



SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: LTTT-6363

SDS Number: SDS-4691

Revised Date: 4 OCTOBER 2018

Product Use: Solar Metallization Paste

MANUFACTURER:

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<http://www.indium.com>

2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

Eye
 Inhalation
 Skin
 Ingestion
 NTP
 Carcinogen listed in IARC
 OSHA
 Not Listed

GHS:

No GHS hazard statements

Precautionary statement(s)

- P233 Keep container tightly closed
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P270 Do not eat, drink or smoke when using this product
- P273 Avoid release to the environment
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P362 +P364 Take off contaminated clothing and wash before reuse
- P301 + P314 IF SWALLOWED: Get Medical advice/attention if you feel unwell
- P302 +P352 IF ON SKIN: Wash with plenty of soap and water
- P304 + 341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
- P305 + 351 IF IN EYES: Rinse continuously with water for several minutes (15 mins)

POTENTIAL HEALTH EFFECTS:

- Eye Contact:** May cause eye irritation.
- Ingestion:** May cause irritation. May be harmful if swallowed.
- Inhalation:** Vapors or fumes from this material may be harmful. May cause irritation.
- Skin Contact:** May cause skin irritation.

Chronic:

Silver: Chronic skin contact or ingestion of silver dust, salts, or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes.

Dipropylene glycol monomethyl ether – target organ = liver/kidneys/nerves



WARNING: This product can expose you to chemicals including [trace amounts of lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

NOTE: The Indium Corporation does not recommend, manufacture, market or endorse any of its products for human consumption.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt	CAS Registry #/EINECS#	PEL mg/m ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
SILVER(flake)	78-88	7440-22-4/231-131-3			
		(US)	0.01	0.1	-

			(EU)	-	0.1	-
			(Canada)	-	0.1	0.3
			(Singapore)	0.1	-	-
			(Mexico)	0.1	-	-
DIPROPYLENE GLYCOL MONOMETHYL ETHER	5 – 12	34590-94-8/252-104-2				
			(US)	600	606	909
			(EU)	-	308	-
			(Canada)	-	606	909
			(Singapore)	606	-	909
			(China)	-	600	900
ALUMINUM(powder)	0.2 – 2	7429-90-5/231-072-3				
			(US)	5(respirable)	10	-
			(EU)	-	4(respirable)	-
			(Canada)	-	10	20
			(Singapore)	10	-	-
			(Mexico)	-	5	-
PROPRIETARY EPOXY RESIN	3-5	-		N.E.	N.E.	N.E.
PROPRIETARY CURING AGENT	2-3	-		N.E.	N.E.	N.E.
N.E. = Not established		EU = European Union Occupational Exposure Limits				

4. FIRST AID MEASURES

- Eye Contact:** Hold eyelids apart and flush eyes with plenty of tepid water for at least 15 minutes. Seek medical attention if irritation persists.
- Ingestion:** If patient is conscious, ONLY induce vomiting as directed by trained personnel. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.
- Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.
- Skin Contact:** Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

5. FIRE FIGHTING MEASURES

Flash Point:	92C (197F)	Method:	Not available
Auto-ignition Temperature:	Not established.		
Flammable Limits:	Limits not established.		
Extinguishing Media:	Use extinguishers appropriate for the surrounding fire conditions.		
Special Fire Fighting Procedures:	Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.		

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:	Using a spatula, scoop up paste and place in a plastic or glass jar and tightly cap. Remove traces of paste residue using cloth rags or paper towels moistened with ethyl or isopropyl alcohol. Dispose contaminated cloth rags or paper towels following all Federal, State and Local regulations. In the EU refer to the Special Waste Regulations. May have metal reclaim value.
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7. HANDLING AND STORAGE

Handling Precautions:	Keep containers tightly closed when not in use. Use care to avoid spills. Use only with production equipment specifically designed for the application. Wear appropriate personal protective equipment when working or handling solder paste. Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed. Product contains silver flake and aluminum powder mixed with chemicals.
Storage Precautions:	Store product in tightly capped original containers in a cool, dry area. Refer to product label for specific storage temperature requirements. Rotate stock to ensure use before expiration date on the label.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:	Control concentration of all components so that the exposure levels are not exceeded. Utilize ventilation exhaust to keep exposures to as low as possible.
Personal protection:	
Eyes:	Chemical safety glasses/goggles. Face shield for splash hazards.
Respirator:	A NIOSH approved or EU compliant CE marked air-purifying respirator with a fume/organic chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated or exceed exposure limits.
Skin:	Compatible chemical resistant gloves.
Other:	Lab coat, eyewash fountain in work area. Avoid the use of contact lenses in high fume areas.
Work/Hygienic Practices:	Maintain good housekeeping. Clean up spills immediately. Good personal hygiene is essential. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Grey colored paste	Boiling Point:	Not applicable.
Odor:	Mild characteristic odor.	Melting Point:	Not applicable
Specific Gravity:	0.9 g/cc	pH:	4 - 8
Vapor Pressure:	Not applicable.	Solubility in Water:	Insoluble (paste)
Vapor Density:	(air=1) Not applicable.		

10. STABILITY AND REACTIVITY

General:	Stable.
Conditions to Avoid:	Not established.
Incompatible Materials:	Avoid contact with acids, bases or oxidizing agents.
Hazardous Decomposition / Combustion:	Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity:	NTP: No		
	OSHA: No		
	IARC: No		
LD50:	Not established.	LC50:	Not established.
CAS# 34590-94-8 LD50 Oral rat 5400 ul/kg, LD50 Skin rabbit 10 ml/kg			
Proprietary epoxy resin LD50 Oral rat >4,000 mg/kg			

12. ECOLOGICAL INFORMATION

Product not tested.

CAS# 34590-94-8 LC50 fish >10,000 mg/l

13. DISPOSAL CONSIDERATION

Waste Disposal Method: Scrap metal alloy usually has value. Contact a commercial reclaimer for recycling. Otherwise, dispose of in accordance with all Federal, State and Local environmental regulations.

14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements. Not regulated (Department of Transportation).

Non hazardous under shipping regulations.

Not regulated: ground/IATA/Ocean

15. REGULATORY INFORMATION

The information in this Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated hereunder (29 CFR 1910.1200 ET. SEQ.).

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).

WHMIS: Insufficient information to classify.

This product has been classified in accordance with the guidelines set by the Dept of Industrial Health of the Republic of Singapore.

This product has been classified in accordance with the Mexican regulations: NOM-018-STPS-2015 and NOM-010-STPS-2014.

Malaysia:

This product has been classified in accordance with: Malaysian – OCCUPATIONAL SAFETY AND HEALTH (CLASSIFICATION, LABELING AND SAFETY DATA SHEET OF HAZARDOUS CHEMICALS) REGULATION OCTOBER 2013 – (CLASS). (GHS)

In China:

Decree No. 591: Regulations on the Control over Safety of Hazardous Chemicals

GB 30000.2-29-2013, Rules for classification and labeling of chemicals. (GHS)

GB/T 16483-2008, GB/T 17517-2013

This product has been classified using the Chinese Occupational Limit for Hazardous Agents in the Workplace, GBZ2-2007



WARNING: This product can expose you to chemicals including [trace amounts of lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

SARA 313 Listing - 40 CFR 372.65
Silver CAS# 7440-22-4

RoHS = Restriction of Hazardous Substances EU directive 2002/95/EC

All ingredients are listed on the US EPA TSCA Inventory.

16. OTHER INFORMATION

HMIS Hazard Rating:	Health:	1
	Fire:	1
	Reactivity:	0

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Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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