22- 24959898
Telephone: 91- 22- 24959899
Fax: 91- 22- 24937232

HAZARD RATINGS



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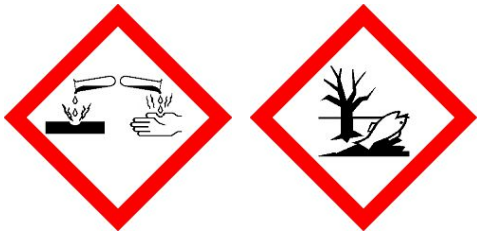
Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Inhalation) Category 4
Acute Toxicity (Oral) Category 4
Chronic Aquatic Hazard Category 2
Metal Corrosion Category 1
Skin Corrosion/Irritation Category 1B



EMERGENCY OVERVIEW

HAZARD

DANGER
Determined by using GHS criteria:
H332 H302 H290 H314 H411
Harmful if inhaled
Harmful if swallowed
May be corrosive to metals
Causes severe skin burns and eye damage
Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS

Prevention

Do not eat, drink or smoke when using this product.
Do not breathe dust or mist.
Wash hands thoroughly after handling.
Wash thoroughly after handling.
Wear protective gloves/clothing and eye/face protection.
Use only outdoors or in a well ventilated area.
Avoid breathing dust/fume/gas/mist/vapours/spray.

Response

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
Immediately call a POISON CENTER or doctor/physician.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.
Specific treatment: refer to Label or MSDS.
Absorb spillage to prevent material damage.

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Storage

Store in a corrosive resistant container with a resistant inliner.
Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
antimony trichloride	10025-91-9	> 99
hydrolyses in water to produce hydrochloric acid	7647-01-0	

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.
· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
· For advice, contact a Poisons Information Centre or a doctor.
Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
· Induce vomiting with fingers down the back of the of the throat, ONLY IF CONSCIOUS.
· Lean patient forward or place on left side (head-down position if possible) to maintain open airway and prevent aspiration.
NOTE: Wear a protective glove when inducing vomiting by mechanical means.
· In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
· If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
· If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

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.
· Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
· Transport to hospital or doctor without delay.
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

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.
· Wash skin and hair with running water. Continue flushing with water until advised to

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stop by the Poisons Information Centre.
· Transport to hospital, or doctor.

INHALED

· If fumes or combustion products are inhaled remove from contaminated area.
· Lay patient down. Keep warm and rested.
· Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
· Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
· Transport to hospital, or doctor.

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
· Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
· Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues.

INGESTION:
· Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
· DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
· Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
· Charcoal has no place in acid management.
· Some authors suggest the use of lavage within 1 hour of ingestion.
SKIN:
· Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
· Deep second-degree burns may benefit from topical silver sulfadiazine.
EYE:
· Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjuctival cul-de-sacs. Irrigation should last at least 20-30 minutes. DO NOT use neutralising agents or any other additives. Several litres of saline are required.
· Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
· Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).
[Ellenhorn and Barceloux: Medical Toxicology].
· Chelation with British Anti-Lewisite (BAL) for serious antimony exposures should be employed.
· Dialyse as needed. The role of exchange diffusion is not clear.
· Be sure to monitor for dysrhythmias.
[Ellenhorn and Barceloux: Medical Toxicology].

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Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
· Dry chemical powder.
· BCF (where regulations permit).
· Carbon dioxide.

FIRE FIGHTING
· Alert Fire Brigade and tell them location and nature of hazard.
· May be violently or explosively reactive.
· Wear full body protective clothing with breathing apparatus.
· Prevent, by any means available, spillage from entering drains or water course.
· Consider evacuation (or protect in place).
· DO NOT use water on fires.
· Avoid spraying water onto liquid pools.
· Do not approach containers suspected to be hot.
· If safe to do so, remove containers from path of fire.
· Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD
Pollutant.
Non combustible.
May emit corrosive fumes.
Decomposes on heating and produces toxic fumes of: hydrogen chloride, metal oxides and chlorine.
In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas.
Reacts with water or steam to produce toxic and corrosive fumes.

FIRE INCOMPATIBILITY
Avoid contact with aluminium, alkali metals e.g. sodium, potassium, lithium and water.

