SAFETY DATA SHEET(SDS)

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1.Chemical Product & Company Identification

CHEMICALPRODUCT NAME:	DURACON® GH-20 CF3500
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 : Not classified ・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 : No hazard ・Specific target organ/systemic toxicity (Repeated exposure) : No hazard
Environmental Hazards	:	No hazard
[SYMBOL]	:	None
[SIGNAL WORD]	:	None
[HAZARD STATEMENT]	:	None
[PRECAUTIONARY STATEMENTS]		
Prevention	:	・Wash hands thoroughly after handling. ・Wear protective gloves.
Response	:	-
Storage	:	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	:	Polyoxymethylene
SYNONYMS	:	Polyacetal(POM)
INGREDIENTS AND COMPOSITION	:	POM ≧79%, Glass fiber 20%, Others ≦1%
CHEMICAL FORMURA	:	$-[(CH_2-O)_p/(CH_2CH_2O)_q]_n-$
SERIAL No. IN OFFICIAL GAZETTE	:	7-129(base resin) (Law Concerning Examination and Regulation of Manufacture, etc., of Chemical Substances)
CAS №.	:	24969-26-4(base resin)
INGREDIENTS CONTRIBUTING TO THE HAZARD	:	Formaldehyde. 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 formaldehyde, 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	:	Polyacetal resin in a pellet form will neither ignite nor explode at room temperatures, but it falls under the inflammables designated by the Fire Service Law. Keep it away from the igniting sources, as it quickly gains force once it is ignited.
HANDLING 2	:	Polyacetal resin in a powdered form is likely to cause dust explosion and is therefore designated in the Guideline for Hazard of Dust Explosion in U.S.Bureau of Mines. Effective earthing means or use of inert gas like N2 are required for dust handling equipment to eliminate static electricity.
HANDLING 3	:	This pellets spilled on the floor are likely to cause slipping. Remove such spillage at any times.
HANDLING 4	:	For molding work, effective means for local exhaust are required to discharge gases generated by melt processing.
HANDLING 5	:	Avoid inhaling of gases generated in molding work. Do not directly touch resin of high temperature.
HANDLING 6	:	Avoid retaining hot resin in the processing machines for many hours.
HANDLING 7	:	Avoid mixed extrusion with strong acid, oxidizing agents and PVC.
HANDLING 8	:	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 : This polymer is a synthetic resin designated as an inflammable substance by the Fire Service Law and should be handled in accordance with municipal rules and regulations (concerning fire-fighting equipment, indoor storage, for instance).

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/m3
- ditto - (Aspiration) 5mg/m3
ACGIH TLV/1992 1993
Exposure limit of the powder TWA 10 mg/m3
(Reference) Human exposure to formaldehyde -
Ministry of Health & Welfare/2002
Guideline value 0.08 ppm
OSHA Parameter/1992
TWA 0.75 ppm
STEL 2 ppm
ACGIH TLV/1992 1993
TWA 0.3 ppm

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	:	165℃
DENSITY	:	1.54
SOLUBILITY	:	Insoluble in water
FLASH POINT	:	320℃ or higher
IGNITION POINT	:	400℃ or higher
EXPLOSION PROPERTY	:	Not applicable
INFLAMMABILITY	:	Inflammable(Designated as inflammable resin by the Fire Service Law)
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.
CONDITIONS TO AVOID	:	Avoid contacts with strong acid, oxidizing agent or PVC under hot melt conditions.
HAZARDOUS DECOMPOSITION PRODUCTS	:	Formaldehyde will be generated when heated (for drying or melting) or burnt.

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	:	No finding.
CARCINOGENECITY	:	No finding.
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	:	Formaldehyde will be generated when heated (for drying or melting) or burnt.
OTHER CAUTIONS 3	:	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 carcinogenecity 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 μ m and a length larger than 8 μ 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 4	:	Carcinogenicity class of formaldehyde, which may be generated if overheated. IARC(International Agency for Research on Cancer): Group1

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

FIRE SERVICE LAW	:	Inflammable synthetic resin Designated quantity: More than 20m3 for the foamed product. More than 3,000 kg for other types.
WASTE DISPOSAL LAW	:	Waste plastics among industrial wastes.
OTHERS	:	Formaldehyde is designated as Class 2 substance by the

		Industrial Safety and Health Law(Regulations concerning hazards caused by specific chemicals) and designated as deleterious substance by the Poisons and Deleterious Substance Control Law. Recommended usage, criteria, and limit values are provided by Japan Industrial Safety and Health Society, OSHA and ACGIH.

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

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