SDS(Safety Data Sheet)

Product	TRB432		
MSDS Number	List No.	Issuing date	Last revised date
-	PP2322	2021-06-09	2021-06-09

1. IDENTIFICATION

1) Product name

TRB432

2) Recommended use of the chemical and restriction on use

- Recommended use: Others
  HDPE
- Restrictions on use: Do not use for any other purpose.

3) Details of the supplier of the safety data sheet

○ **Manufacturer**

- Company name: GS Caltex Corporation
- Address: GS Tower, 508, Nonhyeon-ro, Gangnam-gu, Seoul, Korea
- Emergency telephone number: 1544-5151

2. HAZARDS IDENTIFICATION

1) Classification of the product

- Not applicable

2) Label elements

○ **Hazard pictograms**

- Not applicable

○ **Signal word**

- Not applicable

○ **Hazard statements**

- Not applicable

○ **Precautionary statements**

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

3) Other hazards

○ **Product NFPA Level**

(※ 0-Lack, 1-Low, 2-Moderate, 3-High, 4-Very High)

Product name	Health	Flammable	Reaction
TRB432	1	1	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	Trade names and Synonyms	CAS No.	EC No.	Contain Ratio(%)
Ethylene-1-hexene copolymer		25213-02-9		99 ~ 100

4. FIRST AID MEASURES

1) Eye contact

- In case of contact with material, immediately flush eyes with running water for at least 15 minutes.
- If eye irritation persists: Get medical advice/attention.

2) Skin contact

- In case of contact with material, immediately flush skin with running water for at least 15 minutes.
- Remove and isolate contaminated clothing and shoes.
- Launder contaminated clothing and shoes before re-use.
- If skin irritation occurs: Get medical advice/attention.

3) Inhalation

- Move victim to fresh air.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

4) Ingestion

- If unconscious but breathing, never give anything by mouth
- If swallowed do not induce vomiting, seek medical advice immediat.
- Get immediate medical advice/attention.
- Rinse mouth.

5) Indication of any immediate medical attention and special treatment needed

- 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

- Small fire: Dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO2 (Suitable extinguishing media)
- Large fire: Water spray/fog, regular foam (Suitable extinguishing media)
- High-pressure water (Unsuitable extinguishing media)

2) Special hazards arising from the substance or mixture	- May be ignited by heat, sparks or flames. - Fire may produce irritating and/or toxic gases. - May cause toxic effects if inhaled.
3) Special protective equipment and precautions for firefighters	- Substance may be transported hot. - Runoff may cause pollution. - Contact may cause burns to skin and eyes. - Dike fire-control water for later disposal; do not scatter the material. - Move containers from fire area if you can do it without risk. - 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. - Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.

6. ACCIDENTAL RELEASE MEASURES

1) Health considerations and protective equipment	- Do not touch or walk through spilled material. - ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). - Ventilate the contaminated area. - Stop leak if you can do it without risk. - Prevent dust cloud. - Please note that materials and conditions to be avoided.
2) Environmental precautions	- Prevent entry into waterways, sewers, basements or confined areas.
3) Methods and material for containment and cleaning up	- Small Spill: Flush area with flooding quantities of water. - Large Spill: Dike far ahead of liquid spill for later disposal. - With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. - Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. - Small Spill: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

7. HANDLING AND STORAGE

1) Precautions for safe handling	- Wash ... thoroughly after handling. - Please note that materials and conditions to be avoided. - Handling refer to engineering control/personal protection section. - Cuation: High temperature
2) Conditions for safe storage (including any incompatibilities)	- Store in a dry place. Store in a closed container. - Please note that materials and conditions to be avoided. - Store in a closed container.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

1) Control parameters

Chemical name	Exposure limits	ACGIH TLV	OSHA PEL	Biological limit values(BLV)
Ethylene-1-hexene copolymer	Not available	Not available	Not available	Not available

2) Appropriate engineering controls

- Adjust the ventilation rate to suit the condition.
- If the exposure limits are not set, keep the air level at an acceptable level.

3) Personal protection equipment

○ **Respiratory protection**
- Wear a adequate respiratory protection equipment with certificate by considering physicochemical properties of exposured particulate material.
- In case exposured to particulate material, the respiratory protective equipments as follow are recommended. - facepiece filtering respirator or air-putifying respirator, high-efficiency particulate air(HEPA) filter media or resporator equipped with power
- In lack of oxigan(<19.6%), wear the supplied-air respiratior or self-contained breathing apparatus.
- Consider the warning characteristics beforehand.

