

# Safety Data Sheet(SDS)

Last revised date : 26-12-2022

## 1. Identification

1) Product identifier : MPPE/GF FR VB-8202G

2) Recommended use of the chemical and restrictions on use

○ Recommended use of the chemical

Others(Synthetic Resin Plastics)

○ Restrictions on use

Use for recommended use only

Do not use it for weapons manufacturing and related purposes.

3) Details of the supplier of the safety data sheet

○ Seller

Company name : Lotte Chemical Corporation

Address : 05551 Lotte World Tower, 300, Olympic-ro, Songpa-gu, Seoul, 05551 Rep. of KOREA

Telephone number :

Basic Chemicals	+82-2-829-4114	Advanced Materials	+82-31-596-3114
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Emergency phone number

Yeosu Plant	+82-61-688-2100	Ulsan Plant	+82-52-278-3500
Daesan Plant	+82-41-689-5900	Yeosu Plant(Advanced Materials)	+82-61-689-1100

Fax number : +82-2-834-6070

## 2. Hazards identification

1) Hazard classification

- Hazardous to the aquatic environment, long-term (chronic) Chronic 2

2) Allocation label elements

Hazard pictograms



Signal word

- NONE

Hazard statements

H411 Toxic to aquatic life with long lasting effects

Precautionary statements

- Prevention

P273 Avoid release to the environment.

- Response

P391 Collect spillage.

- Disposal

P501 Discard the contents/containers in accordance with the laws and laws related to waste.

3) Other hazards:

According to experience and information provided, this product does not affect harmful effects when using and handling it as a regulation.

### 3. Composition/Information on ingredients

Chemical name	Common name	CAS No.	Content(wt%)
2,6-Dimethylphenol homopolymer	-	25134-01-4	$\geq 50 \sim \leq 60$
Ethenylbenzene polymer with 1,3-butadiene	Styrene-butadiene copolymers	9003-55-8	$\geq 20 \sim \leq 30$
Glass, oxide	Glass, oxide, chemicals	65997-17-3	$\geq 15 \sim \leq 25$
Triphenyl phosphate	triphenyl phosphate	115-86-6	$\geq 3 \sim \leq 7$

### 4. First-aid measures

1) Following eye contact

- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Seek immediate medical assistance.

2) Following skin contact

- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Remove and isolate contaminated clothing and shoes.
- Seek immediate medical assistance.

3) Following inhalation

- Administer oxygen if breathing is difficult.

- Give artificial respiration if victim is not breathing.
  - Move to fresh air.
- 4) Following ingestion
- Seek immediate medical assistance.
- 5) Delayed and immediate effects and also chronic effects from short and long term exposure
- No data available
- 6) Advice to physician
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## 5. Fire-Fighting measures

- 1) Suitable (and unsuitable) extinguishing media
- Suitable extinguishing media
    - Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
    - Dry chemical.
    - CO2.
    - Regular foam.
    - Use dry sand or earth to smother fire.
    - Water spray.
  - Unsuitable extinguishing media
    - High-pressure water.
- 2) Special hazards arising from the substance or mixture
- Pyrolytic product
    - No data available
  - Risk of fire and explosion
    - Some may burn but none ignite readily.
    - Containers may explode when heated.
  - Other
    - May cause toxic effects if inhaled.
- 3) Special protective equipment for firefighters
- Dike fire-control water for later disposal; do not scatter the material.
  - Evacuate area and fight fire from a safe distance.
  - Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.
  - Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out.
  - Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
  - Move containers from fire area if you can do it without risk.
  - Substance may be transported hot.

## 6. Accident release measures

- 1) Personal precautions, protective equipment and emergency procedures
  - Clean up spills immediately, observing precautions in Protective Equipment section.
  - Do not touch or walk through spilled material.
  - Please note that materials and conditions to be avoided.
  - Prevent dust cloud.
  - Stop leak if you can do it without risk.
- 2) Environmental precautions
  - Keep out of waterways.
  - Prevent entry into waterways, sewers, basements or confined areas.
- 3) Methods and materials for containment and cleaning up
  - Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container.
  - Absorb the liquid and scrub the area with detergent and water.
  - Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
  - Large Spill: Dike far ahead of liquid spill for later disposal.
  - Small Spill: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
  - With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

## 7. Handling and storage

- 1) Precautions for safe handling
  - CAUTION: High temperature.
  - Follow all MSDS/label precautions even after container is emptied because they may retain product residues.
  - Handling refer to engineering control/personal protection section.
  - Please note that materials and conditions to be avoided.
- 2) Conditions for safe storage (including any incompatibilities)
  - Please note that materials and conditions to be avoided.
  - Store in a dry place. Store in a closed container.

