

MATERIAL SAFETY DATA SHEET
According to Regulation (EC) No 1907/2006 (REACH)

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1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

Trademark:	NORYL*
Product Code:	NH7111E-GY8D414-0-NOR
Product Description:	Modified Polyphenyleneoxide [CASRN 25134-01-4], glass fiber filled
Product Type:	Commercial Product
Recommended use:	May be used to produce molded or extruded articles or as a component of other industrial products.
Company:	SABIC Innovative Plastics B.V. Plasticslaan 1 P.O. Box 117 4600 AC Bergen op Zoom The Netherlands
Manufacturer:	SABIC Innovative Plastics B.V. Plasticslaan 1 P.O. Box 117 4600 AC Bergen Op Zoom The Netherlands
Emergency Telephone Number:	Bergen op Zoom +31(0)164-292911 (24/24)
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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- Pellets with slight or no odor
- Spilled material may create slipping hazard
- Can burn in a fire creating dense, toxic smoke
- Molten plastic can cause severe thermal burns
- Fumes produced during melt processing may cause eye, skin, and respiratory tract irritation. Severe over-exposure may result in nausea, headache, chills, and fever. See below for additional effects.
- Secondary operations, such as grinding, sanding, or sawing can produce dust which may present an explosion or respiratory hazard.

Skin Contact:	May cause skin irritation in susceptible persons.
Eye Contact:	Resin particles, like other inert materials, are mechanically irritating to eyes.
Inhalation:	Irritating to respiratory system; avoid inhalation of dusts.
Ingestion:	Pellet ingestion unlikely due to physical form.
Other Information:	Cool skin rapidly with cold water after contact with molten material. Heating can release hazardous gases. Hazardous fumes can also occur in post-processing operations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Not a hazardous substance or preparation according to EC-directives 1999/45/EC and 1272/2008/EC unless indicated.

Chemical Name	CAS Number	ELINCS / EINECS-No.:	Weight %	Classification:
Titanium dioxide	13463-67-7	2366755	5-10	-

Chemical Name	SABIC Recom.(8 Hr)*	MAC (15 min. TWA)	MAC (8hr TWA)
Titanium dioxide	Not established	10 mg/m ³ Inhalable dust. 5 mg/m ³ Respirable dust.	10 mg/m ³ 5 MG/m ³ (resp.dust)

4. FIRST AID MEASURES

If Inhalation:	Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.
On skin contact:	Wash off immediately with soap and plenty of water. Immediately cool the skin by rinsing with cold water after contact with hot material. Consult a physician.
On contact with eyes:	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, consult a specialist.
On ingestion:	No hazards which require special first aid measures.
Precautions:	Cool molten product on skin with plenty of water. Do not remove solidified product. Do not peel polymer from the skin.

5. FIRE-FIGHTING MEASURES

Flash Point:	>300°C
Autoignition Temperature:	490 °C (914°F), estimated.
Explosive Limits	
upper:	Not determined
lower:	Not determined
Suitable Extinguishing Media:	Use dry chemical, CO2, water spray or "alcohol" foam. Water is the best extinguishing medium. Carbon dioxide and dry chemical are not generally recommended because their lack of cooling capacity may permit re-ignition on larger resin fires (blobs, drools, etc.).
Unsuitable Extinguishing Media for Safety Reasons:	Do not use a solid water stream as it may scatter and spread fire.
Hazardous decomposition products:	Carbon monoxide, carbon dioxide (CO2), triarylphosphate ester fragments, oxides of phosphorus, hydrogen cyanide (hydrocyanic acid), hydrocarbons fragments.
Special Protective Equipment for Firefighters:	In the event of fire, wear self-contained breathing apparatus (NEN-EN137).
Specific Hazards:	Take precautionary measures against static discharges. During processing, dust may form explosive mixture in air. Thermal decomposition can lead to release of irritating gases and vapors.

