

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Tin (II) Chloride Dihydrate, Enriched Stannous Chloride Dihydrate
Chemical Formula	SnCl ₂ ·2H ₂ O
Molecular Weight	225.63
CAS No.	10025-69-1
RTECS No.	XP8700000
Synonyms	Tin dichloride, Tin protochloride
Supplier Address*	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac/ +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview:

Danger! Corrosive. Causes eye and skin burns. Causes digestive and respiratory tract burns. Harmful if swallowed. May cause blood abnormalities. May cause liver and kidney damage. Moisture sensitive.

Appearance: Colorless to white solid

Target Organs: Blood, liver, lungs, eyes, skin

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 3 Flammability = 0 Reactivity = 0



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 3 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	3
FLAMMABILITY	0
PHYSICAL HAZARD	0

Potential Health Effects

<i>Eye</i>	Causes eye burns.
<i>Skin</i>	Causes skin burns. Causes redness and pain. May be harmful if absorbed through the skin.
<i>Ingestion</i>	Harmful if swallowed. Causes gastrointestinal tract burns. Exposure may cause anemia and other blood abnormalities. May cause headache, nausea, fatigue, and dizziness. Inorganic tin salts may cause systemic effects on the central nervous system, heart and liver.
<i>Inhalation</i>	Irritation may lead to chemical pneumonitis and pulmonary edema. Causes chemical burns to the respiratory tract. May cause effects similar to those described for ingestion. May be harmful if inhaled.
<i>Chronic</i>	Prolonged or repeated skin contact may cause dermatitis. May cause liver and kidney damage. Adverse reproductive effects have been reported in animals. Chronic exposure may cause effects similar to those of acute exposure.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Stannous Chloride Dihydrate
CAS No.:	10025-69-1
Chemical Formula:	$\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$
Molecular Weight:	225.63

4. FIRST AID MEASURES

<i>Eye Exposure</i>	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. Do NOT allow victim to rub eyes or keep eyes closed.
<i>Dermal Exposure</i>	Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.
<i>Oral Exposure</i>	Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.
<i>Inhalation Exposure</i>	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
<i>Notes to Physician</i>	Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

General Information

As in any fire, wear a self-contained pressure-demand breathing apparatus (MSHA/NIOSH-approved or equivalent) and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Suitable Extinguishing Media

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature

N/A

Explosion Limits

Lower

Not available

Upper

Not available

Special Remarks on Fire Hazards

Bromine trifluoride and stannous chloride react with flame. A mixture of stannous chloride and calcium carbide can be ignited with a match, and the reaction proceeds with incandescence. When heated to decomposition, it emits toxic fumes of hydrogen chloride.

Special Remarks on Explosion Hazards

A mixture of stannous chloride and nitrates may cause explosion. A mixture of sodium and stannous chloride produces a strong explosion on impact.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Use proper personal protective equipment as indicated in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental Precautions

Do not let product enter drains.

Methods for Cleaning Up

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

7. HANDLING AND STORAGE

Handling

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Use with adequate ventilation. Discard contaminated shoes.

Storage

Keep container closed when not in use. Store in a cool, dry, well-ventilated "corrosives area" away from incompatible substances. Store protected from moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name:

Tin (II) Chloride Dihydrate

ACGIH

2 mg/m³ TWA (except tin hydride, as Sn) (listed under Tin inorganic compounds)

NIOSH	2 mg/m ³ TWA (as Sn, except Tin oxide) (listed under Tin inorganic compounds)
OSHA - Final PELs	2 mg/m ³ TWA (as Sn) (listed under Tin inorganic compounds)
OSHA Vacated PELs	No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eye	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Hand	Wear appropriate protective gloves to prevent skin exposure.
Body	Wear appropriate protective clothing to minimize contact with skin.
Respirators	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Solid
Form	Crystalline powder
Color	Colorless to white
Odor	Odorless

Safety Data

pH:	Not available
Vapor Pressure:	Negligible
Vapor Density:	Not applicable
Evaporation Rate:	Negligible
Viscosity:	Not applicable
Boiling Point:	Decomposes
Freezing/Melting Point:	100 °F
Explosion Lower/Upper:	Not applicable
Decomposition Temperature:	Not available
Specific Gravity/Density:	2.71
Chemical Formula:	SnCl ₂ ·2H ₂ O
Molecular Weight:	225.63
Solubility:	Soluble in methanol. Soluble in less than its own weight of water. In dilute aqueous solutions it will form insoluble oxychloride. Very soluble in dilute or concentrated hydrochloric acid, alcohol, ethyl acetate, glacial acetic acid, sodium hydroxide solution. Decomposed by hot water.

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Stable under normal temperatures and pressures. May decompose on exposure to moist air or water. Moisture-sensitive.
<i>Conditions to Avoid</i>	Moisture, heating to decomposition
<i>Incompatible Materials</i>	Metals, strong oxidizing agents, strong reducing agents, strong acids, strong bases, bromine trifluoride, ethylene oxide, potassium, hydrogen peroxide, sodium, moisture, calcium carbide, hydrazine hydrate, organic nitrates
<i>Hazardous Decomposition Products</i>	Hydrogen chloride, chlorine, tin/tin oxides
<i>Hazardous Polymerization</i>	Will not occur

11. TOXICOLOGICAL INFORMATION

<i>RTECS No.</i>	XP8850000
<i>CAS No.</i>	10025-69-1
LD50/LC50	<i>Oral LD50 (Rat):</i> 2274.6 mg/kg <i>Oral LD50 (Mouse):</i> 250 mg/kg

Carcinogenicity

Not listed by ACGIH, IARC, NTP, or CA Prop 65.

