

# Safety Data Sheet(SDS)

Last revised date : 19-01-2023

## 1. Identification

1) Product identifier : ABS ABF-0200HF

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
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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 Dispose of contents/container to ...

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	$\geq 92 \sim \leq 99$
N,N'-ethylenedi(stearamide)	-	110-30-5	$\geq 0.1 \sim \leq 4$
Zinc oxide	-	1314-13-2	$\geq 2.5 \sim \leq 5$

### 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
    - Dry chemical.
    - Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
    - Regular foam.
    - CO<sub>2</sub>.
    - Water spray.
    - Use dry sand or earth to smother fire.
  - 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
    - Some may burn but none ignite readily.
    - Containers may explode when heated.
  - 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
Zinc oxide	2 mg/m <sup>3</sup> TWA (respirable particulate matter) 10 mg/m <sup>3</sup> STEL (respirable particulate matter)	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)	2.5mm V-0 (UL94)	
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	≥ 466°C	
Decomposition temperature	≥ 400°C	
Viscosity(mm <sup>2</sup> /s, 40°C)	No data available	
Molecular weight(mass)	60,000-200,000	
Specific gravity	1.12 ~ 1.30	

## 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 mg / kg
    - Zinc oxide
      - : LD50> 5000 mg / kg experimental species: Rat, (the route of administration: gavage, male / female male, OECD TG 401)
  - Acute toxicity(Dermal) PRODUCT : Not classified
    - N,N'-ethylenedi(stearamide)
      - : LD50> 2000 mg / kg
    - Zinc oxide
      - : LD50> 2000 mg / kg experimental species: Rat, (female / male, OECD TG 402, GLP)
  - Acute toxicity(Inhalation:Gases) PRODUCT : Not classified
    - Zinc oxide
      - : LC50> 5700 mg / m<sup>3</sup> 4 hr experimental species: Rat, (female / male, OECD TG 403)
  - 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
  - Zinc oxide
    - : Not irritant, Rabbit
- Serious eye damage/eye irritation PRODUCT : Not classified
  - Zinc oxide

: Not irritant, Rabbit, 72-hour fully reversible, EU Method B.5

- Respiratory sensitization PRODUCT : Not classified
  - No data available
- Skin sensitization PRODUCT : Not classified
  - Zinc oxide
    - : Sensitization No, Guinea pig, GLP, female, guinea pig maximization test (GMPT): dose levels: 0.02, reaction: 0/10, OECD TG 406
- Carcinogenicity PRODUCT : Not classified
  - No data available
- Germ cell mutagenicity PRODUCT : Not classified
  - N,N'-ethylenedi(stearamide)
    - : In vitro / audio
  - Zinc oxide
    - : in vitro - reverse mutation test using bacteria: Negative (S. typhimurium TA1535, TA1537, TA98, TA100, irrespective of metabolic activation system), OECD TG 471
- Reproductive toxicity PRODUCT : Not classified
  - Zinc oxide
    - : May be regarded, under the test conditions, maturity, mating, pregnancy and early lactation showed in adults, and 30, 15 mg / kg / d, effects which, natjiman appear in the 7.5 mg / kg / d that is not substantially important. NOAEL = 7.5 mg / kg / d, equivalent or similar to Guideline: OECD TG 416, under the test conditions, of up to 88 mg / kg of zinc sulfate (about 35.2 mg or 19.9 mg Zn<sup>2+</sup> / kg bw, for the anhydrous and monohydrate) of when administered adult hamsters and fetal no negative side effects., hamster
- Specific target organ toxicity single exposure PRODUCT : Not classified
  - Zinc oxide
    - : Oral: toxic side effects without signs (rat / male / female / equivalent or similar guidelines: OECD TG 401)
    - dermal: general discomfort some signs commonly found in dermal toxicity studies, the overall health status is also good throughout the entire study / over is not found (rat / male / female / OECD TG 402 / GLP)
    - inhalation: nateu dirty hair appears on the head or side effects were observed (rat / male / female / equivalent or similar to Guideline :. OECD TG 403)
- Specific target organ toxicity repeated exposure PRODUCT : Not classified
  - Zinc oxide
    - : Orally (sub-chronic): NOAEL = 31.52 mg / kg-bw / day (. Approx 13.26 mg Zn<sup>2+</sup> / kg-bw / day), Rat, OECD TG 408, GLP transdermal (short repeated): After a percutaneous exposure through the rat, on the basis of the decrease of collagen content, LOAEL for systemic toxicity natjiman show the lowest test dose of 75 mg / kg bw / day, these effects are reversible been a period of 14 days, Rat, OECD TG 410 suction ( sub-chronic): under the experimental conditions, NOAEL was 1.5 mg / m<sup>3</sup> to be evaluated, Rat, OECD TG 413, GLP
- 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*

- Zinc oxide

- : LC50 315 µg / ℓ 96 hr *Thymallus arcticus* , (ASTM, exponential expression, fresh water)

- Crustaceans

- Zinc oxide

- : LC50 1220 µg / ℓ 48 Hr *Daphnia Magna*, (US EPA / 600 / 4-85 / 013, Exponential, freshwater, GLP)

- Aquatic algae

- Zinc oxide

- : EC10 350 µg / ℓ 48 hr *Chlorella sp.* , (Exponential manner, fresh water)

### 2) Persistence and degradability

- Degradability

- No data available

- Biodegradation

- N,N'-ethylenedi(stearamide)

- : 15 (%) 28 day

- Zinc oxide

- : 100 (%) 40 hr

### 3) Bioaccumulative potential

- n-octanol water partition coefficient

- N,N'-ethylenedi(stearamide)

- : 13.98 log Kow (@ 25 °C)

- Bioconcentration factor(BCF)

- Zinc oxide

- : 0.002 BCF,

### 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:

Zinc Oxide의 용출시험(OECD TG 120, Solution/Extraction Behaviour of Polymers in Water) 결과, Zinc Oxide는 미검출 되었습니다. 수생환경 유해성 분류(2번 항목) 및 Zinc Oxide의 환경에 미치는 영향(12번 항목)은 사용자에 게 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)

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

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

- Zinc oxide : Present [37649]

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
  - Zinc oxide : 215-222-5

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
  - Zinc oxide : (1)-561

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
  - Zinc oxide : HSNO Approval: HSR003104

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
  - Zinc oxide : 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
  - Zinc oxide : Present 06676

## 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