

# 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	-	-

### 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 (CO<sub>2</sub>). 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**

<b>Chemical Name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>	<b>NIOSH IDLH</b>
Barium sulfate 7727-43-7	TWA: 5 mg/m <sup>3</sup> inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	TWA: 10 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable dust
Titanium dioxide 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 10 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
Iron manganese oxide ((Fe,Mn)2O3) 75864-23-2	TWA: 1 mg/m <sup>3</sup> Fe TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	(vacated) TWA: 1 mg/m <sup>3</sup> Fe (vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> Mn	IDLH: 500 mg/m <sup>3</sup> Mn TWA: 1 mg/m <sup>3</sup> Fe TWA: 1 mg/m <sup>3</sup> Mn STEL: 3 mg/m <sup>3</sup> Mn
Silica 112945-52-5	-	(vacated) TWA: 6 mg/m <sup>3</sup> <1% Crystalline silica TWA: 20 mppcf : (80)/(%) SiO <sub>2</sub> mg/m <sup>3</sup> TWA	IDLH: 3000 mg/m <sup>3</sup> TWA: 6 mg/m <sup>3</sup>
Talc 14807-96-6	TWA: 2 mg/m <sup>3</sup>	(vacated) TWA: 2 mg/m <sup>3</sup>	IDLH: 1000 mg/m <sup>3</sup> containing no asbestos and <1% quartz TWA: 2 mg/m <sup>3</sup>
Dipropylene glycol monomethyl ether acetate 112-15-2	STEL: 150 ppm TWA: 100 ppm S*	TWA: 100 ppm TWA: 600 mg/m <sup>3</sup> (vacated) TWA: 100 ppm (vacated) TWA: 600 mg/m <sup>3</sup> (vacated) STEL: 150 ppm (vacated) STEL: 900 mg/m <sup>3</sup> (vacated) S* S*	IDLH: 600 ppm TWA: 100 ppm TWA: 600 mg/m <sup>3</sup> STEL: 150 ppm STEL: 900 mg/m <sup>3</sup>

### **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

<b>Physical State</b>	Viscous liquid.	<b>Appearance</b>	Varies.
<b>Odor</b>	Mild Solvent.	<b>Odor Threshold</b>	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 (CO<sub>2</sub>). 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 <sup>3</sup> ( 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 aromatic 64742-94-5	EC50 72 h: = 2.5 mg/L (Skeletonema costatum)	LC50 96 h: = 1740 mg/L static (Lepomis macrochirus) LC50 96 h: = 19 mg/L static		EC50 48 h: = 0.95 mg/L (Daphnia magna)

		(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)		
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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**

**NFPA**                      **Health Hazard** 1              **Flammability** 1              **Instability** 0              **Physical and Chemical Hazards** -

**HMIS**                      **Health Hazard** 1\*              **Flammability** 1              **Physical Hazard** 0              **Personal Protection** X  
*\*Indicates a chronic health hazard.*

**Prepared By**                      Product Stewardship  
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 Latham, NY 12110  
 1-800-572-6501

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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**