Personal Protective Equipment
Breathing apparatus.
Gas tight chemical resistant suit.
Limit exposure duration to 1 BA set 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS
· Clean up all spills immediately.
· Avoid breathing vapours and contact with skin and eyes.
· Control personal contact by using protective equipment.
· Contain and absorb spill with sand, earth, inert material or vermiculite.
· Wipe up.
· Place in a suitable labelled container for waste disposal.

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MAJOR SPILLS
Environmental hazard - contain spillage.
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)
The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:
antimony trichloride 75 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:
antimony trichloride 0.75 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:
antimony trichloride 0.75 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:
antimony trichloride 0.75 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

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SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

X	X	+	X	X	+

+: May be stored together
O: May be stored together with specific preventions
X: Must not be stored together

continued...

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with moisture.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re -use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Segregate from alkali metals e.g. sodium, potassium, lithium, aluminium and water.

STORAGE REQUIREMENTS

Keep dry.

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

DO NOT use aluminium or galvanised containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- antimony trichloride: CAS:10025- 91- 9 CAS:8007- 28- 1 CAS:39357- 85- 2 CAS:59922- 49- 5 CAS:12515- 76- 3
- hydrochloric acid: CAS:7647- 01- 0 CAS:7698- 05- 7

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
antimony trichloride	50	

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hydrochloric acid	50

ODOUR SAFETY FACTOR (OSF)

OSF=1.3 (hydrochloric acid)
Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.
Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.
The Odour Safety Factor (OSF) is defined as:
OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm
Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted
C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

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MATERIAL DATA

The wide-ranging effects of antimony compounds have made it difficult to recommend an exposure standard which characterises the toxicology of these substances. One criteria, reflecting the irritant properties of antimony pentachloride, produced a calculated value of 5.0 mg/m3 (as antimony), which on the basis of experience was felt to be too high but did act as an "out-rider". The present value reflects this thinking.

INGREDIENT DATA

HYDROCHLORIC ACID:
Odour Threshold Value: 0.262 ppm (detection), 10.06 ppm (recognition)
NOTE: Detector tubes for hydrochloric acid, measuring in excess of 1 ppm, are available commercially.
Hydrogen chloride is a strong irritant to the eyes, mucous membranes and skin. Chronic exposure produces a corrosive action on the teeth. Reports of respiratory irritation following short-term exposure at 5 ppm have lead to the recommended TLV-C. There is no indication that skin contact with hydrogen chloride elicits systemic poisoning and a skin designation has not been applied.
Exposure of humans to hydrogen chloride at 50 to 100 ppm for 1 hour is reported to be barely tolerable; 35 ppm caused irritation of the throat on short exposure and 10 ppm was the maximal concentration for prolonged exposure. It has been stated that hydrogen chloride at concentrations of 5 ppm is immediately irritating.

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Toxic effects of hydrochloric acid

Concentration	Clinical effects
0.067 - 0.267 ppm	Reported range of odour thresholds and changes in respiratory pattern
5 ppm	No organic damage
10 ppm	Irritation; work undisturbed
10-50 ppm	Work difficult but possible
35 ppm	Short exposure irritation of the throat
50-100 ppm	Exposure for 1 h barely tolerable
1000-2000 ppm	Brief exposure dangerous; laryngospasm
1300-2000 ppm	Lethal after a few minutes

PERSONAL PROTECTION

EYE
· Safety glasses with side shields.
· Chemical goggles.
· Full face shield may be required for supplementary but never for primary protection of eyes
· Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET
Wear chemical protective gloves, i.e. PVC gloves with polyethylene liner.

OTHER
· Overalls.
· PVC Apron.
· PVC protective suit may be required if exposure severe.
· Eyewash unit.
· Ensure there is ready access to a safety shower.

RESPIRATOR
Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined

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as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	B- AUS P	-
1000	50	-	B- AUS P
5000	50	Airline *	-
5000	100	-	B- 2 P
10000	100	-	B- 3 P
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult
your
Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
An approved self contained breathing apparatus (SCBA) may be required in some situations.
Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25- 0.5 m/s (50- 100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use

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4: Large hood or large air mass in motion

4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Colourless, transparent, very hygroscopic crystals with an acetic acid odour. Fumes slightly in air. Soluble in alcohol, acetone, acids.
Insoluble in pyridine, quinoline and other organic bases.
Hydrolyses with water forming antimony oxychloride and evolves irritating and corrosive hydrogen chloride gas.

