



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: US - OSHA Hazard Communication Standard (29 CFR 1910.1200)

Issuing Date 16-March-2023

Version 1.0

1. Identification

Product Identifier

Product Name FL600R-PETG, GR600R-PETG

Other means of identification

Recommended use of the chemical and restrictions on use

Recommended use 3-D printing applications

Restrictions on use No Information Available

Details of the supplier of the safety data sheet

Supplier Address

Braskem America, Inc.
1735 Market Street
Philadelphia, PA 19103-7583
TEL: (800) 396 - 5252

Emergency telephone number

Emergency Telephone CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust	Yes
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Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Warning

Hazard statements

May form combustible dust concentrations in air

Other information

Special danger of slipping by leaking/spilling product. Electrostatic charges may be generated during handling. If small particles are generated during processing or handling, this product may form combustible dust concentrations in air.

3. Composition/information on ingredients**Substance**

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Trade secret
Copolyester		<100	*
Titanium dioxide	13463-67-7	≤0.5	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

Chemical Additions

This product contains a proprietary blend of components encapsulated within a polymer matrix. These components are not considered to be hazardous chemicals in the concentrations used per the OSHA Hazcom Standard, 29 CFR 1910.1200. However, dusts containing titanium dioxide are considered potential human carcinogens by IARC.

4. First-aid measures**Description of first aid measures****Inhalation**

Move victim to fresh air. Medical aid is necessary if symptoms appear to be an obvious consequence of inhalation.

Eye contact

Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention if irritation develops and persists.

Skin contact

After contact with product or dust: Wash skin with soap and water. Get medical attention if irritation develops and persists. After contact with molten product, cool skin area rapidly with cold water. Removal of solidified molten material from skin requires medical assistance.

Ingestion

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed**Symptoms**

Product dust may be irritating to eyes, skin and respiratory system.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Carbon Dioxide (CO ₂), dry chemical, water spray
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Avoid generation of dust. Fine dust dispersed in air may ignite. Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence.
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	Yes.
Special protective equipment for fire-fighters	Firefighters should wear an approved positive pressure self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Avoid generation of dust. Avoid contact with eyes. Use personal protective equipment as required. Do not breathe dust. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharges.
Other information	Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Prevent dust cloud.
Methods for cleaning up	Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal. Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid generation of dust. Do not breathe dust. Avoid contact with eyes. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654).
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Conditions for safe storage, including any incompatibilities

Storage Conditions

Store in a cool, dry area away from potential sources of heat, open flames, sunlight or other chemicals. Keep container closed when not in use. Keep in an area equipped with sprinklers.

8. Exposure controls/personal protection

Control parameters**Exposure Limits**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Titanium Dioxide 13463-67-7	TWA: 10 mg/m ³	TWA: 15 mg/m ³	5,000 mg/m ³

Appropriate engineering controls**Engineering controls**

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles). During hot processing: Tight sealing safety goggles. If there is a risk of contact: Face protection shield.

Hand protection

Wear suitable gloves. Heat resistant gloves are recommended when handling molten materials.

Skin and body protection

Wear suitable protective clothing. During hot processing: Long sleeved clothing, Protective shoes or boots.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Regular cleaning of equipment, work area and clothing is recommended.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Pellets, filaments
Physical state	Solid
Color	White
Odor	Odorless or slight odor
Odor threshold	No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	>1 (estimated)	None known
Water solubility	negligible	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Self-ignition	849 °F / 454 °C Method: ASTM E659	
Decomposition temperature	Thermal stability not tested. Low stability hazard expected at normal operating temperatures.	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

Explosive properties	No information available.
Oxidizing properties	No information available.
Softening point	> 212 °F / > 100 °C
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity	None under normal use conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Temperatures over 550°F may result in thermal decomposition. Dust formation.
Incompatible materials	No additional information available.
Hazardous decomposition products	Decomposition products depend on temperature, exposure to air, and the presence of other substances. Processing may release irritating fumes, carbon monoxide, and carbon dioxide.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation of respiratory tract.
Eye contact	Dust contact with the eyes can lead to mechanical irritation.
Skin contact	Contact with dust can cause mechanical irritation or drying of the skin.
Ingestion	May cause irritation of the mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

Based on available data, the classification criteria are not met

Chemical name	LD50 Oral	LD50 Dermal	Inhalation LC50
Titanium Dioxide 13463-67-7	>10,000 mg/kg (Rat)		=5.09 mg/L 4h (Rat)

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

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Copolyester	-	-	-	-
Titanium Dioxide 13463-67-7		Group 2B		

IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Group 2B – Possible Carcinogenic to Humans

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

STOT - single exposure None of the ingredients are known to cause specific target organ effects from a single exposure.

STOT - repeated exposure None of the ingredients are known to cause specific target organ effects through prolonged or repeated exposure.

Target organ effects	Respiratory system, Eyes, Skin.
Aspiration hazard	None of the ingredients are known to be an aspiration hazard.
Other adverse effects	No information available.
Interactive effects	No information available.

12. Ecological information

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.
Bioaccumulation	There is no data for this product.
Other adverse effects	No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Do not release into the environment. Recover or recycle if possible.
Additional Information	Do not reuse empty containers. Do not dispose of waste into sewer. Do not dispose of with household waste. Do not allow to enter drains.

14. Transport information

<u>DOT</u>	Not regulated
<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated

15. Regulatory information

NOTE: Please contact supplier for regulatory information.

TSCA

All known components of this product are listed on the active portion of the TSCA Inventory or are exempt from the need for such listing.

International Inventories

Contact supplier for inventory compliance status.

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains no known chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

See NOTE at top of Section 15 of SDS.

U.S. State Right-to-Know Regulations

See NOTE at top of Section 15 of SDS

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	Health hazards	1	Flammability	1	Instability	0	Physical and Chemical Properties –
HMIS	Health hazards	1	Flammability	1	Physical Hazards	0	Personal Protection X

Chronic Hazard Star Legend * = Chronic Health Hazard

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

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Disclaimer

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet

US OSHA LABEL per 29 CFR § 1910.1200(f)

Copolyester

Warning

BEFORE USING, READ THE SAFETY DATA SHEET. Slipping hazard. May form combustible dust concentrations in air if small particles are generated during further processing, handling, machining, or by other means.

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1735 Market Street
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TEL: (800) 396-5251

EMERGENCY PHONE NUMBER
CHEMTREC: 800-424-9300

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