

SAFETY DATA SHEET(SDS)

Issued: May 9, 2019

Revised: May 9, 2019

FileNo. 2102-1

1. Chemical Product & Company Identification

CHEMICAL PRODUCT NAME:	DURANEX®	GFR315 ED3002
NAME OF COMPANY:	Polyplastics Co., Ltd.	
ADDRESS:	2-18-1 Konan, Minato-ku, Tokyo, 108-8280 Japan	
SECTION IN CHARGE:	Quality Assurance Dept.	
TELEPHONE NUMBER:	03-6711-8605	
FACSIMILE NUMBER	03-6711-8616	

2. Hazards identification

[GHS CLASSIFICATION]

Physical and Chemical Hazards	: • Flammable solids : Classification not possible • Self-reactive substances and mixtures : Not applicable • Pyrophoric solids : Not classified • Self-heating substances and mixtures : Classification not possible • Substances and mixtures, which in contact with water, emit flammable gases : Not classified • Oxidizing solids : Not classified • Corrosive to metal : Not classified
Health Hazards	: • Carcinogeneses : Category 1B • Specific target organ/systemic toxicity (Repeated exposure) : Category 2(Lung)
Environmental Hazards	: Classification not possible

[SYMBOL]



[SIGNAL WORD]

: Danger

[HAZARD STATEMENT]

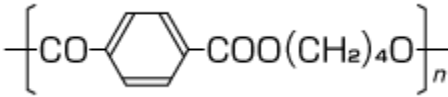
: • May cause cancer.
• May cause damage to organs(Lung) through prolonged or repeated exposure.

[PRECAUTIONARY STATEMENTS]

Prevention	: • Obtain special instructions before use. • Do not handle until all safety precautions have been read and understood. • Wear protective gloves/protective clothing/eye protection/face protection. • Do not breathe dust/fume/gas/mist/vapours/spray. • Wash hands thoroughly after handling.
Response	: • If exposed or concerned: Get medical advice/attention. • Get medical advice/attention if you feel unwell.
Storage	: • Store locked up. • Avoid direct sunlight and store in a well-ventilated place.
Disposal	: Dispose of contents/container in accordance with local & national regulations.

3. Composition/information on ingredients

SUBSTANCE/PREPARATION	: Mixture
COMMON CHEMICAL NAME	: Polybutyleneterephthalate
SYNONYMS	: Polybutyleneterephthalate(PBT)
INGREDIENTS AND COMPOSITION	: PBT ≥59.5%, Glass fiber 15%, Diantimony trioxide ≤5%, Carbon black ≤0.5%, Flame retardant and others ≤20%

CHEMICAL FORMULA	:	
SERIAL No. IN OFFICIAL GAZETTE	:	7-1039(base resin) (Law Concerning Examination and Regulation of Manufacture, etc., of Chemical Substances)
CAS No.	:	24968-12-5(base resin)
INGREDIENTS CONTRIBUTING TO THE HAZARD	:	Cadmium, lead, hexavalent chromium and mercury are not used in this grade.
4. First-aid measures		
INGESTION	:	When a gas generated from the molten polymer has been inhaled, move to area of fresh air without delay and wait until the victim is recovered. If sick feeling continues, ask a physician for advice.
SKIN CONTACT	:	Cool the contacted skin with clean water without delay, if a contact with the polymer in a molten form. Do not force to remove the solid resin on the skin. If any burns are observed on the skin, ask a physician for advice.
EYE CONTACT	:	Cool and rinse the eye with clean water for at least 15 minutes when the eyes had contact with molten polymer. In case of wearing contact lenses, remove the lenses as soon as possible, and ask a physician for advice. When the eye had contact with the polymer in an ordinary solid form, rinse the eye with clean water without delay. If the discomfort persists, ask a physician for advice.
SWALLOW	:	Help to vomit as much as possible. If sick feeling continues, ask a physician for advice.
5. Fire-fighting measures		
EXTINGUISHING MEDIA	:	Water, foam fire-extinguishing agent, powder fire-extinguishing agent, and carbon dioxide gas.
SPECIFIC METHODS	:	Extinguish the fire with water. A method of extinguishing an ordinary fire may be applied. Do not apply water directly to processing machines.
SPECIFIC HAZARDS	:	Incomplete combustion leads to generation of toxic gases such as carbon monoxide or tetrahydrofuran, in addition to carbonic acid gas and water.
SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS	:	In case the fire gained force, use a gas mask or other protective equipment.
6. Accidental release measures		
PERSONAL PRECAUTIONS	:	When pellets were spilled on the road or floor, wipe them off with a besom or cleaner not to cause slipping.
ENVIRONMENTAL PRECAUTION	:	Handle the spillage in accordance with provisions given in the "Resin pellet spillage preventive manual", in order to prevent intakes by marine animals and birds.
7. Handling and storage		
HANDLING	:	Polybutyleneterephthalate resin in a pellet form will neither ignite nor explode at room temperatures.
HANDLING 2	:	This pellets spilled on the floor are likely to cause slipping. Remove such spillage at any times.
HANDLING 3	:	For molding work, effective means for local exhaust are required to discharge gases generated by melt processing.
HANDLING 4	:	Avoid inhaling of gases generated in molding work. Do not directly touch resin of high temperature.
HANDLING 5	:	Avoid retaining hot resin in the processing machines for many hours.
HANDLING 6	:	Glass fibers are not generally exposed in a single substance under



