spectrum
chemicals & laboratory products

A Division of Spectrum Chemical Mfg. Corp.

Dear Customer,

This File Contains Both The ANSI Material Safety Data Sheet and The GHS Safety Data Sheet For The Same Product

Spectrum is currently transitioning all chemical product labeling from the ANSI[1] format to the GHS[2] format (see note below). In order to ensure that you receive complete labeling during the transition, we have included both the ANSI MSDS and the GHS SDS in a single file. The ANSI MSDS is given first, followed by the GHS SDS. Please use whichever matches the container label.

Why It Matters:

The complete precautionary labeling for this chemical consists of BOTH the label on the container AND the matching Material Safety Data Sheet (for ANSI labels) or Safety Data Sheet (for GHS labels). Both elements of the labeling [Label + (M)SDS] are written to be read and understood together, so as to provide complete precautionary information. It is intended for you to read and understood BOTH before handling or using the chemical.

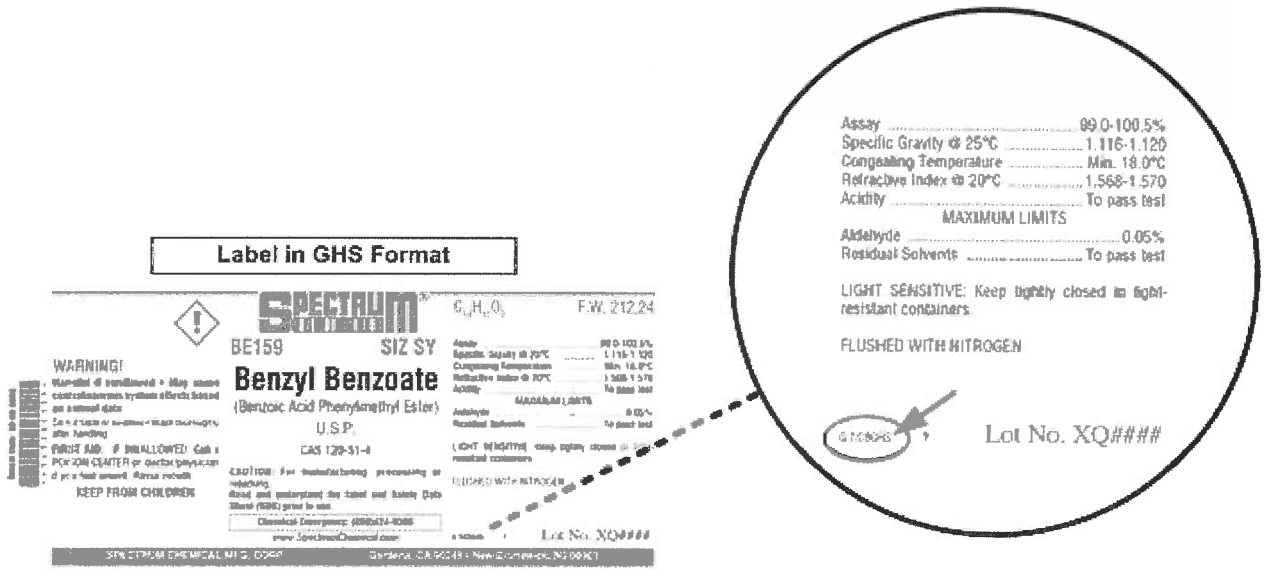
Picking the Right One: 2 Easy Ways To Tell Whether Your Container Has an ANSI Label or a GHS Label

1) GHS labels: any pictogram displayed in the upper left-hand corner will be inside a red diamond.
   ANSI labels: pictograms, if present, will be inside individual black boxes.
2) GHS labels: on the bottom of the right-hand panel of the label, locate the Lot Number.
   Directly to the left will be a string of control characters, followed by a single letter.
   For GHS labels, the string of characters will end in "GHS:"

Label in ANSI Format

CORPORATE OFFICES
14422 South San Pedro Street
Gardena, California 90248
PHONE 310.516.8000
FAX 310.516.9843

Label in GHS Format



[1] American National Standards Institute
[2] Globally Harmonized System for Hazard Communication

Sincerely,

Regulatory Affairs

SAFETY DATA SHEET

Preparation Date: 2/10/2015 **Revision Date:** 02/10/2015 **Revision Number:** G1

Product identifier

Product code: S1536
Product Name: STANNOUS CHLORIDE, DIHYDRATE, TECHNICAL

Other means of identification

Synonyms: Tin (II) Chlordie Dihydrate; Stannous dichloride dihydrate
CAS #: 10025-69-1
RTECS # XP8850000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000
Order Online At: https://www.spectrumchemical.com

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Label elements

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see .? on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Stannous Chloride, Dihydrate 10025-69-1	10025-69-1	100	*

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Causes skin and eye burns. Causes digestive (gastrointestinal) tract irritation. May cause gastrointestinal (digestive) tract burns. Abdominal discomfort, nausea, vomiting, cramping. May cause diarrhea. May affect the liver. It may affect the kidneys. Central nervous system effects.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Hydrogen Chloride gas; Tin/Tin oxides

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

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials. Moisture sensitive.

