

SAFETY DATA SHEET

Issuing Date 07-Jan-2016

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Revision Number 5

This document complies with the US OSHA Hazard Communication Standard (29 CFR 1910.1200), Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR), and Mexico's NMX-R-019-SC-2011.

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

GHS product identifier

Product Name PSR-4000 HFX All Colors

Other means of identification

Product Code(s) 400453, 400463, 400447, 400464, 400458, 400455, 400459, 400457, 400466

Synonyms PSR-4000 HFX Gloss Black, PSR-4000 HFX Matte Black, PSR-4000 HFX Matte Blue, PSR-4000 HFX Satin, PSR-4000 HFX Satin Black, PSR-4000 HFX Satin Blue, PSR-4000 HFX Satin Clear, PSR-4000 HFX Satin Red, PSR-4000 HFX Satin White

Recommended use of the chemical and restrictions on use

Recommended Use Solder mask part A

Uses advised against No information available

Supplier's details

Initial Supplier
Canadian address required

Supplier Address
Taiyo America, Inc.
2675 Antler Drive
Carson City, NV 89701
TEL: 775-885-9959 (M-F 8-4 PDT)

E-mail SDSinfo@taiyo-america.com

Emergency telephone number

Emergency Tel (In US) 1-800-255-3924

Emergency Tel (International) 1-813-248-0585

Contract # MIS0007979

2. HAZARDS IDENTIFICATION

Classification

This product is considered hazardous according to the criteria set within the US OSHA Hazard Communication Standard (29 CFR 1910.1200), Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR), and Mexico's NMX-R-019-SC-2011.

Reproductive Toxicity	Category 1B
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Label Elements

Danger

**Hazard Statements**

May damage fertility or the unborn child

Physical and Health Hazards Not Otherwise Classified

Not applicable.

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.

General Advice

- If exposed or concerned: Get medical attention/advice

Storage

- Store locked up.

Disposal

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

Other information

Harmful to aquatic life with long lasting effects.

76.56% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms

PSR-4000 HFX Gloss Black, PSR-4000 HFX Matte Black, PSR-4000 HFX Matte Blue, PSR-4000 HFX Satin, PSR-4000 HFX Satin Black, PSR-4000 HFX Satin Blue, PSR-4000 HFX Satin Clear, PSR-4000 HFX Satin Red, PSR-4000 HFX Satin White

Chemical Name	CAS-No	Weight %	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Barium sulfate	7727-43-7	25.7	-	-
Titanium dioxide	13463-67-7	23.71	-	-
Iron manganese oxide ((Fe,Mn)2O3)	75864-23-2	10.5	-	-
Silica	112945-52-5	5.21	-	-
Talc	14807-96-6	3.27	-	-
1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-	71868-10-5	2.91	-	-
Naphtha (petroleum), heavy aromatic	64742-94-5	2.09	-	-
Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide	75980-60-8	0.83	-	-
Dipropylene glycol monomethyl ether acetate	112-15-2	29.81	-	-

4. FIRST AID MEASURES

Description of necessary first-aid measures

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. Consult a physician if necessary.
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.

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 (CO₂). Dry chemical. Dry powder.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical No information available.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

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 Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Avoid release to the environment. 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 Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not eat, drink or smoke when using this product. Do not take internally. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

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/m ³ inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
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
Iron manganese oxide ((Fe,Mn)2O3) 75864-23-2	TWA: 1 mg/m ³ Fe TWA: 0.02 mg/m ³ Mn respirable particulate matter TWA: 0.1 mg/m ³ Mn inhalable particulate matter	(vacated) TWA: 1 mg/m ³ Fe (vacated) Ceiling: 5 mg/m ³ Ceiling: 5 mg/m ³ Mn	IDLH: 500 mg/m ³ Mn TWA: 1 mg/m ³ Fe TWA: 1 mg/m ³ Mn STEL: 3 mg/m ³ Mn
Silica 112945-52-5	-	(vacated) TWA: 6 mg/m ³ <1% Crystalline silica TWA: 20 mppcf : (80)/(%) SiO ₂ mg/m ³ TWA	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 containing no asbestos and <1% quartz TWA: 2 mg/m ³
Dipropylene glycol monomethyl ether acetate 112-15-2	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

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection 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 Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Viscous liquid.	Appearance	Varies.
Odor	Mild Solvent.	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	No data available	None known
Flash Point	107 °C	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	1.38	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	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 (%)	28
VOC (g/l)	360-440

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.