○ **Eye protection**
- Wear breathable safety goggles to protect from material causing eye irritation or other disorder.
- An eye wash unit and safety shower station should be available nearby work place.
- In case of direct exposure or potential exposure to the substance, wear safety glasses for chemicals approved in the country.

○ **Hand protection**
- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.
- In case of direct exposure or potential exposure to the substance, wear safety gloves for chemicals approved in the country.

○ **Body protection**
- Wear appropriate protective clothing by considering physical and chemical properties of chemicals.
- In case of direct exposure or potential exposure to the substance, wear protective clothing for chemicals approved in the country.

9. PHYSICAL AND CHEMICAL PROPERTIES

Item	Input Value
Apperance	Solid
Color	No Data
Smell	No Data
Smell Threshold	No Data

pH (Numerical value)	No Data
Melting/Freezing Point	90 ~ 140 °C
Boilling Point	No Data
Flash Point	No Data
Evaporating Rate	No Data
Flammability(Solid, Gas)	No Data
Explosibility Range	No Data
Steam Pressure	No Data
Solubility	No Data
Vapor Density	No Data
Specific Gravity	No Data
Distribution Coefficient	No Data
SelfIgnition Temperature	No Data
Pyrolysis Temperature	No Data
Viscosity	No Data
Molecular Weight	No Data

10. STABILITY AND REACTIVITY

1) Chemical Stability and hazardous reactivity
- Stable under normal temperatures and pressures.
- Containers may explode when heated.
- Some may burn but none ignite readily.

2) Conditions to avoid
- Ignition source(heat, spark, flame)

3) Incompatible materials
- Combustibles
- Irritating and/or toxic gas

4) Hazardous decomposition products
- Not available

11. TOXICOLOGICAL INFORMATION

1) Information on the likely routes of exposures

○ **Inhalation**

- No inhalation effects through respiratory system.

○ **Skin contact**

- No effect on skin contact.

○ **Eye contact**

- No effect on eye contact.

○ **Ingestion**

- No ingestion effect through mouth.

2) Health hazard information

○ **Acute toxicity**

*** Oral - Not classified (ATEmix > 2000 mg/kg)**

- Ethylene-1-hexene copolymer : Not available

*** Dermal - Not classified (ATEmix > 2000 mg/kg)**

- Ethylene-1-hexene copolymer : Not available

*** Inhalation(Gas) - Not applicable**

- Ethylene-1-hexene copolymer : Not applicable

*** Inhalation(Vapour) - Not applicable**

- Ethylene-1-hexene copolymer : Not available

*** Inhalation(Dust, mist) - Not classified (ATEmix > 5 mg/L)**

- Ethylene-1-hexene copolymer : Not available

○ **Skin corrosion/Irritation : Not classified**

- Ethylene-1-hexene copolymer : Not available

○ **Serious eye damage/irritation : Not classified**

- Ethylene-1-hexene copolymer : Not available

○ **Respiratory sensitization : Not classified**

- Ethylene-1-hexene copolymer : Not available

○ **Skin sensitization : Not classified**

- Ethylene-1-hexene copolymer : Not available

○ **Carcinogenicity : Not classified**

- Ethylene-1-hexene copolymer : IARC, EU CLP 1272/2008, OSHA, ACGIH, US EPA IRIS, NTP : not listed

