



SZABO SCANDIC

Part of Europa Biosite

Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!



Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Indium(III) chloride

sc-250153



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

Indium(III) 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

Cl₃-In, InCl₃, "indium trichloride"

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

Harmful if swallowed.
Contact with water liberates toxic gas.
Contact with acids liberates toxic gas.
Causes burns.
Risk of serious damage to eyes.

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.
- Ingestion of acidic corrosives may produce burns around and in the mouth.
the throat and esophagus.
- Indium is poorly absorbed from the gut, but accumulation in the liver occurs when indium compounds are injected.
Symptoms of indium poisoning include loss of appetite, nose-bleed, paralysis of limbs, rapid breathing, twitching, convulsions and tissue death of the liver and kidneys.

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.

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 with the material may damage the health of the individual; systemic effects may result following absorption.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Solution of material in moisture on the skin, or perspiration, may markedly increase skin corrosion and accelerate tissue destruction.
- 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

- 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.
- Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
- 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.
- Exposure to indium compounds leads to tooth decay, joint and bone pain, disorders in the nervous and gastrointestinal systems, heart pains and general debility.
Swelling of the lungs is common although scarring is rarely seen.

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.
Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.
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.
Chronic indium intoxication leads to weight loss, poor growth and extensive necrotic damage to the liver and kidneys.
Indium can impede protein synthesis, thereby affecting numerous essential physiological processes, including detoxification of organic carcinogens. Intravenous indium chloride exposure to mice had a toxic effect on the kidney and resulted in necrosis of the liver.
Damage to the brain, heart, adrenals, spleen and blood may also result from chronic exposures.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
indium(III) chloride	10025-82-8	>98

hydrolyses to

[hydrogen chloride](#)

7647-01-0

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.

NOTES TO PHYSICIAN

■ Treat symptomatically.

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.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG): Not applicable

Upper Explosive Limit (%): Not applicable

Specific Gravity (water=1): 4.0

Lower Explosive Limit (%): Not applicable

EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
 - Wear full body protective clothing with breathing apparatus.
- 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

■ None known.

PERSONAL PROTECTION

Glasses:

Full face- shield.

Gloves:

Respirator:

Type B-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.
- 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.

MAJOR SPILLS

- 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

- 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 ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Canada - Alberta Occupational Exposure Limits	indium(III) chloride (Hydrogen chloride)					2	3		
Canada - British Columbia Occupational Exposure Limits	indium(III) chloride (Hydrogen chloride Revised 2003)					2			
US - Minnesota Permissible Exposure Limits (PELs)	indium(III) chloride (Hydrogen chloride)					5	7		
US ACGIH Threshold Limit Values (TLV)	indium(III) chloride (Hydrogen chloride)					2			TLV Basis: upper respiratory tract irritation
US NIOSH Recommended Exposure Limits (RELs)	indium(III) chloride (Hydrogen chloride)					5	7		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	indium(III) chloride (Hydrogen chloride)					5	7		
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	indium(III) chloride (Hydrogen chloride)	(C)5	(C)7						
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	indium(III) chloride (Hydrogen chloride)					5	7		

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

Exposure Limits	chloride)			tract irritation
Canada - Prince Edward Island Occupational Exposure Limits	indium(III) chloride (Hydrogen chloride)	2		TLV Basis: upper respiratory tract irritation
US OSHA Permissible Exposure Levels (PELs) - Table Z3	indium(III) chloride (Inert or Nuisance Dust: (d) Respirable fraction)	5		
US OSHA Permissible Exposure Levels (PELs) - Table Z3	indium(III) chloride (Inert or Nuisance Dust: (d) Total dust)	15		
US - Oregon Permissible Exposure Limits (Z-3)	indium(III) chloride (Inert or Nuisance Dust:(d) Respirable fraction)	5		Oregon Permissible Exposure Limits (PELs) are different than the federal limits.
US - Oregon Permissible Exposure Limits (Z-3)	indium(III) chloride (Inert or Nuisance Dust: (d) Total dust)	10		Oregon Permissible Exposure Limits (PELs) are different than the federal limits.
Canada - Ontario Occupational Exposure Limits	indium(III) chloride (Specified (PNOS) / Particules (insolubles ou peu solubles) non précisées par ailleurs)	3 (R)		
Canada - Ontario Occupational Exposure Limits	indium(III) chloride (Particles (Insoluble or Poorly Soluble) Not Otherwise)	10 (I)		

ENDOELTABLE

PERSONAL PROTECTION



RESPIRATOR

·Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

- Chemical goggles.
- Full face shield.

HANDS/FEET

- Elbow length PVC gloves.

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, AS/NZS 2161.1 or national equivalent).

- 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, AS/NZS 2161.10.1 or national equivalent) 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, AS/NZS 2161.10.1 or national equivalent) 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.

OTHER

- Overalls.
- PVC Apron.

ENGINEERING CONTROLS

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

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Mixes with water.

Corrosive.

Acid.

Contact with water liberates toxic gas.

Contact with acids liberates toxic gas.

