

Issuing Date 24-May-2015

Revision Date 15-Jun-2015

Revision Number 1

## Section 1. Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Product Code(s)** 400479, 400467, 400474, 400475, 400480, 400477, 400476, 800047

**Product Name** PSR-4000 GP01EU, PSR-4000 GP01EU (DG), PSR-4000 GP01EU Black, PSR-4000 GP01EU Blue, PSR-4000 GP01EU Clear, PSR-4000 GP01EU Red, PSR-4000 GP01EU White, PSR-4000 GP01EU Yellow

Contains 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Solder mask part A

**Uses advised against** No information available

### 1.3. Details of the supplier of the safety data sheet

#### Company

Taiyo America, Inc.  
2675 Antler Drive  
Carson City, NV 89701  
TEL: 775-885-9959

#### For further information, please contact

**E-mail Address** No information available.

### 1.4. Emergency telephone number

**Emergency Telephone Number** 775-885-9959

Europe	112
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## Section 2. Hazards identification

### 2.1. - Classification of the substance or mixture

#### REGULATION (EC) No 1272/2008

Reproductive Toxicity	Category 1B
Chronic Aquatic Toxicity	Category 3

#### Physical Hazards

None

### 2.2. Label Elements



Signal Word

Danger

### Hazard Statements

H360 - May damage fertility or the unborn child  
H412 - Harmful to aquatic life with long lasting effects

### Precautionary Statements

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P281 - Use personal protective equipment as required  
P308 + P313 - IF exposed or concerned: Get medical advice/ attention  
P405 - Store locked up  
P273 - Avoid release to the environment  
P501 - Dispose of contents/ container to an approved waste disposal plant

### 2.3. Other information

## Section 3. Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Chemical Name	EC-No	CAS-No	Weight %	EU - GHS Substance Classification	REACH No.
Barium sulfate	Present	7727-43-7	1-20		No data available
Silica, fused	262-373-8 424-440-1	60676-86-0	10-20		No data available
Titanium dioxide	236-675-5	13463-67-7	0-15		No data available
Iron manganese oxide ((Fe,Mn)2O3)	-	75864-23-2	0-15		No data available
1-Propanone, 2-methyl-1-[4-(methylthio)phenoxy]-2-(4-morpholinyl)-	Present	71868-10-5	5-10	Repr. 1B H360FD Acute Tox. 4 (H302) Aquatic Chronic 2 (H411)	No data available
Silicon dioxide	Present	7631-86-9	1-5		No data available
Dipropylene glycol monomethyl ether	252-104-2	34590-94-8	1-5		No data available
Naphtha (petroleum), heavy aromatic	Present	64742-94-5	<= 0.1	Asp. Tox. 1 (H304) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available

For the full text of the H-Statements mentioned in this Section, see Section 16

## Section 4. First aid measures

### 4.1. Description of 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.

<b>Skin Contact</b>	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician if necessary.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Drink plenty of water. If symptoms persist, call a physician.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.
<b>Protection of First-aiders</b>	Use personal protective equipment.

**4.2. Most important symptoms and effects, both acute and delayed**

**Most Important Symptoms/Effects** No information available.

**4.3. Indication of immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

**Section 5. Fire-fighting measures**

**5.1. Extinguishing media**

**Suitable Extinguishing Media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Dry powder.

**Extinguishing media which must not be used for safety reasons**

No information available.

**5.2. Special hazards arising from the substance or mixture**

**Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases**

None in particular.

**5.3. Advice for firefighters**

**Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear.

**Section 6. Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

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

**6.2. 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.

**6.3. Methods and materials for containment and cleaning up**

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

**6.4. Reference to other sections**

See Section 12 for additional information.

**Section 7. Handling and storage**

**7.1. Precautions for Safe Handling**

### Handling

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.

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

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

### 7.3. Specific end use(s)

#### Exposure Scenario

No information available.

#### Other Guidelines

No information available.