## 8. Exposure controls & personal protection

- 1) Chemical exposure limits, Biological exposure standard

Components	ACGIH regulations	Biological limit values
Glass, oxide	No data available	No data available
Triphenyl phosphate	3 mg/m3 TWA	No data available

## 2) Appropriate engineering controls

- Ensure adequate ventilation and exhaust ventilation at the workplace.

## 3) Personal protective equipment

- Respiratory protection
  - If you have a direct contact or exposed to the material, wear the appropriate form of respiratory protection certified.
- Eye protection
  - If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
- Hand protection
  - Wear chemical safety gloves.
- Skin protection
  - Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

## 9. Physical and chemical information

Property name	Values	Source
Appearance		
Physical state	Soild	
Color	Depends on customer needs	
Odor	Odorless	
Odor threshold	No data available	
pH	No data available	
Melting point/freezing point	No data available	
Initial boiling point and boiling range(°C)	No data available	
Flash point(°C)	No data available	
Evaporation rate	No data available	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	No data available	
Vapour pressure	No data available	
Solubility(ies)	Insolubility	
Vapour density	No data available	
Relative density	No data available	
n-octanol/water partition coefficient	No data available	
Auto ignition temperature	400 °C over	
Decomposition temperature	No data available	
Viscosity(mm²/s, 40°C)	No data available	
Molecular weight(mass)	No data available	

Specific gravity	1.03 - 1.12	
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## 10. Stability and reactivity

### 1) Chemical stability and Possibility of hazardous reactions

- Containers may explode when heated.
- Fire may produce irritating and/or toxic gases.
- Some may burn but none ignite readily.

### 2) Conditions to avoid

- Heat, contamination.

### 3) Incompatible materials

- Combustible material

### 4) Hazardous decomposition products

- Irritating and/or toxic gas.

## 11. Toxicological information

### 1) Information on the likely routes of exposure

- No data available

### 2) Health hazard information

#### ○ Acute toxicity

- Acute toxicity(Oral) PRODUCT : Not classified(ATEmix = 4063.917mg/kg)

- Glass, oxide

: LD50> 2000 mg / kg experimental species: Rat, (route of administration: gavage, Female / Male, OECD TG 423, GLP)

- Triphenyl phosphate

: LD50 3800 mg / kg experimental species: Rat

- Acute toxicity(Dermal) PRODUCT : Not classified

- Triphenyl phosphate

: LD50> 7900 mg / kg experimental species: Rabbit

- Acute toxicity(Inhalation:Gases) PRODUCT : Not classified

- No data available

- Acute toxicity(Inhalation:Vapours) PRODUCT : Not classified

- No data available

- Acute toxicity(Inhalation:Dust/mist) PRODUCT : Not classified

- No data available

- Skin corrosion/irritation PRODUCT : Not classified
  - Glass, oxide
    - : Edema Score: 0/0, fully Restored, no irritant, Rabbit, OECD TG 404
  - Triphenyl phosphate
    - : Skin corrosion / irritation test with a rabbit, non-irritating (OECD TG 404, GLP)
- Serious eye damage/eye irritation PRODUCT : Not classified
  - Ethenylbenzene polymer with 1,3-butadiene
    - : Not irritating rabbit with experimental results (STANDARD DRAIZE TEST): mild (Mild, 500mg / 24H)
  - Glass, oxide
    - : No irritation, Human
  - Triphenyl phosphate
    - : Serious eye damage / irritation test with rabbits, unstimulated (conjunctival index = 0.3) (OECD TG 405, GLP)
- Respiratory sensitization PRODUCT : Not classified
  - No data available
- Skin sensitization PRODUCT : Not classified
  - Glass, oxide
    - : No hypersensitivity
  - Triphenyl phosphate
    - : Skin sensitization test using guinea pig, the non-sensitization (OECD TG 406, GLP)
- Carcinogenicity PRODUCT : Not classified
  - Ethenylbenzene polymer with 1,3-butadiene
    - : 3 (IARC)
  - Triphenyl phosphate
    - : A4 (ACGIH)
- Germ cell mutagenicity PRODUCT : Not classified
  - Glass, oxide
    - : In Vitro - Genetic Toxicity: Chinese Hamster Ovary (CHO))
  - Triphenyl phosphate
    - : Return using an in vitro microbial mutagenesis test result does not cause mutagenic
- Reproductive toxicity PRODUCT : Not classified
  - Triphenyl phosphate
    - : Targeting the rat first-generation reproduction toxicity test results, the highest concentration of no negative impact with respect to reproduction to the mother and the fetus was observed to (NOEL P = 690 mg / kg bw / day (actual dose received)) (OECD TG 415) inhalation intended for rabbit fetal developmental toxicity test (OECD TG 414, GLP), hayeoteum the pyeyeop member generating high in 200mg / kg concentration group (NOAEC (maternal toxicity)> = 200 mg / kg bw / day (actual dose received ), NOAEC (developmental toxicity)> = 200 mg / kg bw / day (actual dose received))
- Specific target organ toxicity single exposure PRODUCT : Not classified

