

Safety Data Sheet(SDS)

Last revised date : 26-12-2022

1. Identification

- 1) Product identifier : ABS SD-0190H
- 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 |
|-----------------|----------------|--------------------|-----------------|

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 | $\geq 96 \sim \leq 99$ |
| N,N'-ethylenedi(stearamide) | N,N'-ethylenedi(stearamide) | 110-30-5 | $\geq 0.3 \sim \leq 3$ |
| Additives | - | | $\geq 0.1 \sim \leq 2$ |
| 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
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
: LD50> 2000 mg / kg experimental species: Rat
 - N,N'-ethylenedi(stearamide)
: LD50> 5000 mg / kg
- Acute toxicity(Dermal) PRODUCT : Not classified
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
: LD50> 2000 mg / kg experimental species: Rat
 - N,N'-ethylenedi(stearamide)
: LD50> 2000 mg / kg
- 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
 - 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
 - N,N'-ethylenedi(stearamide)
 - : In vitro / audio
- 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
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
: LC50 100 mg / ℓ 96 hr *Lepomis macrochirus*
 - polymer with 1,3-butadiene and ethenylbenzene
: LC50 11.5 mg / ℓ 96 hr *Pimephales promelas*
- 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
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
: 39 (%) ~ 21 (%) 28 day
 - N,N'-ethylenedi(stearamide)
: 15 (%) 28 day

3) Bioaccumulative potential

- n-octanol water partition coefficient
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate
: 13.41 log Kow ((estimated))
 - N,N'-ethylenedi(stearamide)
: 13.98 log Kow (@ 25 °C)
- 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)
 - Octadecyl 3-(3,5-di-t-butyl-4-hydroxy phenyl) propionate : Present [31615]
 - polymer with 1,3-butadiene and ethenylbenzene : Present [03641]

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

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)

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

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

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

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

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

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

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

New Zealand Environmental Protection Authority, Inventory of Chemicals

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

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

- 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

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

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

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

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

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

Vietnam National Chemicals Inventory (NCI)

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

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

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

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

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