normal processing and handling conditions as they are compounded in pellets. However, the following measures will be necessary to minimize the exposure to glass fibers or dusts containing glass fibers, when pellets or molded parts containing glass fibers are cut, ground or burnt, depending on environmental and operational conditions.

- Those who are sensitive in skin to glass fiber should wear suitable(protective) clothes to minimize the exposure of their skin.
 - Wash working clothes apart from other laundry, so that the latter will not cause contamination with glass fibers.
 - Provide the workshop with partitions to prevent diffusion of glass fiber dusts.
 - Pay precautions not to rub face, neck, arms or hands. Wash them with water and gargle after working.
 - Keep dust sources totally enclosed.
 - Provide local air exhausters and implement periodical inspections and adjustments at least once a year.
 - Reduce cutting and grinding processes to the possible minimum, and devise working procedures to minimize dust generation.
 - Provide dust-preventive masks, protective glasses and gloves for personal hygiene.
 - Determine the operational environment at indoor working places and confirm the effects of environmental improvement.
- Note) Glass fibers are, like road dusts, told to be least hazardous to human bodies, but proper measures are required to avoid useless inhaling.

STORAGE	:	Keep the substance away from any fire or heat sources for the sake of safe storage.
STORAGE 2	:	Handle in accordance with municipal rules and regulations.
RECOMMENDED PACKAGING MATERIALS	:	No information.

8. Exposure controls/ personal protection

CONTROL CONCENTRATION	:	None at present
PERMISSIBLE CONCENTRATION	:	OSHA PEL/1985 Max. permissible concentration of inactive powder 15mg/m ³ - ditto - (Aspiration) 5 mg/m ³ ACGIH TLV/1992 1993 Exposure limit of the powder TWA 10 mg/m ³
ENGINEERING MEASURE	:	·When handling dust: Use totally enclosed containers resisting dust explosion. ·When heat melted in molding: Effective local ventilation must be provided.
PERSONAL PROTECTIVE EQUIPMENT		
RESPIRATORY PROTECTION	:	Wear a dust-proof mask.
HAND PROTECTION	:	Wear heat-resisting gloves against burns, when handling molten polymer.
EYE PROTECTION	:	Wear protective glasses or goggles.
SKIN & BODY PROTECTION	:	Wear long sleeve clothes against burns, when handling molten polymer.

9. Physical and chemical properties

APPEARANCE etc.	:	Pellet
BOILING POINT	:	Not applicable
VAPOUR PRESSURE	:	Not applicable
VOLATILITY	:	Not applicable

INITIAL BOILING POINT	: Not applicable
SUBLIMATION	: None
MELTING POINT	: 224°C
DENSITY	: 1.6
SOLUBILITY	: Insoluble in water
FLASH POINT	: 300°C or higher
IGNITION POINT	: 300°C or higher
EXPLOSION PROPERTY	: Not applicable
INFLAMMABILITY	: None
REACTIVITY WITH WATER	: None
OXIDIZABILITY	: None
SELF-REACTIVITY	: None
DUST EXPLOSIVENESS	: Upper explosion limit : Not applicable. Lower explosion limit : 35g/m3

10. Stability and reactivity

STABILITY AND REACTIVITY	: Stable for normal storage or handling.
--------------------------	--

