

Safety Data Sheet(SDS)

Last revised date : 26-12-2022

1. Identification

- 1) Product identifier : PC/ABS FR NH-1000T
- 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
- 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%)
2,2-Bis(4-hydroxyphenyl)propane	Poly[oxycarbonyloxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene]	24936-68-3	$\geq 60 \sim \leq 70$
polymer with 1,3-butadiene and ethenylbenzene	ABS Resin	9003-56-9	$\geq 20 \sim \leq 30$
Triphenyl phosphate	triphenyl phosphate	115-86-6	$\geq 1 \sim \leq 11$

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
 - CO2.
 - Regular foam.
 - Dry chemical.
 - 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
 - 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
Triphenyl phosphate	3 mg/m ³ 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 (water)	
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	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

- 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 = 4445.168mg/kg)

- 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

- Triphenyl phosphate
: Skin corrosion / irritation test with a rabbit, non-irritating (OECD TG 404, GLP)

○ Serious eye damage/eye irritation PRODUCT : Not classified

- 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
 - Triphenyl phosphate
 - : Skin sensitization test using guinea pig, the non-sensitization (OECD TG 406, GLP)
- Carcinogenicity PRODUCT : Not classified
 - Triphenyl phosphate
 - : A4 (ACGIH)
- Germ cell mutagenicity PRODUCT : Not classified
 - 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
 - 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
 - polymer with 1,3-butadiene and ethenylbenzene
 - : LC50 11.5 mg / ℓ 96 hr Pimephales promelas
 - Triphenyl phosphate

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

- Crustaceans

- Triphenyl phosphate

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

- Aquatic algae

- 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

- 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 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

- remarks:

Triphenyl phosphate의 용출시험(OECD TG 120, Solution/Extraction Behaviour of Polymers in Water) 결과, Triphenyl phosphate는 미검출 되었습니다. 수생환경 유해성 분류(2번 항목) 및 Triphenyl phosphate의 환경에 미치는 영향(12번 항목)은 사용자에게 정보제공 차원으로 작성한 사항이며, 해당 제품은 수생환경에 유해하지 않다고 판단하여 운송에 위험한 물질로 분류하지 않았습니다.(14번 항목)

15. Regulatory information

Australia Industrial Chemicals Act

- Not applicable

China Inventory of Existing Chemical Substances (IECSC)

● Inventory - China - Inventory of Existing Chemical Substances (IECSC)

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

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

- 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)

- 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)

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

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

- Triphenyl phosphate : (3)-2522, (3)-3363

New Zealand Environmental Protection Authority, Inventory of Chemicals

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

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

- 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)

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

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

- Triphenyl phosphate : Present

Vietnam National Chemicals Inventory (NCI)

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

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

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

- 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