

# Safety Data Sheet(SDS)

: 26-08-2024

Last revised date : 26-12-2022

## 1. Identification

1) Product identifier : PC/ABS\_FR ABF-1030G

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 3

2) Allocation label elements

Hazard pictograms

- Not applicable

Signal word

- NONE

Hazard statements

H412 Harmful to aquatic life with long lasting effects

## Precautionary statements

### 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%)
2,2-Bis(4-hydroxyphenyl) propane polycarbonate	Poly[oxy-carbonyloxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene]	24936-68-3	$\geq 77 \sim \leq 87$
Phosphoric trichloride reaction products with bisphenol A and phenol	Phosphoric trichloride, reaction products with bisphenol A and phenol	181028-79-5	$\geq 7 \sim \leq 17$
2-Propenenitrile polymer with 1,3-butadiene and ethenylbenzene	ABS Resin	9003-56-9	$\geq 2 \sim \leq 12$
Zinc oxide	zinc oxide	1314-13-2	$\geq 1 \sim \leq 2.5$

## 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
  - CO<sub>2</sub>.
  - Dry chemical.
  - Regular foam.
  - Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
  - 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
  - Containers may explode when heated.
  - Some may burn but none ignite readily.
- 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

- Please note that materials and conditions to be avoided.
- 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.

### 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
Zinc oxide	2 mg/m <sup>3</sup> TWA (respirable particulate matter) 10 mg/m <sup>3</sup> STEL (respirable particulate matter)	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	solid	
Color	Depends on customer needs	
Odor	odourless	
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)	No data available	
Vapour density	No data available	
Relative density	No data available	
n-octanol/water partition coefficient	No data available	
Auto ignition temperature	No data available	
Decomposition temperature	over 400	
Viscosity(mm²/s, 40°C)	No data available	
Molecular weight(mass)	No data available	
Specific gravity	1.1-1.3	

## 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
    - Zinc oxide
    - : LD50> 5000 mg / kg experimental species: Rat, (the route of administration: gavage, male / female male, OECD TG 401)
  - Acute toxicity(Dermal) PRODUCT : Not classified
    - Zinc oxide
    - : LD50> 2000 mg / kg experimental species: Rat, (female / male, OECD TG 402, GLP)
  - Acute toxicity(Inhalation:Gases) PRODUCT : Not classified
    - Zinc oxide
    - : LC50> 5700 mg / m<sup>3</sup> 4 hr experimental species: Rat, (female / male, OECD TG 403)
  - 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
  - Zinc oxide
  - : Not irritant, Rabbit
- Serious eye damage/eye irritation PRODUCT : Not classified
  - Zinc oxide
  - : Not irritant, Rabbit, 72-hour fully reversible, EU Method B.5
- Respiratory sensitization PRODUCT : Not classified
  - No data available
- Skin sensitization PRODUCT : Not classified
  - Zinc oxide
  - : Sensitization No, Guinea pig, GLP, female, guinea pig maximization test (GMPT): dose levels: 0.02, reaction: 0/10, OECD TG 406
- Carcinogenicity PRODUCT : Not classified

- No data available
- Germ cell mutagenicity PRODUCT : Not classified
  - Zinc oxide
    - : in vitro - reverse mutation test using bacteria: Negative (S. typhimurium TA1535, TA1537, TA98, TA100, irrespective of metabolic activation system), OECD TG 471
- Reproductive toxicity PRODUCT : Not classified
  - Zinc oxide
    - : May be regarded, under the test conditions, maturity, mating, pregnancy and early lactation showed in adults, and 30, 15 mg / kg / d, effects which, natjiman appear in the 7.5 mg / kg / d that is not substantially important. NOAEL = 7.5 mg / kg / d, equivalent or similar to Guideline: OECD TG 416, under the test conditions, of up to 88 mg / kg of zinc sulfate (about 35.2 mg or 19.9 mg Zn<sup>2+</sup> / kg bw, for the anhydrous and monohydrate) of when administered adult hamsters and fetal no negative side effects., hamster
- Specific target organ toxicity single exposure PRODUCT : Not classified
  - Zinc oxide
    - : Oral: toxic side effects without signs (rat / male / female / equivalent or similar guidelines: OECD TG 401)
    - dermal: general discomfort some signs commonly found in dermal toxicity studies, the overall health status is also good throughout the entire study / over is not found (rat / male / female / OECD TG 402 / GLP)
    - inhalation: nateu dirty hair appears on the head or side effects were observed (rat / male / female / equivalent or similar to Guideline :. OECD TG 403)
- Specific target organ toxicity repeated exposure PRODUCT : Not classified
  - Zinc oxide
    - : Orally (sub-chronic): NOAEL = 31.52 mg / kg-bw / day (. Approx 13.26 mg Zn<sup>2+</sup> / kg-bw / day), Rat, OECD TG 408, GLP transdermal (short repeated): After a percutaneous exposure through the rat, on the basis of the decrease of collagen content, LOAEL for systemic toxicity natjiman show the lowest test dose of 75 mg / kg bw / day, these effects are reversible been a period of 14 days, Rat, OECD TG 410 suction ( sub-chronic): under the experimental conditions, NOAEL was 1.5 mg / m<sup>3</sup> to be evaluated, Rat, OECD TG 413, GLP
- Aspiration hazard PRODUCT : Not classified
  - No data available

