

Safety Data Sheet(SDS)

Last revised date : 26-12-2022

1. Identification

- 1) Product identifier : PC/ABS FR EF-1101
- 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
- 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
- Not applicable
- 2) Allocation label elements
- Hazard pictograms
- Not applicable
- Signal word
- NONE
- Hazard statements
- Not applicable

Precautionary statements

- Not applicable

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	-	24936-68-3	>=60 ~ <=70
polymer with 1,3-butadiene and ethenylbenzene	ABS Resin	9003-56-9	>=15 ~ <=25
Talc (Mg ₃ H ₂ (SiO ₃) ₄)	-	14807-96-6	>=5 ~ <=15
Phosphoric trichloride reaction products with bisphenol A and phenol	-	181028-79-5	>=5 ~ <=15

4. First-aid measures

1) Following eye contact

- Call a physician immediately.

2) Following skin contact

- Get medical attention if irritation develops and persists.
- Remove contaminated clothing and shoes.

3) Following inhalation

- If symptoms persist, call a physician.
- Move to fresh air.

4) Following ingestion

- If accidentally swallowed obtain immediate medical attention.

5) Delayed and immediate effects and also chronic effects from short and long term exposure

No data available

6) Advice to physician

- In the case of accident or if you feel unwell, seek medical advice immediately.

5. Fire-Fighting measures

- 1) Suitable (and unsuitable) extinguishing media
 - Suitable extinguishing media
 - Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 - Unsuitable extinguishing media
 - Do not use a solid water stream as it may scatter and spread fire.
- 2) Special hazards arising from the substance or mixture
 - Pyrolytic product
 - No data available
 - Risk of fire and explosion
 - Heating or fire can release toxic gas.
 - Other
 - May cause toxic effects if inhaled.
- 3) Special protective equipment for firefighters
 - In the event of fire, wear self-contained breathing apparatus.

6. Accident release measures

- 1) Personal precautions, protective equipment and emergency procedures
 - Avoid dust formation.
- 2) Environmental precautions
 - Try to prevent the material from entering drains or water courses.
- 3) Methods and materials for containment and cleaning up
 - Keep in suitable, closed containers for disposal.
 - Pick up and arrange disposal without creating dust.

7. Handling and storage

- 1) Precautions for safe handling
 - For personal protection see section 8.
 - Smoking, eating and drinking should be prohibited in the application area.
- 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
Talc (Mg ₃ H ₂ (SiO ₃) ₄)	2 mg/m ³ TWA (particulate matter containing no asbestos and <1% crystalline silica, respirable partic	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 (water)	
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	400°C over	
Viscosity(mm ² /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

- No decomposition if stored and applied as directed.
- Stable at normal ambient temperature and pressure.

2) Conditions to avoid

- Follow precautionary advice and avoid incompatible materials and conditions

3) Incompatible materials

- Combustible material

4) Hazardous decomposition products

- This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regula

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 = 4270.209mg/kg)
 - Talc (Mg₃H₂(SiO₃)₄)
 - : LD50> 5000 mg / kg experimental species: Rat, (the route of administration: gavage, male, OECD TG 423, GLP)
- Acute toxicity(Dermal) PRODUCT : Not classified
 - Talc (Mg₃H₂(SiO₃)₄)
 - : LD50> 2000 mg / kg experimental species: Rat, (female / male, OECD TG 402, GLP)
- 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
 - Talc (Mg₃H₂(SiO₃)₄)
 - : LC50> 2.1 mg / l 4 hr Experimental Arts: RAT (similar substance test data)
- Skin corrosion/irritation PRODUCT : Not classified
 - Talc (Mg₃H₂(SiO₃)₄)
 - : relative tissue viability (%): 112.9, no irritation, human, EU Method B.46
- Serious eye damage/eye irritation PRODUCT : Not classified
 - Talc (Mg₃H₂(SiO₃)₄)
 - : Sensitization No, Rat, in vivo, male, Not irritant, Rabbit, corneal opacity (0), Iris (0), conjunctival hyperemia (1.2), conjunctival edema (0.7), OECD TG 405
- Respiratory sensitization PRODUCT : Not classified
 - No data available
- Skin sensitization PRODUCT : Not classified
 - Talc (Mg₃H₂(SiO₃)₄)
 - : Sensitization No, Guinea pig, female, OECD TG 406
- Carcinogenicity PRODUCT : Not classified
 - Talc (Mg₃H₂(SiO₃)₄)
 - : 3 (IARC)
 - A4 (ACGIH)
 - Only in the case of the talc containing asbestos is 1A (Notice of Ministry of Employment and Labor)
- Germ cell mutagenicity PRODUCT : Not classified
 - Talc (Mg₃H₂(SiO₃)₄)
 - : in vivo - gene mutation tests with mammalian germ cells: negative (rat, male), OECD TG 478 in vitro - Chromosome aberration test using mammalian cells: negative (rat pleural mesothelial cells (RPMC), without metabolic activation system), OECD TG 473 , EU Method B.10
- Reproductive toxicity PRODUCT : Not classified
 - Talc (Mg₃H₂(SiO₃)₄)
 - : There was no negative impact on the result of prenatal administration of talc / kg body weight of 900 mg daily to pregnant rabbits on gestation 6-18 days. Dose-related effect on the reproductive function did not appear. Search NOAEL is considered to be 900 mg / kg bw / day in reproductive toxicity studies. Guidelines: There were OECD TG 416, GLP equal or similar NOAEL (developmental toxicity) = 1600 mg / kg bw / day, 1600 mg / kg bw talc administered in corn oil did not affect the reproductive, developmental indicators, maternal, no effect on fetal survival, rat, GLP
- Specific target organ toxicity single exposure PRODUCT : Not classified
 - Talc (Mg₃H₂(SiO₃)₄)
 - : Oral: No Observed clinical signs / special pathological abnormality is not detected (rat / male / OECD TG