PHYSICAL PROPERTIES

Solid.
Corrosive.
Acid.
Contact with water liberates toxic gas.

Molecular Weight: 228.10
Melting Range (°C): 73.2
Solubility in water (g/L): Decomposes
pH (1% solution): Not available.
Volatile Component (%vol): Not available.
Relative Vapour Density (air=1): Not available.
Lower Explosive Limit (%): Not applicable
Autoignition Temp (°C): Not applicable
State: Divided solid

Boiling Range (°C): 223.6
Specific Gravity (water=1): 3.14
pH (as supplied): Not applicable
Vapour Pressure (kPa): Not available.
Evaporation Rate: Not available
Flash Point (°C): Not applicable
Upper Explosive Limit (%): Not applicable
Decomposition Temp (°C): Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Contact with water liberates toxic gases.
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
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.
The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.
Considered an unlikely route of entry in commercial/industrial environments.
Antimony poisoning closely parallels arsenic poisoning although vomiting is probably more prominent as absorption from the gastrointestinal tract is generally lower. Temporary changes in heart rhythm occurs amongst humans while poisoned animals exhibit severe heart damage. Trivalent compounds are generally more lethal than pentavalent derivatives. The insoluble salts however are less likely to produce significant toxic effects.
Antimony salts are poorly absorbed from the gastrointestinal tract. Most trivalent compounds of antimony are slowly excreted in the urine and bile. Antimony compounds are used medicinally, but therapeutic dose is close to the toxic dose. Periodic medical examinations covering lungs, skin, nervous system, heart and gastro-intestinal tract are recommended for occupationally exposed workers. [ILO Encyclopedia]
The minimum lethal dose in man, of antimony, is 130 mg (although 15000 mg has been survived). A strong irritant and emetic but the emetic dose (30 mg by mouth) is dangerously high if vomiting fails to occur. Antimony poisoning closely parallels arsenic poisoning, except that vomiting from antimony may be less prominent, because its compounds are
less readily absorbed than arsenicals. Temporary ECG changes have been reported in humans and severe cardiac damage has been observed in animals.Trivalent antimony compound are many times more lethal than their pentavalent equivalent. The trivalent antimony compounds are cardiotoxic. Collapse and sudden death due to anaphylactic-type reactions have occurred. Therapeutic doses given intravenously cause nausea, vomiting, cough and abdominal pain and diarrhoea. Other side-effects include anorexia, chest, muscle and joint pains, pruritus, skin rashes, dizziness and oedema.
The substance may cause cough, salivation, nausea and diarrhoea and may leave a metallic taste. May also cause dizziness, laryngitis, anaemia, muscular and neuralgic pains.
Renal and hepatic damage occur rarelyafter exposure to antimony and its compounds - haemolytic anaemia has been reported. Continuous treatment with small doses of antimony may give rise to subacute poisoning similar to chronic arsenic poisoning.

EYE
The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.
When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

SKIN
The material can produce chemical burns following direct contact with the skin.
Open cuts, abraded or irritated skin should not be exposed to this material.

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The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

INHALED
Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation.
The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.
Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).
The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange, the primary function of the lungs. Therefore prolonged exposure to respiratory irritants may cause sustained breathing difficulties.