## Section 8. Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure Limits

Chemical Name	EU	The United Kingdom	France	Spain	Germany
Barium sulfate 7727-43-7		STEL: 30 mg/m <sup>3</sup> STEL: 12 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>		TWA: 10 mg/m <sup>3</sup>	TWA: 4 mg/m <sup>3</sup> TWA: 1.5 mg/m <sup>3</sup> Ceiling / Peak: 4 mg/m <sup>3</sup>
Silica, fused 60676-86-0		STEL: 0.24 mg/m <sup>3</sup> TWA: 0.08 mg/m <sup>3</sup>		VLA-ED: 0.1 mg/m <sup>3</sup>	MAK: 0.3 mg/m <sup>3</sup> TWA: 0.3 mg/m <sup>3</sup>
Titanium dioxide 13463-67-7		STEL: 30 mg/m <sup>3</sup> STEL: 12 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	VME: 10 mg/m <sup>3</sup>	VLA-ED: 10 mg/m <sup>3</sup>	
Iron manganese oxide ((Fe,Mn)2O3) 75864-23-2		TWA: 0.5 mg/m <sup>3</sup>		VLA-ED: 1 mg/m <sup>3</sup> VLA-ED: 0.2 mg/m <sup>3</sup>	MAK: 0.2 mg/m <sup>3</sup> MAK: 0.02 mg/m <sup>3</sup> Ceiling / Peak: 1.6 mg/m <sup>3</sup> Ceiling / Peak: 0.16 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>
Silicon dioxide 7631-86-9		STEL: 18 mg/m <sup>3</sup> STEL: 7.2 mg/m <sup>3</sup> TWA: 6 mg/m <sup>3</sup> TWA: 2.4 mg/m <sup>3</sup>			TWA: 4 mg/m <sup>3</sup>
Dipropylene glycol monomethyl ether 34590-94-8	S* TWA 50 ppm TWA 308 mg/m <sup>3</sup>	STEL: 150 ppm STEL: 924 mg/m <sup>3</sup> TWA: 50 ppm TWA: 308 mg/m <sup>3</sup> Skin	VME: 50 ppm VME: 308 mg/m <sup>3</sup>	S* VLA-ED: 50 ppm VLA-ED: 308 mg/m <sup>3</sup>	MAK: 50 ppm MAK: 310 mg/m <sup>3</sup> Ceiling / Peak: 50 ppm Ceiling / Peak: 310 mg/m <sup>3</sup> TWA: 50 ppm TWA: 310 mg/m <sup>3</sup>
<b>Component</b>	<b>Italy</b>	<b>Portugal</b>	<b>The Netherlands</b>	<b>Finland</b>	<b>Denmark</b>
Barium sulfate 7727-43-7 ( 1-20 )		TWA: 10 mg/m <sup>3</sup>			
Silica, fused 60676-86-0 ( 10-20 )					TWA: 0.1 mg/m <sup>3</sup>

