

SAFETY DATA SHEET

Issuing Date 30-Aug-2016

Revision Date 28-Sep-2016

Revision Number 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

GHS product identifier

Product Name PSR-4000 LEW7S

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Solder Mask for use in printed circuit board mfg. shop

Uses advised against No information available

Supplier's details

Manufacturer Address

Taiyo Ink (Suzhou) Co. Ltd.
No. 26 Taishan Road
Suzhou New District, Suzhou City
Jiangsu Province, P.R. China
TEL: 0512-66655550

Emergency telephone number

Emergency Telephone Number 775-885-9959

2. HAZARDS IDENTIFICATION

Classification

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

Skin Sensitization	Category 1
Reproductive Toxicity	Category 2
Flammable liquids	Category 4

GHS Label elements, including precautionary statements

Emergency Overview

Signal Word

Warning

Hazard Statements

- May cause an allergic skin reaction
- Suspected of damaging fertility or the unborn child
- Combustible liquid.

**Appearance** Transparent, White.**Physical State** Paste.**Odor** Mild.**Precautionary Statements****Prevention**

- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear protective gloves.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Keep away from heat/sparks/open flames/hot surfaces - No smoking.

General Advice

- Specific treatment (see supplemental first aid instructions on this label)
- If exposed or concerned: Get medical attention/advice

Skin

- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation or rash occurs: Get medical advice/attention.
- Wash contaminated clothing before reuse.

Fire

- In case of fire: Use CO₂, dry chemical, or foam for extinction.

Storage

- Store locked up.
- Store in a well-ventilated place. Keep cool.

Disposal

- Dispose of contents/container to an approved waste disposal plant.

Hazard Not Otherwise Classified (HNOC)

Not applicable.

Other information

66.53% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade secret
Titanium dioxide	13463-67-7	30 - 40	*
Dipropylene glycol monomethyl ether	34590-94-8	20-30	*
Silicon Dioxide - hydrated	7631-86-9	1 - 5	*
Aluminum hydroxide	21645-51-2	1 - 5	*
Talc	14807-96-6	1 - 5	*
Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide	75980-60-8	1 - <3	*
Phosphine oxide, phenylbis(2,4,6-trimethylbenzoyl)-	162881-26-7	<1	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of necessary first-aid measures

General Advice	If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
Eye Contact	Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. In the case of skin irritation or allergic reactions see a physician.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Rinse mouth. Drink plenty of water. If symptoms persist, call a physician.
Protection of First-aiders	Use personal protective equipment.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects May cause allergic skin reaction. Itching. Rashes.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Water spray. Carbon dioxide (CO₂). Dry chemical. Dry powder.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical

Combustible material. Vapors may travel to source of ignition and flash back.

Explosion Data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	Yes.

Protective Equipment and Precautions 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 Use personal protective equipment. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Evacuate personnel to safe areas. Pay attention to flashback. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. In case of insufficient ventilation wear suitable respiratory equipment.

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Avoid release to the environment.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Use personal protective equipment. Dam up. Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Keep away from heat, sparks and open flame. No smoking. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Do not take internally.

Conditions for safe storage, including any incompatibilities

Storage Keep out of the reach of children. Keep away from heat and sources of ignition. Keep in properly labeled containers. Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Products Strong oxidizing agents. Strong acids. Strong bases.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust	IDLH: 5000 mg/m ³
Dipropylene glycol monomethyl ether 34590-94-8	STEL: 150 ppm TWA: 100 ppm S*	TWA: 100 ppm TWA: 600 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 600 mg/m ³ (vacated) STEL: 150 ppm (vacated) STEL: 900 mg/m ³ (vacated) S* S*	IDLH: 600 ppm TWA: 100 ppm TWA: 600 mg/m ³ STEL: 150 ppm STEL: 900 mg/m ³
Aluminum hydroxide 21645-51-2	TWA: 1 mg/m ³ respirable particulate matter	-	-
Silicon Dioxide - hydrated 7631-86-9	10 mg/m ³	20 mppcf TWA; ((80)/(% SiO ₂)) mg/m ³	IDLH: 3000 mg/m ³ TWA: 6 mg/m ³
Talc 14807-96-6	TWA: 2 mg/m ³	(vacated) TWA: 2 mg/m ³	IDLH: 1000 mg/m ³ contain no asbestos and <1% quartz TWA: 2 mg/m ³