CHRONIC HEALTH EFFECTS
On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.
Principal routes of exposure are usually by skin contact / eye contact and inhalation of generated dust.
The trivalent antimony compounds are cardiotoxic. Collapse and sudden death due to anaphylactic-type reactions have occurred. Therapeutic doses given intravenously cause nausea, vomiting, cough and abdominal pain and diarrhoea. Other side-effects include anorexia, chest, muscle and joint pains, pruritus, skin rashes, dizziness and oedema.
The material may accumulate in the human body and progressively cause tissue damage.
Renal and hepatic damage occur rarely and haemolytic anaemia has been reported. Continuous treatment with small doses of antimony may give rise to subacute poisoning similar to chronic arsenic poisoning.
Repeated or prolonged exposure to antimony and its compounds may produce stomatitis, dry throat, metallic taste, gingivitis, septal and laryngeal perforation, laryngitis, headache, dyspnea, indigestion, nausea, vomiting, diarrhoea, anorexia, anaemia, weight loss, pain and chest tightness, sleeplessness, muscular pain and weakness, dizziness, pharyngitis, bronchitis and pneumonitis. Degenerative changes of the liver and kidney may occur. Chronic exposure to antimony compounds may result in itchiness, papules and pustules around sweat and sebaceous glands, but rarely around the face, and dermatitis. Smelter workers often show skin rashes on the forearms and thighs resembling chicken pox pustules. Workers exposed to inorganic antimony compounds show a benign pneumoconiosis and obstructive lung disease - these are probably non-specific. Woman appear to more susceptible to systemic effects following exposure. Antimony crosses the placenta, is present in amniotic fluids, and is excreted in breast milk. There are suggestions that exposure may produce an increased incidence of spontaneous late abortions, premature births, and gynecological problems among female antimony smelter workers. An excess of deaths from lung cancer has been reported in smelter workers with more than 7 years exposure to relatively high levels of dust and fume. Animal studies demonstrate that the dust may produce pathological changes in cardiac muscle and may produce an interstitial pneumonitis and endogenous pneumonia. One animal study has also suggested that inhalation

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of the dust by rats induced a significantly increased incidence of carcinogenic tumours of the lungs and thorax.

TOXICITY AND IRRITATION

TOXICITY	IRRITATION
Oral (rat) LD50: 525 mg/kg	Nil Reported
Inhalation (human) TCLo: 73 mg/m³	

HYDROCHLORIC ACID:

TOXICITY	IRRITATION
Unreported (man) LDLo: 81 mg/kg	Eye (rabbit): 5mg/30s - Mild
Inhalation (human) LCLo: 1300 ppm/30 min	
Inhalation (human) LCLo: 3000 ppm/5 min	
Inhalation (rat) LC50: 3124 ppm/1h	
Oral (rat) LD50: 900 mg/kg	

The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

Section 12 - ECOLOGICAL INFORMATION

No data for antimony trichloride.
Refer to data for ingredients, which follows:

HYDROCHLORIC ACID:

Hazardous Air Pollutant:	Yes
Fish LC50 (96hr.) (mg/l):	0.282

Prevent, by any means available, spillage from entering drains or water courses.
DO NOT discharge into sewer or waterways.
Ecotoxicity
Fish LC100 (24 h): trout 10 mg/l
TLm (96 h): mosquito fish 282 ppm (fresh water)
LC50: goldfish 178 mg/l
Shrimp LC50 (48 h): 100 - 330 ppm (salt water)
Starfish LC50 (48 h): 100 - 330 mg/l
Cockle LC50 (48 h): 330 - 1000 mg/l
[Hach]
Hydrogen chloride in water dissociates almost completely, releasing hydrogen and chloride ions; the hydrogen ions are captured by water to produce hydronium ions.
Hydrochloric acid infiltrates soil, the rate dependent on moisture content. During soil transport, hydrochloric acid dissolves soil components.
Drinking water standard:
chloride: 400 mg/l (UK max.)
250 mg/l (WHO guideline)

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Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Treat and neutralise at an effluent treatment plant.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

Labels Required: CORROSIVE,TOXIC
HAZCHEM: 4W

UNDG:

Dangerous Goods Class:	8	Subrisk:	6.1
UN Number:	1733	Packing Group:	II

Shipping Name:ANTIMONY TRICHLORIDE

Air Transport IATA:

ICAO/IATA Class:	8	ICAO/IATA Subrisk:	None
UN/ID Number:	1733	Packing Group:	II
ERG Code:	8L		

Shipping name:ANTIMONY TRICHLORIDE

Maritime Transport IMDG:

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	1733	Packing Group:	II
EMS Number:	F- A, S- B		

Shipping name:ANTIMONY TRICHLORIDE

Section 15 - REGULATORY INFORMATION

REGULATIONS

antimony trichloride (CAS: 10025-91-9) is found on the following regulatory lists;
WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established

No data available for antimony trichloride as CAS: 8007-28-1, CAS: 39357-85-2, CAS: 59922 -49-5, CAS: 12515-76-3.

continued...

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
antimony trichloride	10025- 91- 9, 8007- 28- 1, 39357- 85- 2, 59922- 49- 5, 12515- 76- 3

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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