SAFETY DATA SHEET

Issuing Date 28-Aug-2015 **Revision Date** 28-Aug-2015 **Revision Number** 0

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

GHS product identifier

Product Name **PSR-4000 AUS320**

Other means of identification

SDS Number MS-00216800-US00
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Solder mask part A

Uses advised against No information available

Supplier's details

Manufacturer Address
TAIYO INK MFG. CO., Ltd.
900 Hirasawa, Ranzan-machi, Hiki-gun, Saitama,
355-0215 Japan
TEL: 81-493-61-2724

Emergency telephone number

Emergency Telephone Number 81-493-61-2724

2. HAZARDS IDENTIFICATION

Classification

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

Carcinogenicity	Category 2
Reproductive Toxicity	Category 2
Flammable liquids	Category 4

GHS Label elements, including precautionary statements

Emergency Overview

Signal Word **Warning**

Hazard Statements
• Suspected of causing cancer
• Suspected of damaging fertility or the unborn child
•
• Combustible liquid.

Appearance Green **Physical State** Paste. **Odor** Mild

Precautionary Statements

Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Keep away from flames and hot surfaces - No smoking.

General Advice

- If exposed or concerned: Get medical attention/advice

Fire

- In case of fire: Use CO2, dry chemical, or foam to extinguish.

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

Toxic to aquatic life with long lasting effects

60.3% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade secret
Naphtha (petroleum), heavy aromatic	64742-94-5	10-20	*
Barium sulfate	7727-43-7	5-10	*
Dipropylene glycol monomethyl ether	34590-94-8	5-10	*
Talc	14807-96-6	1-5	*
Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide	75980-60-8	1-5	*
Naphthalene	91-20-3	1-5	*

**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. If symptoms persist, call a physician.

Skin Contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician if necessary.

Inhalation Move to fresh air. If symptoms persist, call a physician. If breathing is difficult, give oxygen.

Ingestion Rinse mouth. Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Protection of First-aiders Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects No information available.

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 (CO_2). Dry powder. Dry chemical.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical
Combustible liquid. Vapors may travel to source of ignition and flash back. Risk of ignition. In the event of fire and/or explosion do not breathe fumes. Keep product and empty container away from heat and sources of ignition.

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 Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Take precautionary measures against static discharges. Pay attention to flashback. 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. Collect spillage. Dispose of contents/container to an approved waste disposal plant. See Section 12 for additional Ecological Information.

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 Dam up. Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

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

Conditions for safe storage, including any incompatibilities

Storage Keep in properly labeled containers. Keep away from heat and sources of ignition. Keep out of the reach of children. 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
Barium sulfate 7727-43-7	TWA: 5 mg/m³ inhalable fraction, particulate matter containing no asbestos and <1% crystalline silica	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction	TWA: 10 mg/m³ total dust TWA: 5 mg/m³ respirable dust
Dipropylene glycol monomethyl ether 34590-94-8	STEL: 150 ppm TWA: 100 ppm S*	TWA: 100 ppm TWA: 600 mg/m³ (vacated) TWA: 100 ppm (vacated) TWA: 600 mg/m³ (vacated) STEL: 150 ppm (vacated) STEL: 900 mg/m³ (vacated) S* S*	IDLH: 600 ppm TWA: 100 ppm TWA: 600 mg/m³ STEL: 150 ppm STEL: 900 mg/m³
Talc 14807-96-6	TWA: 2 mg/m³	(vacated) TWA: 2 mg/m³	IDLH: 1000 mg/m³ containg no asbestos and <1% quartz TWA: 2 mg/m³
Naphthalene 91-20-3	TWA: 10 ppm S*	TWA: 10 ppm TWA: 50 mg/m³ (vacated) TWA: 10 ppm (vacated) TWA: 50 mg/m³ (vacated) STEL: 15 ppm (vacated) STEL: 75 mg/m³	IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m³ STEL: 15 ppm STEL: 75 mg/m³

Immediately Dangerous to Life or Health. ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH:

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety glasses with side-shields.
Skin and Body Protection Lightweight protective clothing. Protective gloves.
Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Paste.	**Appearance**	Green.
Odor	Mild.	**Odor Threshold**	No information available.

Property	Values	Remarks/ - Method
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	No data available	None known
Flash Point	72 °C / 161.6 °F	None known
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	No data available	None known
Vapor Density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	No data available	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	170-250Ps	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 (%) 34.5

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

Incompatible products. Heat, flames and sparks.

Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO_2). Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	There is no data available for this product.
Eye Contact	There is no data available for this product.
Skin Contact	There is no data available for this product.
Ingestion	There is no data available for this product.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Naphtha (petroleum), heavy aromatic	> 5000 mg/kg (Rat)	> 2 mL/kg (Rabbit)	> 590 mg/m³ (Rat) 4 h
Dipropylene glycol monomethyl ether	= 5230 mg/kg (Rat)	= 9500 mg/kg (Rabbit)	-
Naphthalene	= 1110 mg/kg (Rat) = 490 mg/kg (Rat)	= 1120 mg/kg (Rabbit) > 20 g/kg (Rabbit)	> 340 mg/m³ (Rat) 1 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 No information available.
Mutagenic Effects No information available.
Carcinogenicity Contains a known or suspected carcinogen. May cause cancer. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Naphthalene	A3	Group 2B	Reasonably Anticipated	X

ACGIH: (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)
X - Present

Reproductive Toxicity Contains a known or suspected reproductive toxin. Possible risk of impaired fertility. Possible risk of harm to 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 60.3% 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 8543 mg/kg; Acute toxicity estimate

LD50 Dermal 23885 mg/kg; Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Naphtha (petroleum), heavy aromatic 64742-94-5	EC50 72 h: = 2.5 mg/L (Skeletonema costatum)	LC50 96 h: = 19 mg/L static (Pimephales promelas) LC50 96 h: = 2.34 mg/L (Oncorhynchus mykiss) LC50 96 h: = 1740 mg/L static (Lepomis macrochirus) LC50 96 h: = 45 mg/L flow-through (Pimephales promelas) LC50 96 h: = 41 mg/L (Pimephales promelas)		EC50 48 h: = 0.95 mg/L (Daphnia magna)
Dipropylene glycol monomethyl ether 34590-94-8		LC50 96 h: > 10000 mg/L static (Pimephales promelas)		LC50 48 h: = 1919 mg/L (Daphnia magna)
Talc 14807-96-6		LC50 96 h: > 100 g/L semi-static (Brachydanio rerio)		
Naphthalene 91-20-3	EC50 72 h: = 0.4 mg/L (Skeletonema costatum)	LC50 96 h: 5.74 - 6.44 mg/L flow-through (Pimephales promelas) LC50 96 h: = 1.6 mg/L flow-through (Oncorhynchus mykiss) LC50 96 h: 0.91 - 2.82 mg/L static (Oncorhynchus mykiss) LC50 96 h: = 1.99 mg/L static (Pimephales promelas) LC50 96 h: = 31.0265 mg/L static (Lepomis macrochirus)		LC50 48 h: = 2.16 mg/L (Daphnia magna) EC50 48 h: = 1.96 mg/L Flow through (Daphnia magna) EC50 48 h: 1.09 - 3.4 mg/L Static (Daphnia magna)

Persistence and Degradability No information available.

Bioaccumulation

Chemical Name	Log Pow
Naphtha (petroleum), heavy aromatic	2.9 - 6.1
Dipropylene glycol monomethyl ether	-0.064
Naphthalene	3.3

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with federal, state, and local regulations

Contaminated Packaging Do not re-use empty containers.

US EPA Waste Number U165

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Naphthalene - 91-20-3	U165	Included in waste streams: F024, F025, F034, F039, K001, K035, K060, K087, K145		U165

Component	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes

Naphthalene 91-20-3 (1-5)			Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Naphthalene	Toxic

14. TRANSPORT INFORMATION

Note: According to 49 CRF §173.150(f)(1), this material should be reclassified as NA1993, Combustible Liquid, NOS if it is shipped in bulk.

DOT Not regulated

IATA Not regulated.

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

DSL Does not comply

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 contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Diethylene glycol monoethyl ether acetate	112-15-2	10-20	1.0
Naphthalene	91-20-3	1-5	0.1

SARA 311/312 Hazard Categories

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

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Naphthalene	100 lb	X	X	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Naphthalene	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ

U.S. State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	California Prop. 65
Naphthalene	91-20-3	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
Diethylene glycol monoethyl ether acetate	X		X	X	
Barium sulfate	X	X	X		
Dipropylene glycol monomethyl ether	X	X	X	X	X
Talc	X	X	X		X
Naphthalene	X	X	X	X	

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard** 1	**Flammability** 2	**Instability** 0	**Physical and Chemical Hazards** -
HMIS	**Health Hazard** 1*	**Flammability** 2	**Physical Hazard** 0	**Personal Protection** X

**Indicates a chronic health hazard.*

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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