# SAFETY DATA SHEET

**Issuing Date** 24-May-2015 **Revision Date** 24-May-2015 **Revision Number** 0

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

**1.1. Product identifier**

**Product Code(s)** 400425, 400429, 400031

**Product Name** **PSR-4000 MP Green, PSR-4000 MP Black, PIHP-200 Part A**

Contains Quartz, 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 |

## Section 2. Hazards identification

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

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

| | |
|---|---|
| Acute Oral Toxicity | Category 4 |
| Reproductive Toxicity | Category 1B |
| Chronic Aquatic Toxicity | Category 3 |

**Physical Hazards**

| |
|---|
| None |

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

**Symbol(s)** T - Toxic
**R-code(s)** Carc. cat. 1;R49 - Repr. cat. 1;R60 - Repr. cat. 1;R61 - Xn;R48/20 - R52-53

*For the full text of the R-phrases mentioned in this Section, see Section 16*

**2.2. Label Elements**

**Signal Word** **Danger**

**Hazard Statements**
H302 - Harmful if swallowed
H360 - May damage fertility or the unborn child
H412 - Harmful to aquatic life with long lasting effects
EUH210 - Safety data sheet available on request

**Precautionary Statements**
P270 - Do not eat, drink or smoke when using this product
P201 - Obtain special instructions before use
P281 - Use personal protective equipment as required
P308 + P313 - IF exposed or concerned: Get medical advice/ attention
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 % | Classification | EU - GHS Substance Classification | REACH No. |
|---|---|---|---|---|---|---|
| Quartz | Present | 14808-60-7 | 30-60 | - | STOT RE 2 (H373) | No data available |
| Dipropylene glycol monomethyl ether | Present | 34590-94-8 | 5-10 | - | | No data available |
| 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)- | Present | 71868-10-5 | 1-5 | R60<br>R61<br>Xn; R22<br>N; R51-53 | Repr. 1B H360FD<br>Acute Tox. 4 (H302)<br>Aquatic Chronic 2 (H411) | No data available |
| Silicon dioxide | Present | 7631-86-9 | 0-5 | - | | No data available |

**For the full text of the R-phrases mentioned in this Section, see Section 16**
**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.

| | |
|---|---|
| **Skin Contact** | Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Consult a physician if necessary. |
| **Ingestion** | Do NOT induce vomiting. Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. |
| **Inhalation** | Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician. |
| **Protection of First-aiders** | 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 ($CO_2$). 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**
Combustible material. Vapors may travel to source of ignition and flash back.

### 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

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.

### 6.2. 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.

### 6.3. Methods and materials for containment and 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.

### 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. 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. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Do not take internally.

**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. Wash thoroughly after handling.

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

### 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 |
|---|---|---|---|---|---|
| Quartz<br>14808-60-7 | | STEL: 0.3 mg/m³<br>TWA: 0.1 mg/m³ | TWA: 0.1 mg/m³ | TWA: 0.1 mg/m³ | |
| Dipropylene glycol monomethyl ether<br>34590-94-8 | S*<br>TWA 50 ppm<br>TWA 308 mg/m³ | STEL: 150 ppm<br>STEL: 924 mg/m³<br>TWA: 50 ppm<br>TWA: 308 mg/m³<br>Skin | TWA: 50 ppm<br>TWA: 308 mg/m³ | S*<br>TWA: 50 ppm<br>TWA: 308 mg/m³ | TWA: 50 ppm<br>TWA: 310 mg/m³<br>Ceiling / Peak: 50 ppm<br>Ceiling / Peak: 310 mg/m³ |
| Silicon dioxide<br>7631-86-9 | | STEL: 18 mg/m³<br>STEL: 7.2 mg/m³<br>TWA: 6 mg/m³<br>TWA: 2.4 mg/m³ | | | TWA: 4 mg/m³ |

| Component | Italy | Portugal | The Netherlands | Finland | Denmark |
|---|---|---|---|---|---|
| Quartz<br>14808-60-7 ( 30-60 ) | | TWA: 0.025 mg/m³ | TWA: 0.075 mg/m³ | TWA: 0.05 mg/m³ | TWA: 0.3 mg/m³<br>TWA: 0.1 mg/m³ |
| Dipropylene glycol monomethyl ether<br>34590-94-8 ( 5-10 ) | TWA: 50 ppm<br>TWA: 308 mg/m³<br>Skin | STEL: 150 ppm<br>TWA: 100 ppm | TWA: 300 mg/m³ | TWA: 50 ppm<br>TWA: 310 mg/m³<br>Skin | TWA: 50 ppm<br>TWA: 309 mg/m³<br>Skin |
| Silicon dioxide<br>7631-86-9 ( 0-5 ) | | | | TWA: 5 mg/m³ | |

| Chemical Name | Austria | Switzerland | Poland | Norway | Ireland |
|---|---|---|---|---|---|
| Quartz<br>14808-60-7 | TWA: 0.15 mg/m³ | TWA: 0.15 mg/m³ | TWA: 2 mg/m³<br>TWA: 0.3 mg/m³<br>TWA: 4.0 mg/m³<br>TWA: 1.0 mg/m³ | TWA: 0.3 mg/m³<br>TWA: 0.1 mg/m³<br>STEL: 0.9 mg/m³<br>STEL: 0.3 mg/m³ | TWA: 0.1 mg/m³<br>STEL: 0.3 mg/m³ |
| Dipropylene glycol monomethyl ether<br>34590-94-8 | Skin<br>STEL 100 ppm<br>STEL 614 mg/m³<br>TWA: 50 ppm<br>TWA: 307 mg/m³ | STEL: 50 ppm<br>STEL: 300 mg/m³<br>TWA: 50 ppm<br>TWA: 300 mg/m³ | STEL: 480 mg/m³<br>TWA: 240 mg/m³ | TWA: 50 ppm<br>TWA: 300 mg/m³<br>Skin<br>STEL: 75 ppm<br>STEL: 375 mg/m³ | TWA: 50 ppm<br>TWA: 308 mg/m³<br>Skin |

| | | | | | |
|---|---|---|---|---|---|
| Silicon dioxide<br>7631-86-9 | TWA: 4 mg/m³<br>TWA: 0.3 mg/m³ | TWA: 4 mg/m³<br>TWA: 0.3 mg/m³ | | TWA: 1.5 mg/m³<br>STEL: 3 mg/m³ | TWA: 6 mg/m³<br>TWA: 2.4 mg/m³ |

**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** Green or Black
**Odor** Mild Solvent

| 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** | 78 °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** | 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** | 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 (%)** 20
**VOC (g/l)** 293
**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. Heat, flames and sparks.

**10.5. Incompatible materials**
Strong oxidizing agents. Strong acids. Strong bases.

**10.6. Hazardous decomposition products**
Carbon dioxide ($CO_2$). 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** Harmful if swallowed.

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Quartz | = 500 mg/kg ( Rat ) | | |
| Dipropylene glycol monomethyl ether | = 5230 mg/kg ( Rat ) | = 9500 mg/kg ( Rabbit ) | |
| Silicon dioxide | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | >2.2 mg/L ( Rat ) 4 h |

**Sensitization** No information available.
**Mutagenic Effects** No information available.
**Carcinogenic Effects** This product contains crystalline silica (quartz) in a non-respirable form. Inhalation of crystalline silica is unlikely to occur from exposure to this product

**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** Blood. Central nervous system (CNS). Central vascular system (CVS). Eyes. Gastrointestinal tract (GI). Kidney. Liver. Lungs. 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) |
|---|---|---|---|---|
| Dipropylene glycol monomethyl ether | | LC50 96 h: > 10000 mg/L static (Pimephales promelas) | | LC50 48 h: = 1919 mg/L (Daphnia magna) |
| 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) |

### 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential.

| Chemical Name | Log Pow |
|---|---|
| Dipropylene glycol monomethyl ether | -0.064 |

### 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.

## 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.
**14.6. Special Provisions** None.

**ADR**

**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. |
| **14.6. Special Provisions** | None. |

**ICAO**

| | |
|---|---|
| **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. |
| **14.6. Special Provisions** | None. |

**IATA**

| | |
|---|---|
| **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. |
| **14.6. Special Provisions** | None. |

## Section 15. Regulatory information

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

**International Inventories**

| | |
|---|---|
| **TSCA** | Complies |
| **EINECS/ELINCS** | Complies |
| **DSL/NDSL** | - |
| **PICCS** | - |
| **ENCS** | - |
| **IECSC** | - |
| **AICS** | - |
| **KECL** | - |

**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 R-phrases referred to under Sections 2 and 3**
R49 - May cause cancer by inhalation
R60 - May impair fertility
R61 - May cause harm to the unborn child
R22 - Harmful if swallowed

R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**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
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled
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
EUH210 - Safety data sheet available on request

**Key literature references and sources for data**
www.ChemADVISOR.com/

| | |
|---|---|
| **Issuing Date** | 24-May-2015 |
| **Revision Date** | 24-May-2015 |
| **Revision Note** | Initial Release. |

**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**