

SAFETY DATA SHEET
Silver Nanowire Screen-Printing Ink
SPS1100
MSDS #: ESP 4-5/1
Date of Preparation: March 2026

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

1.1 Product Details:

Product Name : Silver Nanowire Screen-Printing Ink, SPS1100
Trade Name : Silver Nanowire Screen-Printing Ink, SPS1100

1.2 Company's Identification:

Name and Address : Singapore Asahi Chemical & Solder Ind. 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 toxicity
Oral : Category 4
Dermal : Category 5
Inhalation : Category 5
Skin corrosion/irritation : Category 3
Serious eye damage/irritation : Category 2B
Specific target organ toxicity (single exposure) : Category 3 (Narcotic effects)
Aspiration hazard : Category 2

GHS label elements



GHS Signal Word: Warning

GHS Hazard Statement: H302 Harmful if swallowed
H305 May be harmful if swallowed and enters airways
H313 May be harmful in contact with skin
H333 May be harmful if inhaled
H316 Causes mild skin irritation
H320 Causes eye irritation
H336 May cause drowsiness or dizziness

GHS Precautionary Statement:

Prevention

P233 Keep container tightly closed.
P261 Avoid breathing dust, fume, gas, mist, vapor and spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
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.
P304, P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P370, P378 In case of fire: Use foam, water spray or fog for extinction.

Storage

P403, P233, P235 Store in a well-ventilated place. Keep container tightly closed and cool.
P405 Store locked up.

Disposal

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

Other Hazards which do not result in Classification : Repeated exposure may cause skin dryness or cracking. Slightly irritating to respiratory system. Vapors are heavier than air.

SECTION 3: COMPOSITION

Component	Cas No	Concentration
Silver	7440-22-4	0.1 – 3.0%
Binders	Proprietary	0.1 – 5.0%
Solvents	Proprietary	87.0 – 99.79%
Additives	Proprietary	0.01 – 5.0%

SECTION 4: FIRST AID MEASURES

- Ingestion : Seek medical assistance immediately. Do not induce vomiting. If individual is drowsy or unconscious, do not feed anything by mouth.
- Eye Contact : Rinse with clean water for 15 minutes. Seek medical assistance.
- Skin Contact : Remove all contaminated clothing. Wash exposed area with soap and rinse with clean water for 15 minutes. Seek medical assistance.
- Inhalation : If overcome by exposure, remove victim to fresh air. Give oxygen or artificial respiration if required. Seek medical attention immediately.

SECTION 5: FIRE-FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Suitable Extinguishing Media:

Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into aquatic environment.

Specific hazards arising from chemicals:

Flammable liquid, can release vapors that form flammable mixtures at temperatures at or above the flashpoint. Try to cover liquid spills with foam.

Protective Equipment & Precautions for Fire Fighters:

Wear full protective clothing and self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

Personal Precautions, Protective Equipment and Emergency Procedures:

Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see SECTION 8.

Environmental Precautions:

Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and fire fighting water) to avoid environment contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against

static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

Methods and Materials for Containment and Clean Up:

Transfer spilled liquid by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose safely. Remove contaminated soil and dispose safely.

SECTION 7: HANDLING AND STORAGE

General Precautions:

Avoid breathing vapors or contact with material. Only use in well ventilated areas. Wash thoroughly after handling.

Precautions for Safe Handling:

Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 10 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Handling Temperature: Ambient.

Conditions for Safe Storage:

Keep away from aerosols, flammables, oxidizing agents, corrosives and from products harmful or toxic to human or to the environment. Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Storage Temperature: Ambient.

SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

Engineering Measures	: Maintain general or local exhaust ventilation to meet exposure limit requirements.
Respiratory Protection	: NIOSH/MSHA approved respirators may be used to prevent overexposure by inhalation.
Protective Gloves	: When material is heated, wear gloves to protect against thermal burns. Wear chemical resistant gloves.
Eye Protection	: Wear safety glasses with side shields.
Other Protective Equipment	: For open systems where contact is likely, wear protective clothing, chemical resistant gloves/boots and chemical goggles.
Work Hygienic Practices	: Do not eat, drink, or smoke in work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	: Liquid (May gel up)
Color	: Dark Blue
Odor	: Ether
Specific Gravity (20°C)	: N.E.
Solubility in water (20°C)	: N.E.
Boiling point (1,013 hPa)	: 130°C
Flash Point (°C)	: 11.5

SECTION 10: PHYSICAL HAZARDS (STABILITY AND REACTIVITY)

Stability : Stable.
Incompatibles : Strong oxidizing agents.
Hazardous Decomposition Products : Carbon, nitrogen and sulphur oxides on burning
Hazardous polymerization : Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity data : Low order of toxicity.
Carcinogenicity : NA.
Reproductive Effect : NA.
Effects of overexposure (Chronic Effect):
Ingestion : Small oral doses may cause bronchopneumonia or pulmonary edema.
Eye Contact : Irritating. Will injure eye tissue if not removed promptly.
Skin Contact : Low order of toxicity. Prolong contact might lead to discomfort and dermatitis.
Inhalation : Vapor concentration above recommended exposure levels could be anesthetic and may have other central nervous effects eg. headache and dizziness.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity : No known or expected ecotoxicity
Persistence and Biodegradability : Not determined.
Bioaccumulative Potential : Not determined.
Mobility in Soil : Not determined

SECTION 13: DISPOSAL INFORMATION

Discharge or dispose according to federal, state and local regulations.

SECTION 14: TRANSPORTATION INFORMATION

UN number

ADR/RID: 1993 IMDG: 1993 IATA-DGR: 1993

UN proper shipping name

ADR/RID : Flammable Liquid
IMDG : Flammable Liquid
IATA-DGR : Flammable Liquid

Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA-DGR: 3

Packaging group

ADR/RID: II IMDG: II IATA-DGR: II

Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA-DGR: no

Special precautions for user

None

SECTION 15: REGULATORY INFORMATION

Nature of Special Risk:

R36	Irritating to eyes.
R67	Vapors may cause drowsiness and dizziness.

Safety Advice

S07/09	Keep container tightly closed and in a well-ventilated place.
S24/25	Avoid contact with skin and eyes.
Xi	Irritating properties.

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