## 12. Ecological information

### 1) Ecotoxicity

- Fish
  - 2-Propenenitrile polymer with 1,3-butadiene and ethenylbenzene
    - : LC50 11.5 mg / ℓ 96 hr Pimephales promelas
  - Zinc oxide
    - : LC50 315 µg / ℓ 96 hr Thymallus arcticus , (ASTM, exponential expression, fresh water)
  - Phosphoric trichloride reaction products with bisphenol A and phenol
    - : LC50 40.287 mg / ℓ 96 hr (ECOSAR: Phenols)

- Crustaceans
  - Zinc oxide
    - : LC50 1220 µg / ℓ 48 Hr Daphnia Magna, (US EPA / 600 / 4-85 / 013, Exponential, freshwater, GLP)
  - Phosphoric trichloride reaction products with bisphenol A and phenol
    - : LC50 15.340 mg / ℓ 48 hr (ECOSAR: Phenols)
- Aquatic algae
  - Zinc oxide
    - : EC10 350 µg / ℓ 48 hr Chlorella sp. , (Exponential manner, fresh water)
  - Phosphoric trichloride reaction products with bisphenol A and phenol
    - : EC50 69.098 mg / ℓ 96 hr (ECOSAR: Phenols)

## 2) Persistence and degradability

- Biodegradation
  - Zinc oxide
    - : 100 (%) 40 hr
  - Phosphoric trichloride reaction products with bisphenol A and phenol
    - : (Recalcitrant (Biowin 1,2,5,6,7))

## 3) Bioaccumulative potential

- n-octanol water partition coefficient
  - Phosphoric trichloride reaction products with bisphenol A and phenol
    - : 2.21 log Kow
- Bioconcentration factor(BCF)
  - Zinc oxide
    - : 0.002 BCF,
  - Phosphoric trichloride reaction products with bisphenol A and phenol
    - : 2.011

## 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 of package)

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



## 14. Transport information

- 1) UN No. : No data available
- 2) Proper shipping name : No data available
- 3) Hazard class : No data available
- 4) Packing group : No data available
- 5) Marine pollutant : No data available
- 6) Special precautions for user related to transport or transportation measures :
  - Emergency measures in case of fire : No data available
  - Emergency measures in the effluent : No data available
- ADR
  - Tunnel restriction code : No data available
- IMDG
  - Marine pollutant : No data available
- Air transport(IATA)
  - UN No. : No data available
  - Proper shipping name : No data available
  - Class or division : No data available
  - Packing group : No data available

## 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-Propenenitrile polymer with 1,3-butadiene and ethenylbenzene : Present [03641]
  - 2,2-Bis(4-hydroxyphenyl) propane polycarbonate : Present [21562]
  - Zinc oxide : Present [37649]
  - Phosphoric trichloride reaction products with bisphenol A and phenol : Present [29464]

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)

- Zinc oxide : 215-222-5

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

- Inventory - Japan - Existing and New Chemical Substances (ENCS)

- 2-Propenenitrile polymer with 1,3-butadiene and ethenylbenzene : (6)-176

- 2,2-Bis(4-hydroxyphenyl) propane polycarbonate : (7)-738

- Zinc oxide : (1)-561

- Phosphoric trichloride reaction products with bisphenol A and phenol : (3)-4400

#### New Zealand Environmental Protection Authority, Inventory of Chemicals

- Inventory - New Zealand - Inventory of Chemicals (NZIoC)

- 2-Propenenitrile polymer with 1,3-butadiene and ethenylbenzene : May be used as a single component chemical under an appropriate group standard

- 2,2-Bis(4-hydroxyphenyl) propane polycarbonate : May be used as a single component chemical under an appropriate group standard

- Zinc oxide : HSNO Approval: HSR003104

- Phosphoric trichloride reaction products with bisphenol A and phenol : May be used as a single component chemical under an appropriate group standard

#### Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

#### Taiwan Chemical Substance Inventory

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

- 2-Propenenitrile polymer with 1,3-butadiene and ethenylbenzene : Present

- 2,2-Bis(4-hydroxyphenyl) propane polycarbonate : Present

- Zinc oxide : Present

- Phosphoric trichloride reaction products with bisphenol A and phenol : Present

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

#### Vietnam National Chemicals Inventory (NCI)

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

- 2-Propenenitrile polymer with 1,3-butadiene and ethenylbenzene : Present 12125

- 2,2-Bis(4-hydroxyphenyl) propane polycarbonate : Present 15829

- Zinc oxide : Present 06676

- Phosphoric trichloride reaction products with bisphenol A and phenol : Present 29061

## 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

### 4) Other

ACGIH : American Conference of Governmental Industrial Hygienists  
ADR : Agreement Concerning the International Carriage of Dangerous Goods by Road  
ATE : The Acute Toxicity Estimate  
ECHA : European Chemicals Agency  
EPA : United States Environmental Protection Agency  
EPI Suite : The Estimation Programs Interface for Windows  
EU IUCLID : International Uniform Chemical Information Database  
HSDB : Hazardous Substances Data Bank  
IARC : International Agency for Research on Cancer  
IATA : International Air Transport Association  
IMDG : International Maritime Dangerous Goods Codes  
INCHEM : Internationally Peer Reviewed Chemical Safety Information  
M-Factor : The Multiplication Factor  
NIOSH : National Institute of Occupational Safety and Health  
NITE : National Institute of Technology and Evaluation(JAPAN)  
NTP : National Toxicology Program  
SCL : Specific Concentration Limit  
OECD SIDS : Organization for Economic Co-operation and Development Screening Information Dataset