

Safety Data Sheet(SDS)

Last revised date : 26-12-2022

1. Identification

- 1) Product identifier : ABS HF-0670 U
- 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%)
polymer with 1,3-butadiene and ethenylbenzene	ABS Resin	9003-56-9	$\geq 95.5 \sim \leq 99$
N,N'-ethylenedi(stearamide)	N,N'-ethylenedi(stearamide)	110-30-5	$\geq 0.8 \sim \leq 4$
Additives	-		$\geq 0.05 \sim \leq 2$
Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate	octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	2082-79-3	$\geq 0.05 \sim \leq 0.5$

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
 - 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	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	No data available	
Decomposition temperature	400 °C over	
Viscosity(mm ² /s, 40°C)	No data available	
Molecular weight(mass)	50,000 - 250,000 (active)	
Specific gravity	1.0 - 1.1	

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
 - N,N'-ethylenedi(stearamide)
 - : LD50> 5000 mg / kg
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
 - : LD50> 2000 mg / kg experimental species: Rat
- Acute toxicity(Dermal) PRODUCT : Not classified
 - N,N'-ethylenedi(stearamide)
 - : LD50> 2000 mg / kg
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
 - : LD50> 2000 mg / kg 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 mg / 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 4.1-1000µg / plate density test: Metabolic activity in voice, 10-100µg / 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 mg / ℓ 96 hr *Pimephales promelas*
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
 - : LC50 100 mg / ℓ 96 hr *Lepomis macrochirus*
- Crustaceans
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
 - : EC50 100 mg / ℓ 24 hr *Daphnia magna*
- Aquatic algae
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
 - : ErC50 > 30 mg / 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 °C)
 - 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 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)
 - 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 : 26-12-2022

3) Revision date

○ Revised date count : 2-1

○ Last revised date : 26-12-2022