423 / GLP) dermal: Test item is a single dose to one female (n ° 14) on the 3rd and the 4th after applying it showed a slight irritation (mild scratches) signs. The observed clinical signs were found only on the day of application, which may be partly due to. The stress caused by the application process. These signs include the following: 2, 3 and a female 4 hours (n ° 15) and 1, 2, 3, and red emission nose for three males (n ° 21, 23, 24) for 4 hours. After 30 minutes and 1 hour immediately appear diarrhea in one male (n ° 21). Women No. 14 at necropsy showed the organizational change in bowel filled with liquid. Was not observed clinically during the exposure manifestations: The findings showed only one of the animals, because there was no connection with specific clinical symptoms, tests and show that there are no relevant (rat / male / female / OECD TG 402 / GLP) Inhalation . After exposure, eyelid ptosis and congenital expression was observed in the two males and one female only one day (rat / male / female / OECD TG 403 / GLP)

○ Specific target organ toxicity repeated exposure PRODUCT : Not classified

- Talc (Mg₃H₂(SiO₃)₄)

: Orally (Chronic): The result of oral exposure using Talc as feed for 101 days with a rat (female / male), NOAEL was 100 mg / kg / day yeoteum. Were common toxicity endpoint, there was no side effects, one of the animals treated with talc it has boyeoteum above leiomyosarcoma. But twenty-six kinds unrelated to the processing of talc found in the uterus of the two animals. Well not a rat chronic pathological effects associated with oral administration, Rat, OECD TG 452 Inhalation (chronic) through rats, day 6, and 12 months respirable dust 10.8 mg talc / m³ density for 7.5 hours, 5 days a week between the exposure result , the two groups with a treatment period of 6 months and 12 months, indicating a high mortality rate. Was 50% of the animals died during treatment in both groups, exposure to the test substance should result in a marked fibrosis. Being of the animals exposed to 24 in one lung adenoma detection, Rat, OECD TG 452

○ Aspiration hazard PRODUCT : Not classified

- No data available

12. Ecological information

1) Ecotoxicity

- Fish

- Talc (Mg₃H₂(SiO₃)₄)

- : LC50 89581.016 mg / ℓ 96 hr Fishes Species , (QSAR, exponential type)

- Phosphoric trichloride reaction products with bisphenol A and phenol

- : LC50 40.287 mg / ℓ 96 hr (ECOSAR: Phenols)

- polymer with 1,3-butadiene and ethenylbenzene

- : LC50 11.5 mg / ℓ 96 hr Pimephales promelas

- Crustaceans

- Talc (Mg₃H₂(SiO₃)₄)

- : LC50 36812.359 mg / ℓ 48 hr daphnids Species , (QSAR model, QSAR model, fresh water)

- Phosphoric trichloride reaction products with bisphenol A and phenol

- : LC50 15.340 mg / ℓ 48 hr (ECOSAR: Phenols)

- Aquatic algae

- Talc (Mg₃H₂(SiO₃)₄)

: EC50 7202.7 mg / ℓ 96 hr Green algae , (QSAR model, QSAR model, fresh water)

- Phosphoric trichloride reaction products with bisphenol A and phenol

: EC50 69.098 mg / ℓ 96 hr (ECOSAR: Phenols)

2) Persistence and degradability

- Degradability

No data available

- Biodegradation

- Phosphoric trichloride reaction products with bisphenol A and phenol

: (Recalcitrant (Biowin 1,2,5,6,7))

3) Bioaccumulative potential

- n-octanol water partition coefficient

- Talc (Mg₃H₂(SiO₃)₄)

: -9.4 log Kow , (log Pow, 25 °C)

- Phosphoric trichloride reaction products with bisphenol A and phenol

: 2.21 log Kow

- Bioconcentration factor(BCF)

- Talc (Mg₃H₂(SiO₃)₄)

: 3.162 BCF , (ℓ / kg)

- 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. : 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)

- Talc ($Mg_3H_2(SiO_3)_4$) : Present [14442]

- Phosphoric trichloride reaction products with bisphenol A and phenol : Present [29464]

- polymer with 1,3-butadiene and ethenylbenzene : Present [03641]

- 2,2-Bis(4-hydroxyphenyl)propane polycarbonate : Present [21562]

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)

- Talc ($Mg_3H_2(SiO_3)_4$) : 238-877-9

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

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

- Talc ($Mg_3H_2(SiO_3)_4$) : (1)-468

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

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

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

New Zealand Environmental Protection Authority, Inventory of Chemicals

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

- Talc ($Mg_3H_2(SiO_3)_4$) : May be used as a single component chemical under an appropriate group standard

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

- 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

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

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

- Talc ($Mg_3H_2(SiO_3)_4$) : Present

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

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

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

Vietnam National Chemicals Inventory (NCI)

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

- Talc ($Mg_3H_2(SiO_3)_4$) : Present 13975

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

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

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

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

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