6. ACCIDENTAL RELEASE MEASURES

Clean up:	Sweep up and shovel into suitable containers for disposal. Do not create a powder cloud by using a brush or compressed air.
Personal Precautions:	See section 8.
Environmental Precautions:	Do not flush into surface water or sanitary sewer system. Should not be released into the environment.

7. HANDLING AND STORAGE

Handling:	Handle in accordance with good industrial hygiene and safety practices. Provide for appropriate exhaust ventilation and dust collection at machinery. Avoid dust formation. All metal parts of the mixing and processing equipment must be earthed.
Storage:	Store in closed container in a dry and cool area. Keep away from heat sources and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits: No components with information, unless noted below

Titanium dioxide - 13463-67-7

France INRS (VME)	10 mg/m ³ Ti
Netherlands OEL - MAC	10 mg/m ³
UK EH40 MEL (TWA)	WEL_TWA: 4 mg/m ³ respirable, 10 mg/m ³ total inhalable
Spain - Valores Limite Ambientales - VLE	VLA-ED: 10 mg/m ³
Denmark TWA Data - Threshold Limit Values (TLV):	GR: 6 mg/m ³ beregnet som Ti
Switzerland SUVA Limit Values at the Workplace Data - Time Weighted Average (TWA):	MAK_Wert: 3 mg/m ³ alveolengangiger ; Kol_SS: Grp_C
Sweden Threshold Limit Values Data -	NGV: 5 mg/m ³ totaldamm
Portugal - TWAs	VLE-MP: 10 mg/m ³ ; NOT: A_4; FUND: Pulmão
Norway Exposure Limit Values Data - Threshold Limit Value:	KONS: 5 mg/m ³
Ireland Exposure Limit Values Data - Time Weighted Average (TWA):	TWA 4 mg/m ³ respirable dust, 10 mg/m ³ total inhalable dust
Greece - OEL	DT_1 5 mg/m ³ T_1 , 10 mg/m ³ T_3
Italy - OEL	10 mg/m ³

Engineering Measures to Reduce Exposure: In the case of hazardous fumes, wear self contained breathing apparatus. Wear face-shield and protective suit for abnormal processing problems. Handle in accordance with good industrial hygiene and safety practice for diagnostics. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.

Hand Protection: Protective gloves should be worn, NEN-EN 374.

Eye Protection: Safety glasses with side-shields. (NEN-EN 165-166).

Respiratory Protection: In the case of hazardous fumes, wear self contained breathing apparatus. In case of insufficient ventilation wear suitable respiratory equipment. (NEN-EN149).

Body Protection: Long sleeved clothing (NEN-EN 340-369-465).

Hygiene Measures: When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Appearance:	Pellets
Color:	Same as color code
Odor:	Slight
Melting point/range:	Various
Autoignition Temperature:	490 °C (914°F) estimated
Vapor Pressure:	Negligible
Water Solubility:	Insoluble
Evaporation Rate:	Negligible
Specific gravity:	>1; (water = 1)
Bulk density:	0.91 to 0.93 g/cm ³
VOC content (%):	Negligible
Explosive Limits	
upper:	Not determined
lower:	Not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under ambient conditions. Hazardous polymerisation does not occur.
Conditions to Avoid:	To avoid thermal decomposition, avoid elevated temperatures. Heating can result in the formation of gaseous decomposition products, some of which may be hazardous. Avoid temperatures above 490 °C without adequate ventilation.
Hazardous Decomposition Products:	Trace levels of triarylphosphate esters, phenols, styrene, hydrocarbons.