Titanium dioxide 13463-67-7 ( 0-15 )		TWA: 10 mg/m <sup>3</sup>			TWA: 6 mg/m <sup>3</sup>
Iron manganese oxide ((Fe,Mn)2O3) 75864-23-2 ( 0-15 )		TWA: 1 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>		TWA: 1 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>
Silicon dioxide 7631-86-9 ( 1-5 )				TWA: 5 mg/m <sup>3</sup>	
Dipropylene glycol monomethyl ether 34590-94-8 ( 1-5 )	TWA: 50 ppm TWA: 308 mg/m <sup>3</sup> Skin	STEL: 150 ppm TWA: 100 ppm	TWA: 300 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 310 mg/m <sup>3</sup> Skin	TWA: 50 ppm TWA: 300 mg/m <sup>3</sup> Skin
<b>Chemical Name</b>	<b>Austria</b>	<b>Switzerland</b>	<b>Poland</b>	<b>Norway</b>	<b>Ireland</b>
Barium sulfate 7727-43-7				TWA: 0.5 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> STEL: 6 mg/m <sup>3</sup>
Silica, fused 60676-86-0	MAK: 0.3 mg/m <sup>3</sup>	MAK: 0.3 mg/m <sup>3</sup>	NDS: 2.0 mg/m <sup>3</sup> NDS: 1.0 mg/m <sup>3</sup>		TWA: 0.08 mg/m <sup>3</sup>
Titanium dioxide 13463-67-7	STEL 10 mg/m <sup>3</sup> MAK: 5 mg/m <sup>3</sup>	MAK: 3 mg/m <sup>3</sup>	NDSch: 30 mg/m <sup>3</sup> NDS: 10.0 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>
Iron manganese oxide ((Fe,Mn)2O3) 75864-23-2	STEL 2 mg/m <sup>3</sup> MAK: 0.5 mg/m <sup>3</sup>	MAK: 1 mg/m <sup>3</sup> MAK: 0.5 mg/m <sup>3</sup>	NDS: 0.3 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> STEL: 3 ppm STEL: 0.3 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>
Silicon dioxide 7631-86-9	TWA: 4 mg/m <sup>3</sup> TWA: 0.3 mg/m <sup>3</sup>	TWA: 4 mg/m <sup>3</sup> TWA: 0.3 mg/m <sup>3</sup>		TWA: 1.5 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	TWA: 6 mg/m <sup>3</sup> TWA: 2.4 mg/m <sup>3</sup>
Dipropylene glycol monomethyl ether 34590-94-8	Skin STEL 100 ppm STEL 614 mg/m <sup>3</sup> MAK: 50 ppm MAK: 307 mg/m <sup>3</sup>	STEL: 50 ppm STEL: 300 mg/m <sup>3</sup> MAK: 50 ppm MAK: 300 mg/m <sup>3</sup>	NDSch: 480 mg/m <sup>3</sup> NDS: 240 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 300 mg/m <sup>3</sup> Skin STEL: 75 ppm STEL: 375 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 308 mg/m <sup>3</sup> Skin

<b>Chemical Name</b>	<b>European Union</b>	<b>United Kingdom</b>	<b>France</b>	<b>Spain</b>	<b>Germany</b>
Iron manganese oxide ((Fe,Mn)2O3) 75864-23-2					20 µg/L whole blood end of shift Manganese 20 µg/L whole blood end of several shifts Manganese for long-term exposures
<b>Chemical Name</b>	<b>Austria</b>	<b>Switzerland</b>	<b>Poland</b>	<b>Norway</b>	<b>Ireland</b>
Iron manganese oxide ((Fe,Mn)2O3) 75864-23-2		20 µg/L whole blood end of shift, and after several shifts (for long-term exposures) Manganese Q			

**Derived No Effect Level** No information available  
**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls**

**Engineering Measures** Ensure adequate ventilation, especially in confined areas.  
**Personal protective equipment**  
**Eye Protection** Safety glasses with side-shields.  
**Skin and Body Protection** Lightweight protective clothing.  
**Hand Protection** Impervious gloves.  
**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## Section 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical State	Viscous liquid	Appearance	Varies.
Odor	Mild Solvent		

<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	105 °C	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Relative Density	1.47	at 20 °C
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	

### 9.2. Other information

VOC Content (%)	21
VOC (g/l)	307
Flammability Limits in Air	No data available

## Section 10. Stability and reactivity

### 10.1. Reactivity

No data available.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

None under normal processing.

### 10.4. Conditions to avoid

Incompatible products.

### 10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO). Sulfur oxides.

## Section 11. Toxicological information

### 11.1. Information on toxicological effects

**Acute Toxicity**

**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**

May be harmful if swallowed.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Titanium dioxide	> 10000 mg/kg ( Rat )		
Silicon dioxide	> 5000 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	>2.2 mg/L ( Rat ) 4 h
Dipropylene glycol monomethyl ether	= 5230 mg/kg ( Rat )	= 9500 mg/kg ( Rabbit )	
Naphtha (petroleum), heavy aromatic	> 5000 mg/kg ( Rat )	> 2 mL/kg ( Rabbit )	> 590 mg/m <sup>3</sup> ( Rat ) 4 h

**Sensitization**

No information available.

**Mutagenic Effects**

No information available.

**Carcinogenic Effects**

No information available.