- No data available

○ Specific target organ toxicity repeated exposure PRODUCT : Not classified

- Glass, oxide

: Inhalation (Ambassietic): The rat was exposed to the inhalation of the E-glass fine fibers (Code 104E) fibers for 7 hours for a maximum of 1, 3 days, 8 days or 14 days of actual exposure. 3 weeks. After sacrificing the lungs, BAL fluid was examined for the total concentration of total cells, granules and the total concentration of proteins. This analysis showed that the total number of cells, granule fraction and total protein concentration gradually increased as the accumulated repetition exposure period increases. The data represents the induction of inflammatory reactions even after 7 hours of exposure. In addition, the analysis of the number of proliferation cells per MM bronchial duct was used to investigate the analysis of the number of proliferation cells per MM bronchial duct using BRDU DNA labeling to significantly increase the number of proliferative cells in the lungs of animals exposed to E-glass fine fibers ( $p < 0.05$ ) (Note). controls). This also represents inflammatory response in lung reality. In conclusion, the study data indicates that the inhalation of the E-glass fine fibers can lead to inflammation reactions in the lungs of the ripple after repeated exposure of a single exposure or 3 to 14 days. Rats were exposed to inhalation of E-Glass Microfiber (CODE 104E) fibers for 7 hours a day for actual exposure for up to 1, 3, 8 or 14 days. 3 weeks. After sacrificing the lungs, the BAL fluid investigated the total concentration of total cells, granules fractions and proteins. This analysis showed that the longer the accumulated repetition period, the longer the total cell, the granules fraction and the total protein concentration gradually increased. This result shows the induction of inflammatory reactions even after 1 day exposure of 7 hours. Further, as a result of analyzing the number of proliferation cells per MM bronchi, using the BRDU DNA label, the number of proliferation cells was significantly increased in the lungs of the animal exposed to the E-Glass fine fibers (statistically significant in  $P < 0.05$  appear). This is known to exhibit inflammatory reactions in waste propeller. In conclusion, research data indicates that the suction of E-Glass fine fibers can lead to inflammatory responses in the lungs of mice after a single or 3 to 14 days after repetition exposure. As a result of exposed to 650 ppm concentrations, resulting in the brain and thymus lesions of deaths are found. In the exposed rat (male), which is exposed to 650 ppm for 14 weeks, the cause of death occurred because such degenerative lesions are not observed. However, half of the survivors of the 650 ppm group had neuronal deadlocks or malaria in the body stenomed by the brain. The lesions of the central nervous system have been accompanied by nerve behavior. It has been found that each rat exposed to 2,4-pentane dion representing the abnormality during the modified IRWIN screening test has been shown to have brain damage. Generally, the opposite of this statement was true. Exceptionally, two men are exposed to 650 ppm, showing normal reactions with brain malaria during IRWIN tests. In addition, some females exposed to 650 ppm showed acute degeneration of nuclear and displacement temperatures, but died before performing awareness testing. Since the results of electron microscopy test in sciatic nerve preparation were negative, the neurotoxic effect of 2,4-pentane dion appears to be a central rather than peripheral. Description of the difference in mortality rate of men and women (each 650 ppm exposure group, 30% for men and women) is not known. The difference between gender may be related to brain thiamine, folic acid and / or flute single concentration. The proposed mechanism of 2,4-pentane di-toxicity is because B vitamins or the non-activation of the bonding is not activated. Concentration of repetition



exposure to 2,4-pentane dion - Reaction profile is very clear ....

- Triphenyl phosphate

: 90-day repeated administration rodent targeting rat oral toxicity test results, 7500ppm (583 mg / kg bw / day (male), 632 mg / kg bw / day (female)), weight increase and the red brown color of the liver between the concentration group of the discoloration was observed (NOAEL (number) = 105 mg / kg bw / day, NOAEL (female) = 117 mg / kg bw / day (OECD TG 408, GLP) intended for rabbit 21/28 day dermal toxicity test , the special effect is not observed (EPA OPPTS 870.3200). NOAEL = 1000 mg / kg bw / day

○ Aspiration hazard PRODUCT : Not classified

- No data available

## 12. Ecological information

### 1) Ecotoxicity

- Fish

- Glass, oxide

- : LC50> 1000 mg / ℓ 96 hr, (OECD TG 203, ring Formula test i.e. all test media were changed every 24 hours, fresh water, GLP)

- Triphenyl phosphate

- : LC50 0.4 mg / ℓ 96 hr Oncorhynchus mykiss (EPA 660 / 3-75-009)

- Crustaceans

- Glass, oxide

- : NOEC ≥1000 mg / ℓ 3 day Daphnia magna, (OECD TG 202, ring formulas, fresh water, GLP)