11. TOXICOLOGICAL INFORMATION

LD50/oral/rat:	>5000 mg/kg
LD50/dermal/rabbit:	>2000 mg/kg
Subchronic Toxicity:	No information available In a 13 week dust inhalation study, laboratory rats were exposed to up to 50 mg/m ³ PPE dust for 6 hrs/day for 13 weeks with a 13-week non-exposure recovery period. There was no evidence of systemic toxicity at the highest dose. Localized toxicity was observed in the lungs and regional lymph nodes of the 50 mg/m ³ exposure group. These findings decreased in severity in the 7 and 1 mg/m ³ exposure groups. A no adverse effect level for PPE is estimated to be 7 mg/m ³ and a no observable effect level is 1 mg/m ³ .
Primary Irritation:	Skin irritation
IARC:	Not listed
OSHA:	Not regulated
NTP:	Not tested
Special Studies:	Polyphenylene ether: In two independent 2 year dietary studies, purebred beagles and laboratory rats were fed polyphenylene ether resin powder (up to 10% by weight in the animal diet). In both studies, there were no adverse effects on physical appearance, behavior, growth, food consumption, survival, clinical laboratory results, organ weights or gross or microscopic pathology. In a 6 month chronic inhalation study, rats and guinea pigs exposed 6 hrs/day to up to 300 mg/m ³ PPE dust developed no physical, nutritional, hematologic, clinical or pathological reaction except to lung tissue changes which consisted of macrophage accumulation, many of which were degenerative in the pulmonary alveoli. Polyphenylene ether is not a mutagen by Ames (Salmonella) Assay with and without activation.

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects:	Do not flush into surface water or sanitary sewer system.
Ecotoxicity - Invertebrate Data:	Ecological damages are not known or expected under normal use.
Germany VCI (WGK):	0

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:	Where possible recycling is preferred to disposal or incineration. Dispose of in accordance with local regulations.
EWC waste disposal no:	702 - waste from the manufacture, formulation, supply and use of plastics, synthetic rubber and man-made fibres.

14. TRANSPORT INFORMATION

Transport Classification:

Not regulated as hazardous for shipment, unless noted below, under current transportation guidelines.

DOT

ADR/RID/ADN

IMDG

ICAO

IATA-DGR

15. REGULATORY INFORMATION

This substance is classified and labelled according to Annex I of Directive 67/548/EEC, as amended.

R -phrase(s)

S -phrase(s)

International Inventories:

TSCA (USA):	Listed
DSL (Canada):	Listed
EINECS/ELINCS (Europe):	Listed
ENCS (Japan):	Listed
IECSC (China):	Listed
KECL (Korea):	Listed
PICCS (Philippines):	Listed
AICS (Australia):	Listed
NZIoC (New Zealand):	Listed
REACH Information:	For this product's REACH related information, please contact webinquiries@sabic-ip.com

Other Inventory Information:

A "Listed" entry above means all chemical components are on the respective inventory list and/or a qualifying exemption exists for one or more components. A "Not listed" entry above indicates one or more components is restricted from import or manufacture into that country/region. Articles are exempt from registration and are therefore not listed on the national chemical inventories.

California Proposition 65:

Components in this product known to the State of California to cause cancer and/or reproductive effects, are listed below:

Chemical Name	Weight %	California Proposition 65:
Titanium dioxide 13463-67-7	5-10	Listed: September 2, 2011 Carcinogenic. (airborne, unbound particles of respirable size)
Fibrous Glass 65997-17-3	5-10	Listed: July 1, 1990 Carcinogenic. (airborne, unbound particles of respirable size)

RoHS EU Directive 2002/95/EC:

The subjected product is in compliance with EU RoHS Directive 2002/95/EC. All below chemicals are not employed in the manufacture of the product: a.Cadmium and its compounds, b.Lead and its compounds, c.Mercury and its compounds, d.Hexavalent chromium compounds, e.Polybrominated biphenyls (PBBs), f.Polybrominated diphenyl ethers (PBDEs including Deca-BDE). The trace levels of heavy metals may be present as impurities within threshold limits (<0.1% for Pb, Hg, Cr VI, and <0.01% for Cd). We are disclosing this information, to the best of our knowledge, based upon data from our raw material manufacturers.

16. OTHER INFORMATION

Text of R Phrases mentioned in Section 3

NORYL* is a trademark of SABIC Innovative Plastics IP BV

MSDS Scope:

Europe: Conforms to Regulation (EC) No 1907/2006 (REACH)

This document is also applicable in other countries and regions.

Prepared by:

Product Stewardship & Toxicology.

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End of Material Safety Data Sheet