SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Magnetic Sputter/Vacuum Deposition (MSVD) Coated Float Glass
Product code : 01050
EC number : Not available.
CAS number : Not available.
Product type : Article
Other means of identification : This (M)SDS covers all PPG MSVD Low-E coated glass products including, but not limited to: Sungate® 400, Sungate® 400VT, Sungate® 460, Sungate® 460VT, Solarban® z50, Solarban® z50VT, Solarban® 60, Solarban® 60VTII, Solarban® 67, Solarban® 67VT, Solarban® 70XL, Solarban® 70XLT, Solarban® 72VT, Solarban® R100VT, Solarban® z75, Solarban® z75VT, Solarban® 90, Solarban® 90VT, Solarphire™ HVM.

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

<table>
<thead>
<tr>
<th>Identified uses</th>
<th>Uses advised against</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction materials (building materials) - Other construction materials</td>
<td>None identified.</td>
<td></td>
</tr>
</tbody>
</table>

Product use : Glass.

1.3 Details of the supplier of the safety data sheet

Sigma Paint Saudi Arabia Ltd.
PO Box 7509
Dammam 31472
Saudi Arabia
Tel: 00966 38 47 31 00
Fax: 00966 38 47 17 34

PPG Industries, Inc.
One PPG Place
Pittsburgh
PA 15272
USA

e-mail address of person responsible for this SDS : ndpic@sfda.gov.sa

1.4 Emergency telephone number : +966 1 2759222
+1 412 434 4515

Date of issue/Date of revision : 27 April 2016
Version : 1

English (GB) United Arab Emirates 1/11
SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : This product is considered an article. The end use is dependent upon the manufactured shape and design, and this article will not pose an exposure hazard under normal conditions. Sanding and grinding this article can generate nuisance dust particles. Sanding and grinding dusts May be irritating to eyes and respiratory system.

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements
Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

Supplemental label elements
Safety data sheet available on request.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Not applicable.

Special packaging requirements
Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : Not available.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not available.

Other hazards which do not result in classification : None known.
SECTION 3: Composition/information on ingredients

3.1 Substances

This product is considered an article. The end use is dependent upon the manufactured shape and design, and this article will not pose an exposure hazard under normal conditions. Sanding and grinding this article can generate nuisance dust particles. Sanding and grinding dusts may be irritating to eyes and respiratory system.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>% by weight</th>
<th>Classification</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals</td>
<td>EC: 266-046-0 CAS: 65997-17-3</td>
<td>50 - 100</td>
<td>Not classified.</td>
<td>[A]</td>
</tr>
</tbody>
</table>

See Section 16 for the full text of the H statements declared above.

Composition consisting primarily of oxides of silicon with lesser quantities of other selected oxides common to soda-lime glasses, fused into an amorphous vitreous state.

Note: Glass sheets are typically stacked for shipment and may be separated with less than 1 weight percent of powdered interleaving material consisting of polymeric beads. Exposure to these polymeric beads is not expected to be a concern. MSVD glass may contain TPO (Temporary Protective Overcoat) made of polyvinyl alcohol. TPO is applied only to VT product versions. Exposure to polyvinyl alcohol is not expected to be a concern.

These coated glass products contain less than 0.1% of the following intentionally added metals (specific metals depend on product): silver, tin, zinc, nickel, chromium, aluminum, titanium and/or iron. Activities that generate dust from these coated glass products should be evaluated to determine if any regulatory exposure limits are exceeded. If exposure limits are exceeded for dust/metal, appropriate engineering controls (e.g., ventilation/HEPA filters) and/or personal protective equipment (e.g., respirators) should be provided.

Type
[A] Constituent
[B] Impurity
[C] Stabilising additive

SUB codes represent substances without registered CAS Numbers.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact: (Sanding and grinding dusts) In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Check for and remove any contact lenses.

Inhalation: None known.

Skin contact: None known.

Ingestion: Not a likely route of exposure.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: (Sanding and grinding dusts) No significant irritation expected other than possible mechanical irritation.

Inhalation: (Sanding and grinding dusts) May cause slight transient irritation.

Skin contact: (Sanding and grinding dusts) No significant irritation expected other than possible mechanical irritation.

Ingestion: Not a likely route of exposure.

Over-exposure signs/symptoms

Eye contact: No specific data.

Inhalation: No specific data.

Skin contact: No specific data.
SECTION 4: First aid measures

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : No specific fire or explosion hazard.

Hazardous combustion products : No specific data.

5.3 Advice for firefighters

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : No special protection is required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No special protection is required.

For emergency responders : No special protection is required.

6.2 Environmental precautions : No specific hazard.

6.3 Methods and material for containment and cleaning up

Small spill : Vacuum or sweep up material and place in a designated, labelled waste container.

Large spill : Vacuum or sweep up material and place in a designated, labelled waste container.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling
SECTION 7: Handling and storage

Protective measures: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Take care with items that are sharp or heavy. Any glass can have sharp edges, particularly at a cut or fractured edge. Normal strength glass, also known as annealed or float glass, is known to fracture into large sections with sharp edges. Chemically strengthened or chemically tempered glass will tend to fracture much the same as normal strength glass. Thermally tempered glass (commonly found in automotive side and rear windows) will fracture into a large number of very small pieces capable of cutting skin, but typically not as deep as would a large sharp fragment of normal strength glass. These safety concerns should be addressed with proper personal protective equipment to protect oneself against any sharp edges, including those formed by accidental glass fracture during handling. Sanding (a.k.a. seaming or edging) any sharp glass edges to produce rounded edges also reduces the hazards with being cut by sharp edges.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities: Store in a dry place away from excessive moisture and exhaust fumes from fork trucks or other such equipment. Support glass in cases on both sides when stored vertically. Glass packs and open cases should be stored at a 5° lean angle to prevent glass from falling forward.

7.3 Specific end use(s) Recommendations: Building and construction work

Industrial sector specific solutions: Industrial and Professional use

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Sanding and grinding dusts

ACGIH TLV (United States).

- TWA: 5 mg/m³, (Inhalable)
- TWA: 3 mg/m³ Form: Respirable
- TWA: 10 mg/m³ Form: Total dust

ACGIH TLV (United States, 3/2015).

- TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
**SECTION 8: Exposure controls/personal protection**

### 8.2 Exposure controls

#### Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. When grinding for removal of the MSVD coating, inhalation of silver containing coating dust should be prevented by using a localized exhaust ventilation system to remove the silver particulate being removed. The ventilation system should be equipped with a HEPA (High Efficiency Particulate Air) filter with efficiency greater than 99.9%.

#### Individual protection measures

### Hygiene measures

Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

### Eye/face protection

Safety glasses with side shields.

### Respiratory protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Rubber dipped anti-lacerative gloves are recommended.

### Personal protective equipment for the body

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

### Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

### Respiratory protection

(Sanding and grinding dusts) If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

### Environmental exposure controls

Not applicable.

**SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

#### Appearance

- **Physical state**: Solid.
- **Colour**: Clear./Colourless. to tinted
- **Odour**: Odourless.
- **Odour threshold**: Not applicable.
- **pH**: Not applicable.
- **Initial boiling point and boiling range**: Not available.
- **Flash point**: Closed cup: Not applicable. [Product does not sustain combustion.]
- **Evaporation rate**: Not applicable.
- **Material supports combustion**: No.
- **Flammability (solid, gas)**: Not applicable
- **Upper/lower flammability or explosive limits**: Not applicable.
- **Relative density**: 2.45
SECTION 9: Physical and chemical properties

Solubility(ies) : Not available.
Partition coefficient: n-octanol/ water : Not applicable.
Auto-ignition temperature : Not available.
Decomposition temperature : Not applicable.
Viscosity : Kinematic (40°C): Not applicable.
Explosive properties : Not available.
Oxidising properties : Not available.

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability : The product is stable.
10.3 Possibility of hazardous reactions : Not applicable.
10.4 Conditions to avoid : No specific data.
   Refer to protective measures listed in sections 7 and 8.
10.5 Incompatible materials : No specific data.
10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
   Acute toxicity
      Conclusion/Summary : Not applicable.
   Irritation/Corrosion
      Conclusion/Summary : Not available.
   Sensitisation
      Conclusion/Summary : Not available.
   Mutagenicity
      Conclusion/Summary : Not available.
   Carcinogenicity
      Conclusion/Summary : Not available.
   Reproductive toxicity
      Conclusion/Summary : Not available.
   Teratogenicity
      Conclusion/Summary : Not available.
   Specific target organ toxicity (single exposure) : Not available.
   Specific target organ toxicity (repeated exposure) : Not available.
SECTION 11: Toxicological information

Aspiration hazard
Not available.

Information on likely routes of exposure
: Not available.

Potential acute health effects

Inhalation
: (Sanding and grinding dusts) May cause slight transient irritation.

Ingestion
: Not a likely route of exposure.

Skin contact
: (Sanding and grinding dusts) No significant irritation expected other than possible mechanical irritation.

Eye contact
: (Sanding and grinding dusts) No significant irritation expected other than possible mechanical irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation
: No specific data.

Ingestion
: No specific data.

Skin contact
: No specific data.

Eye contact
: No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects
: Not available.

Potential delayed effects
: Not available.

Long term exposure

Potential immediate effects
: Not available.

Potential delayed effects
: Not available.

Potential chronic health effects
Not available.

Conclusion/Summary
: Not applicable.

General
: No known significant effects or critical hazards.

Carcinogenicity
: No known significant effects or critical hazards.

Mutagenicity
: No known significant effects or critical hazards.

Teratogenicity
: No known significant effects or critical hazards.

Developmental effects
: No known significant effects or critical hazards.

Fertility effects
: No known significant effects or critical hazards.

Other information
: Not available.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

SECTION 12: Ecological information

12.1 Toxicity

Conclusion/Summary
: Not available.

12.2 Persistence and degradability

Conclusion/Summary
: Not available.

12.3 Bioaccumulative potential
Not available.
SECTION 12: Ecological information

12.4 Mobility in soil
   Soil/water partition coefficient ($K_{oc}$) : Not available.
   Mobility : Not available.

12.5 Results of PBT and vPvB assessment
   PBT : Not available.
       P: Not available. B: Not available. T: Not available.
   vPvB : Not available.
       vP: Not available. vB: Not available.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product
   Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Glass products with MSVD coatings and silver containing dusts generated during grinding removal of the MSVD coating may be recycled. The disposal requirements for waste dust should be based upon testing conducted in accordance with federal, provincial, state, and local requirements.

Hazardous waste : Yes.

European waste catalogue (EWC)

<table>
<thead>
<tr>
<th>Waste code</th>
<th>Waste designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 11 00</td>
<td>wastes from manufacture of glass and glass products</td>
</tr>
</tbody>
</table>

Packaging
   Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

<table>
<thead>
<tr>
<th>Type of packaging</th>
<th>European waste catalogue (EWC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container</td>
<td>15 01 01 paper and cardboard packaging</td>
</tr>
</tbody>
</table>

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

<table>
<thead>
<tr>
<th></th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
SECTION 14: Transport information

14.5 Environmental hazards
Marine pollutant substances

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>No.</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Additional information

ADR/RID : None identified.
IMDG : None identified.
IATA : None identified.

Special precautions for user : -

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)
Annex XIV - List of substances subject to authorisation
   Annex XIV
   None of the components are listed.
   Substances of very high concern
   None of the components are listed.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
   Not applicable.

15.2 Chemical safety assessment
   : No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms
   : ATE = Acute Toxicity Estimate
   : CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
   : DNEL = Derived No Effect Level
   : EUH statement = CLP-specific Hazard statement
   : PNEC = Predicted No Effect Concentration
   : RRN = REACH Registration Number

Full text of abbreviated H statements : Not applicable.
Full text of classifications [CLP/GHS] : Not applicable.

History
   Date of issue/ Date of revision : 27 April 2016
   Date of previous issue : No previous validation
   Prepared by : EHS
   Version : 1

English (GB) United Arab Emirates 10/11
SECTION 16: Other information

Other information: Solarphire is a trademark of PPG Industries Ohio, Inc.

Sungate, Solarban, and the PPG logo are registered trademarks of PPG Industries Ohio, Inc.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by us, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.