- Triphenyl phosphate

- : LC50 0.18 mg / ℓ 96 hr Mysidopsis bahia (EPA 660 / 3-75-009)

- Aquatic algae

- Glass, oxide

- : NOEC ≥1000 mg / ℓ 3 day, (OECD TG 201, ring formulas, GLP)

- Triphenyl phosphate

- : NOEL 0.25 mg / ℓ 72 hr Selenastrum capricornutum (NOEC: 0.25 mg / L)

### 2) Persistence and degradability

- Degradability

- No data available

- Biodegradation

- Triphenyl phosphate

- : 94% ~ 83% 28 day (OECD Guideline 301 C)

### 3) Bioaccumulative potential

- n-octanol water partition coefficient

- 2,6-Dimethylphenol homopolymer

- : (Not applicable)

- Triphenyl phosphate

- : 4.59 log Kow

- Bioconcentration factor(BCF)
  - Triphenyl phosphate
  - : 144

4) Mobility in soil

No data available

5) Other adverse effects

No data available

## 13. Disposal considerations

1) Disposal methods

- Empty containers should be taken to an approved waste handling site for recycling or disposal.

2) Precautions (including disposal of contaminated container or package)

- Dispose of in accordance with local regulations.
- Send to a licensed waste management company.

## 14. Transport information

1) UN No. : Not applicable

2) Proper shipping name : Not applicable

3) Hazard class : Not applicable

4) Packing group : Not applicable

5) Marine pollutant : No

6) Special precautions for user related to transport or transportation measures :

Emergency measures in case of fire : Not applicable

Emergency measures in the effluent : Not applicable

- ADR

- Tunnel restriction code : Not applicable

- IMDG

- Marine pollutant : No

- Air transport(IATA)

- UN No. : Not applicable
- Proper shipping name : Not applicable
- Class or division : Not applicable
- Packing group : Not applicable

## 15. Regulatory information

Australia Industrial Chemicals Act

- Not applicable

China Inventory of Existing Chemical Substances (IECSC)

- Inventory - China - Inventory of Existing Chemical Substances (IECSC)
  - 2,6-Dimethylphenol homopolymer : Present [21772]
  - Ethenylbenzene polymer with 1,3-butadiene : Present [05854]
  - Glass, oxide : Present [04789]
  - Triphenyl phosphate : Present [22535]

92/32/EEC

- Not applicable

European Union Official Journal of the European Communities 15 June 1990 - Annex Based on Article 13 of Directive 67/548/EEC Amended by Directive 79/831/EEC

- Inventory - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
  - Glass, oxide : 266-046-0
  - Triphenyl phosphate : 204-112-2

Japan Law Concerning the Examination and Regulations of Manufacture, etc. of Chemical Substances

- Inventory - Japan - Existing and New Chemical Substances (ENCS)
  - 2,6-Dimethylphenol homopolymer : (7)-1241, (4)-57, (3)-521
  - Ethenylbenzene polymer with 1,3-butadiene : (6)-134
  - Triphenyl phosphate : (3)-2522, (3)-3363

New Zealand Environmental Protection Authority, Inventory of Chemicals

- Inventory - New Zealand - Inventory of Chemicals (NZIoC)
  - 2,6-Dimethylphenol homopolymer : May be used as a component in a product covered by a group standard but it is not approved for use as a chemical in its own right
  - Ethenylbenzene polymer with 1,3-butadiene : May be used as a single component chemical under an appropriate group standard
  - Glass, oxide : May be used as a single component chemical under an appropriate group standard
  - Triphenyl phosphate : HSNO Approval: HSR003099

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

#### Taiwan Chemical Substance Inventory

- Inventory - Taiwan - Taiwan Chemical Substance Inventory (TCSI)

- 2,6-Dimethylphenol homopolymer : Present
- Ethenylbenzene polymer with 1,3-butadiene : Present
- Glass, oxide : Present
- Triphenyl phosphate : Present

#### U.S. Toxic Substances Control Act

#### Vietnam National Chemicals Inventory (NCI)

- Inventory - Vietnam - National Chemicals Inventory (NCI) (DRAFT)

- 2,6-Dimethylphenol homopolymer : Present 15995
- Ethenylbenzene polymer with 1,3-butadiene : Present 12124
- Glass, oxide : Present 21278
- Triphenyl phosphate : Present 02237

## 16. Other information

### 1) Reference

NCIS, KOSHA, Montreal Protocol, ECHA, OECD SIDS, EU IUCLID, HSDB(PubChem), NITE, NTP, ACGIH, IARC, NIOSH, ChemIDplus, EPA, EPI Suite, INCHEM

### 2) Issue date : 26-12-2022

### 3) Revision date

- Revised date count : 2-1
- Last revised date : 26-12-2022