



**SAFETY DATA SHEET**  
**Asahi Silver Metallization Paste**

**Asahi Silver Paste SI-HT211**

**SDS #: ESP1-6/0**

*Date of Preparation: November 2023*

**SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION**

**1.1 Product Details:**

Product Name : Asahi Silver Paste

Trade Name : SI-HT211

Use : Silver Ink for electrode printing

**1.2 Company's Identification:**

Manufacturer's Name and Address : Singapore Asahi Chemical & Solder  
Industries Pte Ltd  
47 Pandan Road  
Singapore 609288

Telephone : (65) 6262-1616

Facsimile : (65) 6261-6311

**1.3 Contact Point:**

Designation : Chemist

Emergency Telephone Number: (65) 6262-1616

**SECTION 2: HAZARD IDENTIFICATION**

**GHS Classification**

Acute Toxic

Dermal : Classification 5

Sensitization – Skin : Classification 1

Eye damage/irritation : Classification 2B

Specific target organ toxicity

Single exposure : Classification 3 (respiratory system)

Aspiration hazard : Category 2

**GHS Label Elements:**



**GHS Signal Word:** Warning

**GHS Hazard Statement:** H305 May be harmful if swallowed and enters airways  
H313 May be harmful in contact with skin H317  
May cause an allergic skin reaction H320 Causes eye irritation  
H335 May cause respiratory irritation  
H411 Toxic to aquatic life with long lasting effects

**GHS Precautionary Statement:**

**Prevention**

P261 Avoid breathing dust, fume, gas, mist, vapours and spray.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves, eyes and face protections.

**Response**

P301, P312, P330 IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.  
P303, P361, P353 IF ON SKIN (or hair): Remove or take off immediately all contaminated clothing. Rinse skin with water or shower.  
P305, P351, P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P313, P332, P337 If eye or skin irritation persists: Get medical advice/attention.  
P331 Do NOT induce vomiting.

**Disposal**

P501 Dispose of contents or container to appropriate waste site in accordance with local and national regulations.

**Environment Effects:** No effect on environment

**SECTION 3: COMPOSITION/INFORMATION ON MATERIAL**

Chemical Name	CAS No.	%	OSHA PEL(mg/m <sup>3</sup> )	ACGIH TLV (mg/m <sup>3</sup> )	Other Limits Recommended
Silver (Ag)	7440-22-4	65 – 85	0.01	0.1	
Binder	Proprietary	15 - 35	NE	NE	-
<b>Total</b>		<b>100</b>			

**SECTION 4: FIRST AID MEASURES**

Ingestion : Wash your mouth well with water and gargle. Get medical attention if necessary  
Eye Contact : Flush eyes with plenty of water immediately for at 15 minutes. Seek medical attention.  
Skin Contact : Wash thoroughly with soap and warm water.  
Inhalation : Blow nose and gargle. If signs/ symptoms occurs, remove person to fresh air. If signs / symptoms continue, call a physician

## SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media : Water, Dry chemical, CO<sub>2</sub>, etc  
Specified method : In case of a small scale fire, use water, dry chemicals or CO<sub>2</sub>. In case of large scale fire, wear protective gas mask and use water spray method.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

Health measures : Put on dust protection mask, goggle and gloves if necessary.  
Environmental measures : In case of large release, do not release to a sewer or natural environment.  
Removal method: Remove by vacuuming or mop with a cloth, and then wash.

## SECTION 7: HANDLING AND STORAGE

Handling : Wash hand thoroughly with soap and water prior to eating, drinking or smoking. Do not smoke while soldering. Avoid inhalation of vapors and contact with skin and eyes. Observe good industrial practices.  
Storage : Store in a cool environment away from oxidizing agents and direct sunlight..

## SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

Engineering Measures : Maintain general or local exhaust ventilation to meet exposure limit requirements.  
Personal Protection : Operator should be protected from fumes  
PROTECTIVE GLOVES : Impervious rubber  
EYE PROTECTION : Safety glasses

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Silver cream  
Odor : Mild Solvent Odor  
Solubility in water: : Silver insoluble in water but soluble in nitric acid  
Binder insoluble in water  
Boiling Point(°C) : Silver 2155°C  
Melting Point(°C) : Silver 961°C  
Vapor Pressure(mm of Hg at 20°C) : NA  
Vapour Density (air=1) : NA  
Percentage Volatiles (by Volume) : NA  
Evaporation Rate (butyl acetate=1) : NA  
Specific Gravity (water=1 at 25°C) : NA  
Flash Point (°C) : Silver none  
Binder 300 – 400°C  
Combustible : Silver incombustible  
Binder combustible

## SECTION 10: PHYSICAL HAZARDS (STABILITY AND REACTIVITY)

Condition to avoid	: High temperature and high humidity
Stability	: Stable
Decomposition products	: Unknown
Hazardous Reaction	: Silver reacts with acetylene to form sensitive chemical compound, reacts with acid to cause high heat, and reacts to condensed hydrogen peroxide to form gaseous oxygen. Dry silver clay reacts with ammonia to form explosive compound.

## SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity data	: None
Carcinogenicity	: Not listed
Skin Corrosion	: Possible irritation to the skin and mucous membrane.
Inhalation	: Possible irritation of upper respiratory including soreness of nose and throat, coughing and sneezing.

## SECTION 12: ECOLOGICAL INFORMATION

Mobility & Bioaccumulation	: May release in dust form in the air.
Biodegradability	: Non biodegradable
Aquatic Toxicity	: Harmful to aquatic organisms

## SECTION 13: DISPOSAL INFORMATION

Dispose according to federal, state and local regulations. This product is suitable for recovery following appropriate recovery routes or methods. If in doubt, contact Singapore Asahi.

## SECTION 14: TRANSPORT INFORMATION

In accordance with DOT/ADR/IMDG/IATA

UN Number	: Not a dangerous good in sense of transport
T.D.G. Classification	: NA
Packing group	: NA
Special shipping instruction	: NA

## SECTION 15: REGULATORY INFORMATION

Laws of Labour, Safety and health	: Silver reporting material (#138 / Silver and its water soluble compound – under 1% inclusion)
Pollutant Release and Transfer Register	: Silver / Category 1, Designated Chemical Material (#64 silver and its water soluble compound – over 1% inclusion)
Ordinance Review for Regulation of Dangerous Substance, Chapter 1 -12:	Binder / Designated combustibility synthetic resins (other category)

\*Ensure this product in compliance with federal requirements and ensure conformity to local regulation and law.

## **SECTION 16: OTHER INFORMATION**

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THE COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED.

HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO ITS ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.

\*optional

NE = Not Established

NA = Not Applicable

PEL = Permissible Exposure Level