**Reproductive Toxicity**

Contains a known or suspected reproductive toxin. May damage fertility or the unborn child

**Developmental Toxicity**

No information available.

**STOT - single exposure**

No information available.

**STOT - repeated exposure**

No information available.

**Target Organ Effects**

Central nervous system (CNS). Eyes. Respiratory system. Skin.

**Aspiration Hazard**

No information available.

**Section 12. Ecological information**

**12.1. Toxicity**

**Ecotoxicity Effects**

Harmful to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Silicon dioxide	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)
Dipropylene glycol monomethyl ether		LC50 96 h: > 10000 mg/L static (Pimephales promelas)		LC50 48 h: = 1919 mg/L (Daphnia magna)
Naphtha (petroleum), heavy aromatic	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)

**12.2. Persistence and degradability**

No information available.

### 12.3. Bioaccumulative potential.

No information available.

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

### 12.4. Mobility in soil

Adsorbs on soil.

### 12.5. Results of PBT and vPvB assessment

No information available.

### 12.6. Other adverse effects

This product does not contain any known or suspected endocrine disruptors.

## Section 13. Disposal considerations

### 13.1. Waste treatment methods

#### **Waste from Residues / Unused Products**

Dispose of in accordance with local regulations.

#### **Contaminated Packaging**

Empty containers should be taken to an approved waste handling site for recycling or disposal.

#### **Other Information**

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

## Section 14. Transport information

### IMDG/IMO

14.1. UN-Number	Not regulated.
14.2. Proper Shipping Name	Not regulated.
14.3. Hazard Class	Not regulated.
14.4. Packing Group	Not regulated.
Description	Not applicable.
14.5. Marine Pollutant	None.
14.6. Special Provisions	None.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available.

### RID

14.1. UN-Number	Not regulated.
14.2. Proper Shipping Name	Not regulated.
14.3. Hazard Class	Not regulated.
14.4. Packing Group	Not regulated.
Description	Not applicable.
14.5. Environmental hazard	None.



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<b>14.6. Special Provisions</b>	None.
<b>ADR</b>	
<b>14.1. UN-Number</b>	Not regulated.
<b>14.2. Proper Shipping Name</b>	Not regulated.
<b>14.3. Hazard Class</b>	Not regulated.
<b>14.4. Packing Group</b>	Not regulated.
<b>Description</b>	Not applicable.
<b>14.5. Environmental hazard</b>	None.
<b>14.6. Special Provisions</b>	None.

<b>ICAO</b>	
<b>14.1. UN-Number</b>	Not regulated.
<b>14.2. Proper shipping name</b>	Not regulated.
<b>14.3. Hazard Class</b>	Not regulated.
<b>14.4. Packing Group</b>	Not regulated.
<b>Description</b>	Not applicable.
<b>14.5. Environmental hazard</b>	None.
<b>14.6. Special Provisions</b>	None.

<b>IATA</b>	
<b>14.1. UN-Number</b>	Not regulated.
<b>14.2. Proper Shipping Name</b>	Not regulated.
<b>14.3. Hazard Class</b>	Not regulated.
<b>14.4. Packing Group</b>	Not regulated.
<b>Description</b>	Not applicable.
<b>14.5. Environmental hazard</b>	None.
<b>14.6. Special Provisions</b>	None.

## Section 15. Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### International Inventories

<b>TSCA</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>DSL/NDSL</b>	-
<b>PICCS</b>	-
<b>ENCS</b>	-
<b>IECSC</b>	-
<b>AICS</b>	-
<b>KECL</b>	-

#### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances

### 15.2. Chemical Safety Assessment

No information available

## Section 16. Other information

### Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed  
H411 - Toxic to aquatic life with long lasting effects  
H360 - May damage fertility or the unborn child  
H360FD - May damage fertility. May damage the unborn child  
H412 - Harmful to aquatic life with long lasting effects  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H304 - May be fatal if swallowed and enters airways

### Key literature references and sources for data

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

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Revision Note	(M)SDS sections updated: 3.

This safety data sheet complies with the requirements of Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No. 1907/2006

### 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