SAFETY DATA SHEET

Date of issue/Date of revision 27 April 2016
Version 4

Section 1. Identification

Product name : Magnetic Sputter/Vacuum Deposition (MSVD) Coated Float Glass

Product code : 01050

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

Product use : Glass.

Use of the substance/ mixture : Construction materials (building materials) - Other construction materials

Uses advised against : None identified.

Manufacturer : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)

Technical Phone Number : 1-412-820-8500 (Flat Glass/Trade)

Section 2. Hazards identification

OSHA/HCS status : 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 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.

Section 2. Hazards identification

Storage : Not applicable.

Disposal : Not applicable.

Supplemental label elements : None known.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Article

Product name : Magnetic Sputter/Vacuum Deposition (MSVD) Coated Float Glass

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.

Ingredient name	%	CAS number
glass, oxide, chemicals	60 - 100	65997-17-3

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.

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary 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.

Most important symptoms/effects, 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.

Ingestion : No specific data.

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. Fire-fighting 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.

Section 5. Fire-fighting measures

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 materials for containment and cleaning up

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

Large spill : Vacuum or sweep up material and place in a designated, labeled 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

Protective measures : Put on appropriate personal protective equipment (see Section 8). 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 and thermally heat-strengthened glass will tend to fracture much the same as normal strength annealed glass, and are not considered safety glazing products. Thermally tempered glass (commonly known as fully tempered glass or safety glazing) will fracture into many smaller pieces still capable of cutting skin, but typically not as severely as would larger fragments from normal strength annealed 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 : 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.

Section 7. Handling and storage

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

Ingredient name	Exposure limits
Sanding and grinding dusts	**OSHA PEL (United States).** TWA: 15 mg/m³ TWA: 5 mg/m³ Form: Respirable TWA: 15 mg/m³ Form: Total dust **ACGIH TLV (United States).** TWA: 5 mg/m³ Form: Inhalable TWA: 3 mg/m³ Form: Respirable TWA: 10 mg/m³ Form: Total dust

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

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, vapor 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.

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.

Skin protection

Hand protection : Rubber dipped anti-lacerative gloves are recommended.

Section 8. Exposure controls/personal protection

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

Appearance

Physical state : Solid.

Color : Clear./Colorless. to tinted

Odor : Odorless.

Odor threshold : Not applicable.

pH : Not applicable.

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

Boiling point : Not applicable.

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

Auto-ignition temperature : Not applicable

Decomposition temperature : Not applicable.

Flammability (solid, gas) : Not applicable

Lower and upper explosive (flammable) limits : Not applicable.

Evaporation rate : Not applicable.

Vapor pressure : Not applicable.

Vapor density : Not applicable.

Relative density : 2.45

Density (lbs / gal) : 20.45

Solubility : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Viscosity : Not Applicable

Volatility : 0% (w/w)

% Solid. (w/w) : 100

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.
Refer to protective measures listed in sections 7 and 8.

Incompatible materials : No specific data.

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

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Section 11. Toxicological information

Target organs : (Sanding and grinding dusts) Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes.

Aspiration hazard

Not available.

Information on the likely routes of exposure

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.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : Not applicable.

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

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 and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized 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.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class (es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

DOT : None identified.

IMDG : None identified.

IATA : None identified.

14. Transport information

Special precautions for user :

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are listed or exempted.

U.S. Federal regulations :

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 0 **Flammability :** 0 **Physical hazards :** 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 0 **Flammability :** 0 **Instability :** 0

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.

Date of previous issue : **12/4/2015**

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

Section 16. Other information

UN = United Nations

Indicates information that has changed from previously issued version.

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 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.