



**Borin**  
Manufacturing Inc

## MATERIAL SAFETY DATA SHEET

**"Stelth"** SRE-011-SPB

### SILVER

#### Section 1 - Identification

Product:	Silver
CAS Number:	7440-22-4
Product Code:	12-000
Chemical Family:	Metal
Chemical Formula:	Ag
Molecular Weight:	107.90
RTECS Number:	VW3500000
Synonyms:	Commercial Fine Silver

#### Section 2 - Hazardous Chemical Components

Component:	Silver	Percent of Mixture:	g 99.9
CAS Number:	7440-22-4	ACGIH TLV	(1991 -92)
OSHA PEL:	0.01 mg. / m3 (TWA)	0.1 mg. / m3 (TWA)	

#### Section 3 - Physical Data

Boiling Point:	4014 degrees F	2212 degrees C
Melting Point:	1764 degrees F	962 degrees C
Vapor Pressure:	N/A	
Vapor Density:	(Air+1) : N/A	
Specific Gravity:	10.5	
Solubility (H2O):	Insoluble	
Percent Volatile:	N/A	
Evaporation Rate:	Solid - N/A	
Appearance:	Gray-White metal in form of wire, rod, tubing, sheet, strip, grain, powder or anode.	
Odor:	Solid - N/A	

#### Section 4 - Fire Fighting & Explosion Data

Flash Point:	N/A degrees F
Autoignition:	N/A degrees F
Flammability Class:	N/A
Lower Explosive Limit (%):	N/A
Upper Explosive Limit (%):	N/A
Fire & Explosive Hazards:	In finely-divided form, this material may ignite when exposed to flame or by reaction with incompatible materials. Fires or

explosions involving this material, may release potentially toxic emissions of silver or silver oxide fume.

#### **Section 4 - Fire Fighting & Explosion Data (Continued)**

Extinguishing Media: Use dry powder. Do not use water.  
 Special Fire Fighting Instruc: Use self-contained breathing apparatus with full-facepiece operated in pressure-demand or other positive pressure mode.

#### **Section 5 - Exposure Effects and First Aid**

Route of Exposure: (Inhalation) Chronic exposure to silver may produce argyria, a permanent blue-gray discoloration of the skin, eyes, mucous membrane and the respiratory tract.

First Aid: (Inhalation) If signs and symptoms of toxicity are observed, remove subject from contaminated area, administer oxygen and seek medical attention. Keep the subject warm and at rest. Perform artificial respiration if breathing has stopped.

Route of Exposure: (Skin) Skin contact with this material in solid forms is not known to be hazardous. In powdered form, skin contact may produce localized irritation and/or argyria.

Fist Aid: (Skin) Following repeated or prolonged contact, remove contaminated clothing. Wash affected area with large quantities of water for at least five minutes. Seek medical attention if necessary.

Route of Exposure: (Eyes) Exposure of the eyes to this material in powdered form may produce localized argyria and / or irritation.

First Aid: (Eyes) Flush affected areas with water for at least 15 minutes. Seek medical attention if necessary.

Route of Exposure: (Ingestion) Ingestion of this material in finely-divided form may produce vomiting, abdominal pain and / or collapse.

First Aid: (Ingestion) If subject is conscious, induce vomiting. If unconscious or convulsive, seek immediate medical assistance.

Miscellaneous Toxicological Information: Silver is not classified as a potential or demonstrated human carcinogen by IARC, NIOSH, NTP, OSHA, or ACGIH.

Health Conditions Aggravated by Exposure: Pre-existing skin diseases (e.g., dermatitis) may be aggravated by sustained dermal exposure to this material in finely-divided form.

#### **Section 6 - Reactivity & Polymerization**

Stability: Stable

Conditions to Avoid: (Stability) Stable at room temperature.

Incompatible Material: Acetylene; ammonia; nitric acid; ethylene imine; chlorine trifluoride; H<sub>2</sub>SO<sub>4</sub>; inorganic and organic peroxides; peroxyformic acid; bromoazide; oxalic acid; 1-bromo-2-propyne; tartaric acid, permonosulfuric acid.

Hazardous Decomposition Product: Heating to elevated temperatures may volatilize silver as fume.

Conditions to Avoid: (Polymerization) N/A Hazardous Polymerization: does not occur.

#### **Section 7 - Spill, Leak and Disposal Procedures:**

Steps to be taken: Clean up spilled material so as to minimize dispersion of dust. Wet sweeping or vacuuming using HEPA filtration are recommended methods.

Waste Disposal Methods: Return to manufacturer for reclaim.

SARA Title III Notifications: Reportable Quantity is 1000 pounds

SARA Title III Hazard

Classifications: Chronic Health Hazard Fire Hazard

**Section 7 - Spill, Leak and Disposal Procedures (Continued):**

SARA Title III Section 313: (Supplier Notification) This product contains the following toxic chemicals subject to the reporting requirement of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

<b><u>CAS #</u></b>	<b><u>Chemical Name</u></b>	<b><u>Percent of Mixture</u></b>
7440-22-4	Silver	99.9

This information must be included on all MSDS's that are copied and distributed for this material.