11. Toxicological information

SKIN CORROSION/IRRITATION	: No finding.
SERIOUS EYE DAMAGE/IRRITATION	: Gas generated in drying or melting is irritating eyes and skins.
RESPIRATORY OR SKIN SENSITISATION	: No finding
ACUTE TOXICITY(INCLUDING LD50)	: No finding.
SUBACUTE TOXICITY	: No finding.
CHRONIC TOXICITY	: This product contains the substance that causes damage to lung and respiratory through prolonged or repeated exposure.(Sb)
CARCINOGENECITY	: This product contains the substance of carcinogenic category 1 in the GHS classification.(Sb)
MUTAGENECITY(Micro organisms, chromosomal aberration)	: No finding.
REPRODUCTIVE TOXICITY	: No finding.
TERATOGENICITY	: No finding.
OTHERS(Including generation of hazardous gases by reaction with water, for example)	: No finding in this report means that there will be no hazard in general, but no proving data available at the time of reporting.
OTHER CAUTIONS	: With regard to dust, the maximum permissible concentration and limits are fixed by OSHA and ACGIH.
OTHER CAUTIONS 2	: Information on hazards of glass fibers as filler.

〈Effects on Human Bodies〉

(1) Effects on skin

Stimulation to the skin with glass fibers may be caused when glass fibers diameter is larger than 4.5~5 μm. They give mechanical stimulation followed by itchiness to the skin, but further continuous exposure reportedly results in extinction of stimulation. It may sometimes leads to irritable dermatitis complicated with urticaria or eczema-like reaction. It is, however reported that such dermatitis is not so serious in general and does not last too long. Therefore, skin stimulation can be prevented by proper use of glass fibers.

(2) Effects on Tumor

Investigations made on glass fibers till today reveal that there is neither increase in mortality of glass fiber production workers due to lung cancer or mesothelioma nor such cases reported.

〈Animal Test Report〉

It is suggested that carcinogenicity of mineral fibers is dependent on their shapes rather than on their constituents. According to a report on experiments using 17 kinds of artificial mineral fibers in various sizes prepared by Dr. Stanton of National Cancer Institute, in USA, statistical studies on correlations between the diameter and length of fibers and the coincidence of mesothelioma have revealed that mineral fibers having a diameter smaller than $0.25\ \mu\text{m}$ and a length larger than $8\ \mu\text{m}$ are closely related to the coincidence of cancers. Since these experiments were performed by artificially dosing the subject animals with a large quantity of glass fibers and consequently they are quite different from the actual exposures to human bodies, it is told to be problematic to make a conclusion that mineral fibers are hazardous to human health, basing on the results obtained from these experiments. Up to the present time, there is no result obtainable to demonstrate a mechanism of glass fibers causing lung cancers in spite of experiment by long exposure to glass fibers with high concentration.

OTHER CAUTIONS 3

- : Toxicological information of Diantimony trioxide which is an ingredient is shown below. Toxicity of the ingredient does not appear as product for pellet. When dust is generated by cutting and sanding, toxicity appears. Avoid breathing dust and avoid generating dust.

[Diantimony trioxide]

Acute toxicity

Oral : Category 5

Dermal: No information

Inhalation: No information

Skin Corrosion/Irritation: No information

Eye Damage/Irritation: No information

Sensitization–Skin: No information

Germ Cell Mutagenicity: Not classified

Carcinogenicity: ACGIH A2; Suspected Human Carcinogen.

IARC 2B; Possible carcinogenic to humans.

Toxicity to Reproduction: Not classified

Specific Target Organ Toxicity(Single Exposure)

Judged as Category 2 about the respiratory organs when investigated with documents of CERI hazard data used in the judgement of GHS classification results by three Ministries. On the other hand, "Not Classified" is judged from documents shown by public comment. It is assumed to be "Category 2"(respiratory organs) from view point of disseminating the risk, because both vary in the category by useful data.

Specific Target Organ Toxicity(Repeated Exposure)

For human "Pneumonia was confirmed by chest X-rays examination." "Antimonial pneumoconiosis was seen, and pneumoconiosis was doubted." "The relations between chest X-ray image abnormality, the remaining in the antimonial lungs and the exposure period were reported." "Existence of the echymotic shadow of less than 1 mm in diameter and its accumulation to pulmonary middle lobe" (IRIS 2002)

For mammal: "The color change of the lungs was seen by the necropsy." "A particle component



phagocyte, a denaturing phagocyte, alveolus intramural cell waste were observed." "Interstitial fibrosis, the enlargement of the alveolus epithelium cell and the hyperplasia" "Granuloma-like inflammation and granuloma" {IRIS(2002)} "Weight loss, interstitial fibrosis, enlargement of the alveolus epithelium cell and hyperplasia, cube and cylinder epithelium apparition, cholesterol rime" {CERI hazard data 2001-7 (2002)} In addition, the influence on mammals was seen in the range of a guidance level Category 1. The classification of the antimony compound is assumed to be Category 1(respiratory organs) as mentioned above.