State	DIVIDED SOLID	Molecular Weight	221.17
Melting Range (°F)	1087	Viscosity	Not Applicable
Boiling Range (°F)	1112 Volatilises	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not applicable	pH (1% solution)	Not available.
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not applicable	Vapour Pressure (mmHG)	Not applicable
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	4.0
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	Not applicable
Volatile Component (%vol)	Not applicable	Evaporation Rate	Not applicable

APPEARANCE

White or yellow deliquescent powder. Soluble in water and alcohol. Slightly soluble in ether. Sublimes at 300 C. Derived from direct union of the elements or by action of hydrochloric acid on the metal.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Contact with alkaline material liberates heat.
- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

- Contact with acids produces toxic fumes.
- 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 acetylides, sodium, silicon dioxide, tetraselenium tetranitride, and many organic materials
- is incompatible with alkaline materials, acetic anhydride, acetylides, aliphatic amines, alkanolamines, alkylene oxides, aluminium, aluminium-titanium alloys, aromatic amines, amines, amides, 2-aminoethanol, ammonia, ammonium hydroxide, borides, calcium phosphide, carbides, carbonates, cyanides, chlorosulfonic acid, ethylenediamine, ethyleneimine, epichlorohydrin, formaldehyde, isocyanates, metals, metal oxides, metal hydroxides, metal acetylides, metal carbides, oleum, organic anhydrides, potassium permanganate, perchloric acid, phosphides, 3-propiolactone, silicides, sulfides, sulfites, sulfuric acid, uranium phosphide, vinyl acetate, vinylidene fluoride
- attacks most metals forming flammable hydrogen gas, and some plastics, rubbers and coatings
- reacts with zinc, brass, galvanised iron, aluminium, copper and copper alloys.
- Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
- These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
- The state of subdivision may affect the results.

Contact with acids produces toxic fumes of chlorides.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

indium(III) chloride

TOXICITY AND IRRITATION

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

■ 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.

INDIUM(III) CHLORIDE:

TOXICITY	IRRITATION
Intraperitoneal (rat) LD50: 2.37 mg/kg	Nil Reported
Intravenous (rat) LD50: 4.46 mg/kg	
Intraperitoneal (rat) LD50: 9.5 mg/kg	

Olfaction effects recorded.

TOXICITY	IRRITATION
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HYDROGEN CHLORIDE:

Inhalation (human) LCLo: 1300 ppm/30m	Eye (rabbit): 5 mg/30s - Mild
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Inhalation (human) LCLo: 3000 ppm/5m	
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Inhalation (rat) LC50: 3124 ppm/60m	
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■ The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

4701 ppm/30m	
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CARCINOGEN

indium(III) chloride	US - Rhode Island Hazardous Substance List	IARC	
BROMINE COMPOUNDS (ORGANIC OR INORGANIC)	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65-MC
PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	
Hydrochloric acid	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	3
Acid mists, strong inorganic	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	1
Zinc and Compounds	US EPA Carcinogens Listing	Carcinogenicity	D
Zinc and Compounds	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	D
Hydrogen chloride	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A4
hydrogen chloride	US - Rhode Island Hazardous Substance List	IARC	
ORGANIC BROMINE COMPOUNDS	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65-MC
hydrogen chloride	US - Maine Chemicals of High Concern List	Carcinogen	D
TWAPPM~	US - Maine Chemicals of High Concern List	Carcinogen	A4

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
indium(III) chloride	No Data Available	No Data Available	LOW	
hydrogen chloride	LOW	No Data Available	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 _____
_____ Poly(2+)c 224 574 4 4 NR (4) NI (1) (1) (2) (1) (1) CM S 3 ycllic 6 aromatics / CAS:10025 - 82- 8 /

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=Acute aquatic 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=Lung injury, 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)

Reactivity characteristic: use EPA hazardous waste number D003 (waste code R).

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. 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.

- 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: UN3260 PG: II

Label Codes: 8 Special provisions: IB8, IP2,

IP4, T3,

TP33

Packaging: Exceptions: 154 Packaging: Non- bulk: 212

Packaging: Exceptions: 154 Quantity limitations: 15 kg

Passenger aircraft/rail:

Quantity Limitations: Cargo 50 kg Vessel stowage: Location: B
aircraft only:

Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:

Corrosive solid, acidic, inorganic, n.o.s.

Air Transport IATA:

UN/ID Number: 3260 Packing Group: II

Special provisions: A3

Cargo Only

Packing Instructions: 863 Maximum Qty/Pack: 50 kg

Passenger and Cargo Passenger and Cargo

Packing Instructions: Y844 Maximum Qty/Pack: 15 kg

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: 859 Maximum Qty/Pack: 5 kg

■ Air transport may be forbidden if this material is flammable, corrosive or toxic gases may be released under normal conditions of transport.

Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.

*(CONTAINS INDIUM(III) CHLORIDE)

Maritime Transport IMDG:

IMDG Class: 8 IMDG Subrisk: None

UN Number: 3260 Packing Group: II

EMS Number: F-A,S-B Special provisions: 274

Limited Quantities: 1 kg

Shipping Name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.(contains indium(III) chloride)

Section 15 - REGULATORY INFORMATION

indium(III) chloride (CAS: 10025-82-8,22519-64-8) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","US DOE Temporary Emergency Exposure Limits (TEELs)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US TSCA Section 8 (a) - Preliminary Assessment Information Rules (PAIR) - Reporting List","US TSCA Section 8 (d) - Health and Safety Data Reporting"

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 - 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 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","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 (Red List) - 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 - Florida Essential Chemicals","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) - Chemical Substance Inventory"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Inhalation and/or skin contact may produce health damage*.

■ Cumulative effects may result following exposure*.

* (limited evidence).

Ingredients with multiple CAS Nos

Ingredient Name CAS indium(III) chloride 10025-82-8, 22519-64-8

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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.

■ 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.

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