○ **Germ cell mutagenicity : Not classified**

- Ethylene-1-hexene copolymer : Not available

○ **Reproductive toxicity : Not classified**

- Ethylene-1-hexene copolymer : Not available

○ **Specific target organ toxicity (single exposure) : Not classified**

- Ethylene-1-hexene copolymer : Not available

○ **Specific target organ toxicity (repeated exposure) : Not classified**

- Ethylene-1-hexene copolymer : Not available

○ **Aspiration hazard : Not classified**

- Ethylene-1-hexene : Not applicable

copolymer

12. ECOLOGICAL INFORMATION

1) Ecotoxicity

- Acute toxicity : Not available
- Chronic toxicity : Not available

○ **Acute (short-term) aquatic hazard:**

Fish

- Ethylene-1-hexene copolymer : Not available

Invertebrates

- Ethylene-1-hexene copolymer : Not available

Aquatic algae

- Ethylene-1-hexene copolymer : Not available

○ **Chronic (Long-term) aquatic hazard:**

Fish

- Ethylene-1-hexene copolymer : Not available

Invertebrates

- Ethylene-1-hexene copolymer : Not available

Aquatic algae

- Ethylene-1-hexene copolymer : Not available

2) Persistence and degradability

○ **Persistence**

- Ethylene-1-hexene copolymer : Not available

○ **Degradability**

- Ethylene-1-hexene copolymer : Not available

3) Bioaccumulative potential

○ **Bioaccumulation**

- Ethylene-1-hexene copolymer : Not available

○ **Biodegradation**

- Ethylene-1-hexene copolymer : Not available

4) Mobility in soil

- Ethylene-1-hexene copolymer : Not available

5) Hazard to the ozone layer

- Ethylene-1-hexene copolymer : Not applicable

6) Other adverse effects

- Ethylene-1-hexene copolymer : Not classified

13. DISPOSAL CONSIDERATIONS

1) Disposal methods

- Waste must be disposed of in accordance with federal, state and local environmental control regulation.

2) Special precaution for disposal

- Consider the required attentions in accordance with waste treatment management regulation.

14. TRANSPORT INFORMATION

1) UN No.

- Not applicable

2) Proper shipping name

- Not applicable

3) Transport hazard class(es)

- Not applicable

4) Packing group

- Not applicable

5) Marine pollutant

- Not applicable

6) Special safety response for transportation or transportation measure

- Types of Emergency Measures in Case of Fire : Not applicable
- Types of Emergency Measures in Leakage : Not applicable
- Transport regulations according to ADR/RID, AND, IMDG and ICAO/IATA : Not applicable

15. REGULATORY INFORMATION

EINECS(or ELINCS)

- Ethylene-1-hexene copolymer : Not applicable

EU CLP (CLASSIFICATION) - PRODUCT : Not applicable

- Ethylene-1-hexene copolymer : Not applicable

Substances restricted under REACH

- Ethylene-1-hexene copolymer : Not applicable

Substances subject to authorization under REACH

REACH SVHC List

Korea

○ **Occupational Safety and Health Act**

- Ethylene-1-hexene copolymer : Not applicable

○ **K-REACH**

- Ethylene-1-hexene copolymer : Not applicable

○ **Chemical Control Act in Korea**

- Ethylene-1-hexene copolymer : Not applicable

○ **Safety Control of Dangerous Substances Act**

- Ethylene-1-hexene copolymer : Not applicable

U.S.A

○ **US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

- Ethylene-1-hexene copolymer : Not applicable

○ **CERCLA Designation of hazardous substances (40 CFR 302.4)**

- Ethylene-1-hexene copolymer : Not applicable

○ **CERCLA Section 302 regulation**

- Ethylene-1-hexene copolymer : Not applicable

○ **CERCLA Section 304 regulation**

- Ethylene-1-hexene copolymer : Not applicable

○ **CERCLA Section 313 regulation**

- Ethylene-1-hexene copolymer : Not applicable

Interntional Convention on Environment

○ **Rotterdam Convention list**

- Ethylene-1-hexene copolymer : Not applicable

○ **Stockholm Convention list**

- Ethylene-1-hexene copolymer : Not applicable

○ **Montreal Protocol list**

- Ethylene-1-hexene copolymer : Not applicable

National Inventory

○ **Korea**

- Ethylene-1-hexene copolymer : Not applicable

○ **U.S.A**

- Ethylene-1-hexene copolymer : US TSCA phase-in substance

○ **China**

- Ethylene-1-hexene copolymer : China phase-in substance

○ **Japan**

- Ethylene-1-hexene copolymer : Japan ENCS phase-in substance

16. OTHER INFORMATION

1) Reference

- Sources of information used in preparing this SDS included one or more of the following: Internal technical data, data from OECD eChemPortal, ECHA, NITE, TOXNET, IPCS and KOSHA search results.

2) Issue Date

- 2021-06-09

3) Revision number and Last date revised

○ **Number of revised**

- 0

○ **Date of last revision**

- 2021-05-24

○ **Last Revision History**

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4) Other

- The information contained in the Safety Data Sheet is at the date of its issuance to the best of our knowledge correct according to the data available to us. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any

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