Aspiration Hazard: No information

OTHER CAUTIONS 4

: Toxicological information of Carbon black which is an ingredient is shown below. Toxicity of the ingredient does not appear as product for pellet. When dust is generated by cutting and sanding, toxicity appears. Avoid breathing dust and avoid generating dust.

[Carbon black]

Acute toxicity

Oral: Rat LD50 15,400mg/kg GHS Not classified

Dermal: No information

Inhalation: No information

Skin Corrosion/Irritation: No information

Eye Damage/Irritation: No information

Sensitization-Skin: No information

Germ Cell Mutagenicity: No information

Carcinogenicity: IARC 2B; Possible carcinogenic to humans.

Toxicity to Reproduction: No information

Specific Target Organ Toxicity(Single Exposure)
No information

Specific Target Organ Toxicity(Repeated Exposure)
Category 1 based on the influence on lungs (the hyperplasia of the epithelium, pulmonary fiber symptom) in pneumoconiosis of human and a rat inhalational examination in the range of guidance level Category 1

Aspiration Hazard: No information

REMARKS

: Hazards information and so on result from the national classification of Diantimony trioxide and carbon black.

12. Ecological information

BIODEGRADABILITY : No finding.
BIOACCUMULATION : No finding.
FISH TOXICITY : No finding.
HAZARDS TO OZONE LAYER : None

13. Disposal considerations

WASTE FROM RESIDUES : This is designated as waste plastics among industrial wastes by the Wastes Disposal Law. Disposal waste pellets through licensed wastes handlers or local autonomous bodies if they are handling wastes disposal.
WASTE FROM RESIDUES 2 : When disposed by incineration, use the well controlled incinerators in accordance with the Wastes Disposal Law, Air Pollution Control Law and Water Pollution Prevention Law.

14. Transport information	
UN CLASSIFICATION NUMBER	: Not restricted for ICAO/IATA.
OTHER CAUTIONS	: Handle with care so as not to give damages to containers or not to be subjected to wetting.
OTHER CAUTIONS 2	: Secure the containers firmly so as not to cause collapsing.
15. Regulatory information	
WASTE DISPOSAL LAW	: Waste plastics among industrial wastes.
LAW CONCERNING REPORTING,ETC. OF RELEASES TO THE ENVIRONMENT OF SPECIFIC CHEMICAL SUBSTANCES AND PROMOTING IMPROVEMENTS IN THEIR MANAGEMENT(PRTR)	: Designated as Class I Designated Chemical Substances Cabinet order Annex 1 No.31.(antimony and its compounds; Government ordinance No.356, revised October 1 2009) The content of chemical substance required by the law will be given in another sheet. You are required to submit the confidential agreement for this information. Please take contact with our sales person for more detail.
INDUSTRIAL SAFETY AND HEALTH LAW	: ·Designated as Cabinet order No.93 Annex 9 No.38.(Antimony and its compounds) ·Designated as Cabinet order No.93 Annex 9 No.130.(Carbon black)
INDUSTRIAL SAFETY AND HEALTH LAW (ORDINANCE ON PREVENTION OF HAZARDS DUE TO SPECIFIED CHEMICAL SUBSTANCES)	: Classified as Specified Chemical Substances, Control Group-2 Substances and Specified Control Substances (Diantimony trioxide and its mixture containing more than 1wt% of Diantimony trioxide) Exemption: Handling of resin pellets is exempted from this Act because it is considered as handling of the above-mentioned substances that are embedded in solid materials such as resins.
16. Other information	
HANDLING OF THE DETAILS GIVEN ABOVE	: This SDS is the English version translated from the Japanese SDS which is prepared for domestic use. Details given above are based on references, information and data available at this moment, but no warranty can be made on exactness of these details. They are also prepared on the assumption that the product will be handled in a normal way. For special handling, adequate safety and environmental measures should be taken in respect to its applications. Our products are not specifically intended for implants for medical and dental applications, and therefore they are not recommended for such applications. "No finding" in this report means that there will be no hazard in general, but no proving data is available at the time of reporting.
WHERE TO CALL FOR FURTHER INFORMATION	: Polyplastics Co. , Ltd. Quality Assurance Dept. Tel. No 03-6711-8605

*DURANEX® is a registered trademark of Polyplastics Co., Ltd. in Japan and other countries.