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Risk of contact, wear: Goggles.
Skin and Body Protection Lightweight protective clothing. Impervious gloves.
Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene Measures When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Paste.	Appearance	Transparent, White.
Odor	Mild.	Odor Threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks/ - Method</u>
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	190 °C	None known
Flash Point	73 °C	Seta closed cup
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	0.28 (20 C)	None known
Vapor Density	6.12 (Air=1)	None known
Specific Gravity	No data available	None known
Water Solubility	<=28%	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known

Flammable Properties Combustible material: may burn but does not ignite readily

Explosive Properties No data available

Oxidizing Properties No data available

Other information

VOC Content (%) No data available

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Heat, flames and sparks. Incompatible products.

Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

Hazardous decomposition products

Carbon dioxide (CO₂). Carbon monoxide (CO). Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	No known hazard by inhalation.
Eye Contact	Contact with eyes may cause irritation.
Skin Contact	May cause allergic skin reaction.
Ingestion	No known hazard by swallowing.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Titanium dioxide	> 10000 mg/kg (Rat)	-	-
Dipropylene glycol monomethyl ether	= 5400 µL/kg (Rat)	= 9500 mg/kg (Rabbit)	-
Aluminum hydroxide	> 5000 mg/kg (Rat)	-	-
Silicon Dioxide - hydrated	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	>2.2 mg/L (Rat) 4 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization May cause sensitization of susceptible persons. May cause sensitization by skin contact.
Mutagenic Effects No information available.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. This product contains titanium dioxide which is classified as an IARC 2B carcinogen based on laboratory studies where animals were exposed to titanium dioxide dust. This product contains titanium dioxide in a non-respirable form. Inhalation of titanium dioxide is unlikely to occur from exposure to this product.

Chemical Name	ACGIH	IARC	NTP	OSHA
Titanium dioxide		Group 2B	-	-
Silicon Dioxide - hydrated		Group 3		
Talc		Group 3		X

IARC: (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans
 Group 3 - Not Classifiable as to its Carcinogenicity to Humans

OSHA: (Occupational Safety & Health Administration)

X - Present

Reproductive Toxicity Contains a known or suspected reproductive toxin. Suspected of damaging fertility or the unborn child.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration Hazard No information available.

Numerical measures of toxicity - Product

Acute Toxicity 66.53% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document:

LD50 Oral 6148 mg/kg; Acute toxicity estimate

LD50 Dermal 11384 mg/kg; Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity

Not classified

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Dipropylene glycol monomethyl ether 34590-94-8		LC50 96 h: > 10000 mg/L static (Pimephales promelas)		LC50 48 h: = 1919 mg/L (Daphnia magna)
Silicon Dioxide - hydrated 7631-86-9	EC50 72 h: = 440 mg/L (Pseudokirchneriella subcapitata)	LC50 96 h: = 5000 mg/L static (Brachydanio rerio)		EC50 48 h: = 7600 mg/L (Ceriodaphnia dubia)
Talc 14807-96-6		LC50 96 h: > 100 g/L semi-static (Brachydanio rerio)		

Persistence and Degradability No information available.

Bioaccumulation No information available.

Chemical Name	Log Pow
Dipropylene glycol monomethyl ether	-0.064

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated

IMDG/IMO Not regulated

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL Not determined

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	California Prop. 65
Titanium dioxide	13463-67-7	Carcinogen
Quartz	14808-60-7	Carcinogen

U.S. State Right-to-Know Regulations

"X" designates that the ingredients are listed on the state right to know list.

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Titanium dioxide	X	X	X		X
Dipropylene glycol monomethyl ether	X	X	X	X	X
Silicon Dioxide - hydrated	X	X	X		
Talc	X	X	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	Health Hazard 2	Flammability 2	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 2*	Flammability 2	Physical Hazard 0	Personal Protection X

*Indicates a chronic health hazard.

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date 30-Aug-2016
Revision Date 28-Sep-2016
Revision Note New regional format.

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet