Section 1. Identification

Product code : 01050
Product name : Magnetic Sputter/Vacuum Deposition (MSVD) Coated Float Glass
Product name : 产品名称
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® 70XLVT, Solarban® 72VT, Solarban® R100VT, Solarban® z75, Solarban® z75VT, Solarban® 90, Solarban® 90VT, Solarphire™ HVM.

Product type : Article

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

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

Supplier's details : PPG Industries, Inc.
: One PPG Place
: Pittsburgh, PA 15272

Emergency telephone number (with hours of operation) : 86 532 83889090
: +1 412 434 4515

Section 2. Hazards identification

Classification of the substance or mixture : Not classified.

GHS 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.

Other hazards which do not result in classification : None known.
Section 2. Hazards identification

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>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® 70XLVT, Solarban® 72VT, Solarban® R100VT, Solarban® z75, Solarban® z75VT, Solarban® 90, Solarban® 90VT, Solarphire™ HVM.</td>
</tr>
</tbody>
</table>

CAS number/other identifiers

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals</td>
<td>60 - 100</td>
<td>65997-17-3</td>
</tr>
</tbody>
</table>

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.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SUB codes represent substances without registered CAS Numbers.

Section 4. First aid measures

Description of necessary first aid measures

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>(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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>None known.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>None known.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Not a likely route of exposure.</td>
</tr>
</tbody>
</table>

Most important symptoms/effects, acute and delayed

Potential acute health effects
Section 4. First aid measures

**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**

<table>
<thead>
<tr>
<th>Over-exposure signs/symptoms</th>
<th>Notes to physician</th>
<th>Specific treatments</th>
<th>Protection of first-aiders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>No specific data.</td>
<td>No specific treatment.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No specific data.</td>
<td>No specific treatment.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No specific data.</td>
<td>No specific treatment.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No specific data.</td>
<td>No specific treatment.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

**Indication of immediate medical attention and special treatment needed, if necessary**

Notes to physician: Treat symptomatically.

Specific treatments: No specific treatment.

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

See toxicological information (Section 11)

Section 5. Firefighting measures

**Extinguishing media**

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

**Unsuitable extinguishing media**
- None known.

**Specific hazards arising from the chemical**
- No specific fire or explosion hazard.

**Hazardous thermal decomposition products**
- No specific data.

**Special protective actions 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

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

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

**For emergency responders**
- No special protection is required.

**Environmental precautions**
- No specific hazard.

**Methods and material for containment and cleaning up**
Section 6. Accidental release measures

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.

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

Precautions for safe handling : 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.

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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits : None.

Recommended monitoring procedures : Not applicable.

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%.

Environmental exposure controls : Not applicable.
Section 8. Exposure controls/personal protection

Individual protection measures

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

Eye protection
Safety glasses with side shields.

Skin protection
Hand 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.

Gloves
Rubber dipped anti-lacerative gloves are recommended.

Body protection
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.

Section 9. Physical and chemical properties

Physical state
Solid.

Colour
Clear./Colourless. to tinted

Odour
Odourless.

Melting point
704°C (1300°F) (softening point)

Flash point
Closed cup: Not applicable. [Product does not sustain combustion.]

Flammability (solid, gas)
Not applicable

Relative density
2.45

Auto-ignition temperature
Not applicable

Viscosity
Not Applicable

Section 10. Stability and reactivity

Reactivity
No specific test data related to reactivity available for this product or its ingredients.

Chemical stability
The product is stable.

Possibility of hazardous reactions
Not applicable.

Conditions to avoid
No specific data.

Incompatible materials
No specific data.
Section 10. Stability and reactivity

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity
Not available.

Irritation/Corrosion
Conclusion/Summary

Sensitisation
Conclusion/Summary

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on likely routes of exposure
Not available.

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.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data.

Inhalation: No specific data.

Skin contact: No specific data.

Ingestion: No specific data.
Section 11. Toxicological information

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
- 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.

Numerical measures of toxicity
- Acute toxicity estimates: Not available.

Section 12. Ecological information

Toxicity
Not available.

Persistence/degradability
Not available.

Bioaccumulative potential
Not available.

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

Other adverse effects: No known significant effects or critical hazards.
Section 13. Disposal considerations

Disposal methods: 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.

14. Transport information

<table>
<thead>
<tr>
<th>National Standard</th>
<th>China</th>
<th>UN</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>Marine pollutants substances</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Additional information
- CN: None identified.
- UN: None identified.
- IMDG: None identified.
- IATA: None identified.

Special precautions for user: -

Section 15. Regulatory information


China inventory (IECSC): All components are listed or exempted.
Section 15. Regulatory information

Australia inventory (AICS) : All components are listed or exempted.
Canada inventory (DSL) : All components are listed or exempted.
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : Japan inventory (ENCS): All components are listed or exempted.
Japan inventory (ISHL) : All components are listed or exempted.
Korea inventory (KECI) : All components are listed or exempted.
New Zealand (NZIoC) : All components are listed or exempted.
Philippines inventory (PICCS) : All components are listed or exempted.
United States inventory (TSCA 8b) : All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date of revision : 27 April 2016
Date of previous issue : No previous validation
Version : 1

Key to abbreviations

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
UN = United Nations

Other information

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

Indicates information that has changed from previously issued version.

Notice to reader

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 PPG, 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.