<i>Epidemiology</i>	No information available
<i>Teratogenicity</i>	Oral - Rat: TDLo = 3 gm/kg (female 7-12 day(s) after conception) Effects on Embryo or Fetus - fetal death Oral - Rat: TDLo = 3 gm/kg (female 7-12 day(s) after conception) Specific Developmental Abnormalities - craniofacial (including nose and tongue)
<i>Reproductive Effects</i>	Oral - Rat: TDLo = 3 gm/kg (female 7-12 day(s) after conception) Maternal Effects - other effects and Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Reproductive - Effects on Embryo or Fetus - fetal death
<i>Neurotoxicity</i>	No information available
<i>Mutagenicity</i>	DNA Damage: Human, Leukocyte = 10 µmol/L DNA Damage: Hamster, Ovary = 50 µmol/L

Special Remarks on Other Toxic Effects on Humans

<i>Acute Potential Health Effects</i>	Stannous chloride forms dilute HCl on contact with moisture or moist membranes (skin, eyes, nose, mouth, etc.)
<i>Skin</i>	Causes severe skin irritation or skin burns particularly on contact with moist or wet skin. The risk of absorption is slight.
<i>Eyes</i>	Causes severe eye irritation or eye burns.
<i>Inhalation</i>	Causes chemical burns or burning irritation to the upper respiratory tract, coughing, wheezing. Irritation may lead to chemical pneumonitis and pulmonary edema.
<i>Ingestion</i>	Harmful if swallowed. Causes nausea, abdominal pain (cramping), vomiting, and diarrhea. Can cause burning of the lips; mouth, tongue, throat, and stomach bleeding; reduced blood pressure; collapse. May affect the liver and kidneys, behavior/central nervous system (headache, fatigue, somnolence, convulsions).

Chronic Potential Health Effects

<i>Skin</i>	Repeated or prolonged contact causes skin irritation and dermatitis.
<i>Ingestion</i>	Prolonged or repeated ingestion may cause decreased bone formation. It may also affect the blood, liver, kidneys, metabolism (weight loss).
<i>Inhalation</i>	Repeated or prolonged inhalation may affect the brain, blood (changes in blood serum composition, pigmented or nucleated red blood cells, anemia), Repeated or prolonged inhalation of inorganic tin compounds may also result in Stannosis, a benign pneumoconiosis ("dusty lung") producing distinctive changes in the lungs.

12. ECOLOGICAL INFORMATION

Toxicity	No data available
Persistence and Degradability	No data available
Bioaccumulative Potential	No data available
Mobility in Soil	No data available
PBT and vPvB Assessment	No data available
Other Adverse Effects	No data available

13. DISPOSAL CONSIDERATIONS

Product	Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series:	None listed
RCRA U-Series:	None listed
Contaminated Packaging	Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

<i>Proper Shipping Name</i>	Corrosive solid, acidic, inorganic, n.o.s. (Stannous chloride dihydrate)
<i>Class</i>	8, Corrosive material
<i>UN No.</i>	3260
<i>Packing Group</i>	III
<i>Marine Pollutant</i>	No
<i>Poison Inhalation Hazard</i>	No
<i>Special Provisions for Transport</i>	Not available

IMDG

<i>Proper Shipping Name</i>	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Stannous chloride dihydrate)
<i>Class</i>	8, Corrosive material
<i>UN No.</i>	3260
<i>Packing Group</i>	III
<i>Marine Pollutant</i>	No
<i>Special Provisions for Transport</i>	Not available

IATA

<i>Proper Shipping Name</i>	Corrosive solid, acidic, inorganic, n.o.s. (Stannous chloride dihydrate)
<i>Class</i>	8, Corrosive material
<i>UN No.</i>	3260
<i>Packing Group</i>	III

15. REGULATORY INFORMATION

OSHA Hazards	Harmful by ingestion, skin sensitizer, corrosive
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards	Acute Health Hazard
Massachusetts Right to Know Components	Stannous chloride dihydrate / CAS No. 10025-69-1 / Revision Date 1993-04-24
Pennsylvania Right to Know Components	Stannous chloride dihydrate / CAS No. 10025-69-1 / Revision Date 1993-04-24
New Jersey Right to Know Components	Stannous chloride dihydrate / CAS No. 10025-69-1 / Revision Date 1993-04-24
California Prop. 65 Components	This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

<i>Prepared By</i>	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
<i>Issuing Date</i>	January 12, 2014
<i>Revision Date</i>	July 29, 2021
<i>Revision Number</i>	2
<i>Revision Note</i>	Required review and update

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
BOD5	Biochemical Oxygen Demand
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
COD	Chemical Oxygen Demand
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)

EC50	Half Maximal Effective Concentration
ECL	Korean Existing Chemicals List
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RQ	Reportable Quantity
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
SNUR	Significant New Use Rule (TSCA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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