Incompatible Materials:
Acids. Alkalis. Bromine trifluoride. Ethylene oxide. Hydrazine. Hydrogen peroxide. Metals. Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Stannous Chloride, Dihydrate 10025-69-1	2 mg/m^3 TWA (except oxides, as Sn)	2 mg/m^3 TWA (except Tin oxides, as Sn)	2 mg/m^3 TWA (except Tin hydride, as Sn)	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Stannous Chloride, Dihydrate 10025-69-1	2 mg/m^3 TWA (except Tin hydride, as Sn)	2 mg/m^3 TWA (except Tin hydride, as Sn)	2 mg/m^3 TWA (except Tin hydride, as Sn)	2 mg/m^3 TWAEV (except SnH4, as Sn)

Australia and Mexico

Components	Australia	Mexico
Stannous Chloride, Dihydrate 10025-69-1	2 mg/m^3 TWA (except tin hydride, as Sn)	4 mg/m^3 STEL 2 mg/m^3 TWA (except SnH4, as Sn)

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles or Safety glasses with side-shields

Skin and body protection: Long sleeved clothing. Chemical resistant apron. Gloves.

Respiratory protection: Effective dust mask. or. Wear respirator with dust filter..

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid.

Appearance:
Crystals. Crystalline.

Color:
White.

Odor:
Odorless.

Taste
No information available

Molecular/Formula weight:
225.65

Formula:
$SnCl_2 \cdot 2H_2O$

Flammability:
No information available

Flash point (°C):
No data available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Autoignition Temperature (°C/°F):
No information available

pH:
No information available

Melting point/range(°C/°F):
38°C/100.4°F

Boiling point/range(°C/°F):
652°C/1205.6°F

Decomposition temperature(°C/°F):
No information available

Bulk density:
No information available

Specific gravity:
2.71

Vapor pressure @ 20°C (kPa):
No information available

Density (g/cm3):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

Miscibility:
No information available

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
Decomposes in water

10. STABILITY AND REACTIVITY

Reactivity
Reactive with alkalis
Reactive with acids
Reactive with metals
Reactive with oxidizing agents
Stannous Chloride dihydrate is a strong reducing agent and will absorb oxygen from the air and forms insoluble oxychloride
Incompatible with sodium, potassium, bromine trifluoride, calcium carbide, calcium acetylide, ethylene oxide, chlorine, turpentine, nitrates
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.
A mixture of stannous chloride and nitrates may cause explosion.
A mixture of sodium and stannous chloride produces strong explosion on impact

Chemical stability
Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Incompatible materials. Moisture sensitive. Exposure to moisture. Exposure to moist air.

Incompatible Materials: Acids. Alkalis. Bromine trifluoride. Ethylene oxide. Hydrazine. Hydrogen peroxide. Metals. Oxidizing agents.

Hazardous decomposition products: Hydrogen chloride gas. Tin oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Eyes. Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

Stannous Chloride, Dihydrate - 10025-69-1

LD50/oral/rat = 2274.6 mg/kg
LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = 258.4 mg/kg, intraperitoneal, rat; 7830 µg/kg, intravenous, rat

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 2274.6mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available

VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Stannous chloride forms dilute HCl on contact with moisture or moist membranes (skin, eyes, nose, mouth, etc.). Causes severe skin irritation or skin burns particularly on contact with moist or wet skin. The risk of absorption is slight.

Eye Contact: Causes serious eye irritation. Causes eye burns.

Inhalation Causes chemical burns or burning irritation to the upper respiratory tract, coughing, wheezing. May lead to chemical pneumonitits and pulmonary edema.

Ingestion Harmful if swallowed. Causes nausea, abdominal pain(cramping), vomiting, and diarrhea. Can cause burning of the lips, mouth tongue, throat, and stomach, stomach bleeding, reduced blood pressure, collapse. May affect the liver and kidneys, behavior/central nervous system (headache, fatigue, somnolence, convulsions)..

