Safety Data Sheet(SDS)

Last revised date : 19-01-2023

1. Identification

1) Product identifier : ABS HF-0690 M

2) Recommended use of the chemical and restrictions on use

○ Recommended use of the chemical

Others(Synthetic Resin Plastics)

○ Restrictions on use

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

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%)
polymer with 1,3-butadiene and ethenylbenzene	ABS Resin	9003-56-9	>=96.5 ~ <=99.9
N,N'-ethylenedi(stearamide)	N,N'-ethylenedi(stearamide)	110-30-5	>=0.8 ~ <=3
기타첨가제			>=0.001 ~ <=2
Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate	octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	2082-79-3	>=0.05 ~ <=0.5

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

- Regular foam.
- CO2.
- Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
- Dry chemical.
- 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

- Contains no substances with occupational exposure limit values.

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	Not applicable	
pH	Not applicable	
Melting point/freezing point	Not applicable	
Initial boiling point and boiling range(℃)	Not applicable	
Flash point(℃)	Not applicable	
Evaporation rate	Not applicable	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	No data available	
Vapour pressure	Not applicable	
Solubility(ies)	Insolubility	
Vapour density	Not applicable	
Relative density	No data available	
n-octanol/water partition coefficient	Not applicable	
Auto ignition temperature	Not applicable	
Decomposition temperature	≥ 400℃	
Viscosity(㎟/s, 40℃)	Not applicable	
Molecular weight(mass)	50,000 - 250,000 (Active)	
Specific gravity	1.00 ~ 1.10	

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
  - N,N'-ethylenedi(stearamide)
    : LD50> 5000 ㎎ / ㎏
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : LD50> 2000 ㎎ / ㎏ experimental species: Rat
- Acute toxicity(Dermal) PRODUCT : Not classified
  - N,N'-ethylenedi(stearamide)
    : LD50> 2000 ㎎ / ㎏
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : LD50> 2000 ㎎ / ㎏ experimental species: Rat
- 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
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : LC50> 1.81 ㎎ / ℓ 4 hr experiment Species: Rat

○ Skin corrosion/irritation PRODUCT : Not classified

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
  : There is only a very slight irritation: Rabbit, recovered within 7 days

○ Serious eye damage/eye irritation PRODUCT : Not classified

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
  : Irritation: test stimulation index: 4/110

○ Respiratory sensitization PRODUCT : Not classified

- No data available

○ Skin sensitization PRODUCT : Not classified

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
  : Guinea Pig: 3 weeks 3 intradermal injection, using 20 animals, no emotional reaction

○ Carcinogenicity PRODUCT : Not classified

- No data available

○ Germ cell mutagenicity PRODUCT : Not classified

- N,N'-ethylenedi(stearamide)
  : In vitro / audio
- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
  : Reverse mutation test: negative, TA98, TA100, TA1535, TA1537, voice over chromosomes with or without metabolic activation system applied in a used WP2uvrA hyayeo 4.1-1000㎍ / plate density test: Metabolic activity in voice, 10-100㎍ / ml with or without speech-based application-Dominant lethal in vivo assay: voice, NMRI mouse: 1000-3000 mg / kg bw Somatic mutation assay: voice, chinese hamster: 500-2000 mg / kg bw

○ Reproductive toxicity PRODUCT : Not classified

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
  : Rat: 2-generation reproductive toxicity study Reproductive toxicity: NOAEL 315mg / kg bw / day (up to a concentration probably has no effect), NOAEL for pup development: reduced newborn (96-111mg / kg bw / day's survival and growth at the highest concentration)

○ Specific target organ toxicity single exposure PRODUCT : Not classified

- No data available

○ Specific target organ toxicity repeated exposure PRODUCT : Not classified

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
  : rat (dust / mist inhalation, 21 days 5 days, 6 hours of exposure to one day per week): NOAEL> 0.543mg / L (EU IUCLID), Rat: NOEL 30mg / kg bw / day 28 day 0, 5, 30 , gavage result of exposure to 100 and 300 mg 100, 300mg / kg bw / day group weight gain between the male 100, increases in Microsomal enzymes group 300 and the female 300mg / kg bw / day group

○ Aspiration hazard PRODUCT : Not classified

- No data available

12. Ecological information

1) Ecotoxicity

- Fish
  - polymer with 1,3-butadiene and ethenylbenzene
    : LC50 11.5 ㎎ / ℓ 96 hr Pimephales promelas
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : LC50 100 ㎎ / ℓ 96 hr Lepomis macrochirus
- Crustaceans
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : EC50 100 ㎎ / ℓ 24 hr Daphnia magna
- Aquatic algae
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : ErC50> 30 ㎎ / ℓ 72 hr Scenedesmus subspicatus

2) Persistence and degradability

- Degradability

No data available

- Biodegradation
  - N,N'-ethylenedi(stearamide)
    : 15 (%) 28 day
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : 39 (%) ~ 21 (%) 28 day

3) Bioaccumulative potential

- n-octanol water partition coefficient
  - N,N'-ethylenedi(stearamide)
    : 13.98 log Kow (@ 25 ℃)
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : 13.41 log Kow ((estimated))
- Bioconcentration factor(BCF)
  - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
    : ≤12 (carp (Cyprinus carpio) 6 Day 12 than at 0.05mg / L)

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)

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

- N,N'-ethylenedi(stearamide) : Present [38286]

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate : Present [31615]

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)

- N,N'-ethylenedi(stearamide) : 203-755-6

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate : 218-216-0

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

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

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

- N,N'-ethylenedi(stearamide) : (2)-831

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate : (3)-1737

New Zealand Environmental Protection Authority, Inventory of Chemicals

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

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

- N,N'-ethylenedi(stearamide) : May be used as a single component chemical under an appropriate group standard

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate : HSNO Approval: HSR003658

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

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

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

- N,N'-ethylenedi(stearamide) : Present

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate : Present

Vietnam National Chemicals Inventory (NCI)

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

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

- N,N'-ethylenedi(stearamide) : Present 01999

- Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate : Present 07679

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 : 19-01-2023

3) Revision date

○ Revised date count : 2-1

○ Last revised date : 19-01-2023