**Section 8 - Special Protective Measures**

Ventilation:	Use mechanical local exhaust ventilation adequate to maintain airborne concentrations of all components and reaction products to within their respective OSHA PEL's.
Eye Protection:	If this material is used in finely-divided form, wear eye protection (safety glasses, dust proof goggles) adequate to prevent eye contact with this material.
Skin Protection:	Wear appropriate protective gloves and clothing for prolonged or repeated contact with finely-divided material.
Respiratory Protection:	If exposure levels exceed the OSHA PEL, wear a NIOSH/MSHA approved respirator having a protection factor appropriate to the airborne concentrations of the contaminants generated.
Work/Hygienic Practices:	To avoid ingestion of material, wash hands and face before eating, drinking or consumption of tobacco.

**Section 9 - Special Precautions (Storage and Handling)**

Storage and Handling  
Conditions: Do not store in proximity to incompatible materials (see Section 6).

**Section 10 - Shipping Information**

Hazard Class: Not controlled by DOT, IATA, ICAO or IMO regulations.

**DISCLAIMER OF EXPRESSED IMPLIED WARRANTIES**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of this product's use. Each individual must make his or her own determination as to the suitability of the information for each purpose (s) or use.

**SODIUM CHLORIDE**

Manufactured by Cargill Salt

**Section 1 - General Information**

Chemical Name: Sodium Chloride  
Formula: NaCl  
Trade Name (Synonym): Salt  
CAS Number: 7647-14-5  
Molecular Weight: 58.44

**Section 2 - Hazardous Ingredients / Identity Information**

Component: Specific Chemical Identity and / or common names: none

**Section 3 - Physical Data**

Boiling Point: 760mm Hg 1465 degrees C  
Specific Gravity: (H2O = 1) 2.16

**Section 4 - Fire Fighting & Explosion Data**

Flash Point: N/A  
Flammable Limits: LEL - N/A UEL - N/A  
Extinguishing Media: N/A This product is nonflammable  
Special Fire Fighting Procedures: N/A  
Unusual Fire and Explosive Hazards: None

**Section 5 - Reactivity Data**

Stability: Stable  
Conditions to Avoid: Contact with strong acids  
Incompatible Material: Becomes corrosive to metals when wet  
Hazardous Decomposition or Byproducts: May evolve chlorine gas when in contact with strong acids.  
Hazardous Polymerization: Will not occur

**Section 6 - Health Hazard Data**

Route of Exposure: (Inhalation) May cause mild irritation of nose and throat.  
(Skin) Dust may cause mild irritation.  
(Ingestion) Ingestion of large amounts may cause gastrointestinal upset.

Carcinogenicity: NTP - Not listed as a carcinogen or mutagen.  
IARC Monographs - Not listed as a carcinogen or mutagen.  
OSHA Regulated - Not listed as a carcinogen or mutagen.

Signs and Symptoms of Exposure: (Inhalation) Slight irritation of the nose; sneezing.  
(Skin) Irritation; inflammation.  
(Ingestion) Nausea; vomiting.

Medical Conditions generally aggravated by Exposure: In some cases of confirmed hypertension, ingestion may result in elevated blood pressure. (This applies only to salt-sensitive individuals).

First Aid: (Inhalation) If person breathes large quantities, remove to fresh air

at once. If breathing stops, apply artificial respiration immediately.  
 (Skin) Remove clothing from affected area. Wash skin thoroughly

#### **Section 6 - Health Hazard Data (Continued)**

and rinse carefully. For eye contact, flush with water immediately, lifting eyelids occasionally.

(Ingestion) Less than a few grams would not be harmful. For larger quantities, drink large amount of water or milk.

#### **Section 7 - Precautions for Safe Handling and Use**

Waste Disposal Method:	For disposal of this material as a waste, act in accordance with all applicable Federal, state and local waste management regulations.
Handling & Storage:	Avoid humid or wet conditions as product will cake and become hard.
Other Precautions:	N/A

#### **Section 8 - Control Measures**

Respiratory Protection:	NIOSH/MSHA approved respirator for particulates.
Ventilation:	Local exhaust - Ventilate as required to maintain airborne particulates below occupational exposure limits. Mechanical - Dust collection equipment may be employed. Special - N/A
Special Protective Measures:	Wear protective gloves. Normal work gloves are adequate. Wear eyeglasses or goggles in dusty areas. Other protective clothing or equipment - Protective clothing may be worn in dusty areas, but is generally not required.
Work / Hygiene Practices:	Warm water showering and handwashing is suggested after working in extremely dusty areas.

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All statements, technical information and recommendations contained herein are the best of our knowledge, reliable and accurate. However, no warranty, either express or implied, is made with respect thereto, nor will any liability be assumed for damages resultant from the use of the material described.

It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations. It is also the responsibility of the user to maintain a safe workplace. The user should consider the health hazards and safety measures.