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Skin: Repeated or prolonged contact causes skin irritation and dermatitis.
Ingestion: Prolonged or repeated ingestion may cause decreased bone formation. It may also affect the blood, liver, kidneys, metabolism (weight loss).
Inhalation: 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 pneumonconiosis (dusty lung) producing distinctive changes in the lungs with no apparent disability or complications. Stannosis has not been associated with illness or decreased life expectancy.

Sensitization: No information available

Mutagenic Effects: May affect genetic material
Experiments with bacteria have shown mutagenic effects
DNA damage - hamster ovary
DNA damage - human leukocyte

Carcinogenic effects: Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Stannous Chloride, Dihydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available

STOT - repeated exposure No information available
Target Organs: No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Stannous Chloride, Dihydrate - 10025-69-1
Freshwater Fish Species Data: 282 mg/L LC50 Gambusia affinis 96 h
50.1 mg/L EC50 Crangon sp. 96hr
71.8 mg/L EC50 Crangon sp. 48hr
Water Flea Data: 37 mg/L LC50 Daphnia magna 24h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Stannous Chloride, Dihydrate	None	None	None	None

14. TRANSPORT INFORMATION

DOT
UN-No: UN1759
Proper Shipping Name: Corrosive solids, n.o.s. (Stannous Chloride)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
ERG No: 154
Marine Pollutant No data available
DOT RQ (lbs): No information available
Symbol(s): G

TDG (Canada)
UN-No: UN1759
Proper Shipping Name: Corrosive solid, n.o.s.
Hazard Class: 8

14. TRANSPORT INFORMATION

Subsidiary Risk: No information available
Packing Group: III
Description: No information available

ADR

UN-No: UN1759
Proper Shipping Name: Corrosive solid, n.o.s.
Hazard Class: 8
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1759
Proper Shipping Name: Corrosive solid, n.o.s.
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1759
Proper Shipping Name: Corrosive solid, n.o.s.
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1759
Proper Shipping Name: Corrosive solid, n.o.s.
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA

UN-No: UN1759
Proper Shipping Name: Corrosive solid, n.o.s.
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 8L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Stannous Chloride, Dihydrate	Not Listed	Not present	Present	Present (1)-260	Present	Present	Not present

U.S. Regulations

Stannous Chloride, Dihydrate

California Directors List of Hazardous Substances: Present (tin compounds)
FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1845

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Stannous Chloride, Dihydrate	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting *de minimis*
Stannous Chloride, Dihydrate	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Stannous Chloride, Dihydrate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
E Corrosive material

Stannous Chloride, Dihydrate
E Corrosive material

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Stannous Chloride, Dihydrate	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Stannous Chloride, Dihydrate	Not Listed	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Stannous Chloride, Dihydrate	Not listed	Not listed

EU Classification

R-phrase(s)
R22 - Harmful if swallowed.
R34 - Causes burns.

S -phrase(s)
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36 - Wear suitable protective clothing.
S37 - Wear suitable gloves.
S39 - Wear eye/face protection.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Components	Classification	Concentration Limits:	Safety Phrases
Stannous Chloride, Dihydrate		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
C - Corrosive.
Xn - Harmful.

16. OTHER INFORMATION

16. OTHER INFORMATION

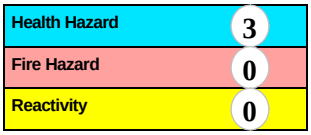
Preparation Date: 2/10/2015
Revision Date: 02/10/2015
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet

GARDENA, CA
NEW BRUNSWICK, NJ

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
		 See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Stannous chloride dihydrate**
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248
Commercial Name(s)	Not available.
Synonym	Tin (II) chloride dihydrate; Stannous dichloride dihydrate
Chemical Name	Stannous Chloride dihydrate
Chemical Family	Not available.
Chemical Formula	SnCl2.2H2O
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248

Catalog Number(s).	S1535, S1536
CAS#	10025-69-1
RTECS	XP8850000
TSCA	TSCA 8(b) inventory: No products were found.
CI#	Not available.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300

CALL (310) 516-8000

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS #**	**TWA (mg/m^3)**	**STEL (mg/m^3)**	**CEIL (mg/m^3)**	**% by Weight**
1) Stannous chloride dihydrate	10025-69-1	2			100

Toxicological Data on Ingredients

Stannous chloride (CAS no. 7772-99-8):
ORAL (LD50): Acute: 700 mg/kg [Rat] (Registry of Toxic Effects of Chemical Substances). 1200 mg/kg [Mouse] (Hazardous Substance Data Bank). 250 mg/kg [Mouse] (Registry of Toxic Effects of Chemical Substances).