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	There is no data available for this product.

Eye Contact	Contact with eyes may cause irritation.
Skin Contact	There is no data available for this product.
Ingestion	May be harmful if swallowed.

Numerical measures of toxicity - Product

Unknown acute toxicity 76.56% 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 3190 mg/kg; Acute toxicity estimate

LD50 Dermal 38913 mg/kg; Acute toxicity estimate

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene glycol monoethyl ether acetate	= 11 g/kg (Rat)	= 15100 µL/kg (Rabbit)	-
Titanium dioxide	> 10000 mg/kg (Rat)	-	-
Silica	= 3160 mg/kg (Rat)	-	-
Naphtha (petroleum), heavy aromatic	> 5000 mg/kg (Rat)	> 2 mL/kg (Rabbit)	> 590 mg/m ³ (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

Respiratory or Skin Sensitization No information available.

Germ Cell Mutagenicity No information available.

Carcinogenicity 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	-	-
Silica		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. May damage fertility or the unborn child

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration Hazard No information available.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Harmful to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Silica 112945-52-5	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)		
Naphtha (petroleum), heavy	EC50 72 h: = 2.5 mg/L	LC50 96 h: = 1740 mg/L		EC50 48 h: = 0.95 mg/L

aromatic 64742-94-5	(Skeletonema costatum)	static (Lepomis macrochirus) LC50 96 h: = 19 mg/L static (Pimephales promelas) LC50 96 h: = 2.34 mg/L (Oncorhynchus mykiss) LC50 96 h: = 41 mg/L (Pimephales promelas) LC50 96 h: = 45 mg/L flow-through (Pimephales promelas)	(Daphnia magna)
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Persistence and Degradability No information available.

Bioaccumulation No information available.

Chemical Name	Log Pow
Naphtha (petroleum), heavy aromatic	6.1

Mobility No information available.

Other Adverse Effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Should not be released into the environment. Dispose of in accordance with local regulations.

Contaminated Packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

MEX Not regulated

IATA Not regulated.

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Regulations

Ozone depleting substances Not applicable
Persistent Organic Pollutants Not applicable
Hazardous Waste Not applicable
The Rotterdam Convention (Prior Informed Consent) Not applicable
International Convention for the Prevention of Pollution from Ships (MARPOL) Not applicable

International Inventories

TSCA Complies
DSL Not determined
EINECS Complies
ELINCS Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

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	29.81	1.0
Iron manganese oxide ((Fe,Mn)2O3)	75864-23-2	10.5	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	Yes
Fire Hazard	No
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
Ethylbenzene	100-41-4	Carcinogen
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
Barium sulfate	X	X	X		
Titanium dioxide	X	X	X		X
Silica	X	X	X		
Talc	X	X	X	X	X
Dipropylene glycol monomethyl ether acetate	X	X	X	X	X
Silica gel		X	X		
Xylene, mixed isomers	X	X	X	X	X
Ethylbenzene	X	X	X	X	X
Phosphoric acid	X	X	X		X
Naphthalene	X	X	X	X	
Isobutyl alcohol	X	X	X		X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazard 1	Flammability 1	Instability 0	Physical and Chemical Hazards -
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<u>HMIS</u>	Health Hazard 1*	Flammability 1	Physical Hazard 0	Personal Protection X
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**Indicates a chronic health hazard.*

Prepared By Product Stewardship
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Revision Note Fixed error

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