Section 3. Hazards Identification

Potential Acute Health Effects

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (corrosive), of eye contact (corrosive). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Continued on Next Page

Potential Chronic Health Effects	**CARCINOGENIC EFFECTS**: Not available. **MUTAGENIC EFFECTS**: Not available. **TERATOGENIC EFFECTS**: Not available. **DEVELOPMENTAL TOXICITY**: Not available. The substance may be toxic to blood, kidneys, lungs, liver, upper respiratory tract, skin. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not applicable.
Products of Combustion	Not available.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Not applicable.
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 stong explosion on impact.

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Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Large Spill	Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area. Moisture sensitive.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 2 (mg/m^3) from OSHA (PEL) [United States] TWA: 2 (mg/m^3) from ACGIH (TLV) [United States] TWA: 2 (mg/m^3) from NIOSH Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid.	**Odor**	Odorless.
Molecular Weight	225.63 g/mole	**Taste**	Not available.
pH (1% soln/water)	Not available.	**Color**	White.
Boiling Point	Not available.		
Melting Point	38°C (100.4°F)		
Critical Temperature	Not available.		
Specific Gravity	2.71 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water, methanol.		

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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.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Excess heat, incompatible materials, moisture. May decompose on contact with moist air or water.
Incompatibility with various substances	Reactive with oxidizing agents, metals, acids, alkalis.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Incompatible with sodium, potassium, bromine trifluoride, calcium carbide, calcium acetylide, ethylene oxide, chlorine, turpentine, nitrates. Reacts with hydrazine to form dihydrazine chloride which decomposes explosively when heated. Contact with strong oxidizing agents or alkalis will generate heat and fumes. Stannous Chloride dihydrate is a strong reducing agent and will absorb oxygen from the air and forms insoluble oxychloride. It decomposes on strong heating.
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 250 mg/kg [Mouse] (Registry of Toxic Effects of Chemical Substances).
Chronic Effects on Humans	May cause damage to the following organs: blood, kidneys, lungs, liver, upper respiratory tract, skin.
Other Toxic Effects on Humans	Very hazardous in case of skin contact (irritant), of ingestion, . Hazardous in case of inhalation (lung corrosive). Slightly hazardous in case of skin contact (corrosive), of eye contact (corrosive).
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic). May cause adverse reproductive effects and birth defects (teratogenic)
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Stannous chloride forms dilute HCl on contact with moisture or moist membranes (skin, eyes, nose, mouth, etc.) Skin: Causes severe skin irritation or skin burns particularly on contact with moist or wet skin. The risk of absorption is slight. Eyes: Causes severe eye irritation or eye burns. Inhalation: Causes chemical burns or burning irritation to the upper respiratory tract, coughing, wheezing. Irritation may lead to chemical pneumonitits and pulmonary edema. Ingestion: Harmful if swallowed. Causes nausea, abdominal pain(cramping), vomiting, and diarrhea. Can cause burning of the lips, mouth tongue, throat, and stomach, stomach bleeding, reduced blood pressure, collapse. May affect the liver and kidneys, behavior/central nervous system (headache, fatigue, somnolence, convulsions). Chronic Potential Health Effects: Skin: Repeated or prolonged contact causes skin irritation and dermatitis. Ingestion: Prolonged or repeated ingestion may cause decreased bone formation. It may also affect the blood, liver, kidneys, metabolism (weight loss). Inhalation: 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 pneumonconiosis (dusty lung) producing distinctive changes in the lungs

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with no apparent disability or complications. Stannosis has not been associated with illness or decreased life expectancy.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification	Class 8: Corrosive material
Identification	: Corrosive solid, n.o.s. (Stannous chloride) UNNA: 1759 PG: III
Special Provisions for Transport	Not available.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

Connecticut hazardous material survey.: Stannous chloride (CAS no. 7772-99-8)
Massachusetts RTK: Stannous chloride (CAS no. 7772-99-8)
New Jersey: Stannous chloride (CAS no. 7772-99-8)

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications

WHMIS (Canada)	Classification of this product has not been validated yet by the Service du repertoire toxicologique. However, it would probably fall into the CLASS E classification: Corrosive solid.	
DSCL (EEC)	R22- Harmful if swallowed. R34- Causes burns.	S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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HMIS (U.S.A.)

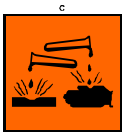
Health Hazard	3
Fire Hazard	0
Reactivity	0
Personal Protection	j

National Fire Protection Association (U.S.A.)

Health
Flammability
Reactivity
Specific hazard

WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment

Gloves.

Synthetic apron.

Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

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Section 16. Other Information

MSDS Code	**S4760**
References	Not available.
Other Special Considerations	Not available.

Validated by Sonia Owen on 9/14/2006.

Verified by Sonia Owen.

Printed 9/14/2006.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.