

# SAFETY DATA SHEET

## 1. Chemical product and company identification

**Product name** KUMHO KBR 710H/710S  
**Manufacturer** Korea Kumho Petrochemical Co., Ltd.  
287-1, Pyeongyeo-Dong, Yeosu-si, Jeollanam-do, Korea  
+82 61 688 3060 ~ 9  
+82 61 688 3168  
**Emergency number** +49 551 19240 GIZ-Nord, Goettingen, Germany (English only)

### Recommended use and Limitations on use

**Recommended use** Raw materials for high impact/gloss polystyrene.  
**SDS number** CSSS-TCO-010-122861

## 2. Hazards identification

### GHS classification

**Physical hazards** Not classified.  
**Health hazards** Not classified.  
**Environmental hazards** Not classified.

### Label elements

**Pictogram** None.  
**Signal word** None.  
**Hazard statement** The mixture does not meet the criteria for classification.

### Precautionary statement

**Prevention** Observe good industrial hygiene practices.  
**Response** Wash hands after handling.  
**Storage** Store away from incompatible materials.  
**Disposal** Dispose of waste and residues in accordance with local authority requirements.

### Other hazards

None known.

### Supplemental information

81% of the mixture consists of component(s) of unknown acute oral toxicity. 81% of the mixture consists of component(s) of unknown acute dermal toxicity. 81% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 81% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

## 3. Composition / information on ingredients

**Substance or mixture** Mixture

### Chemical property

Chemical name	CAS Number	Concentration (%)
Polybutadiene	9003-17-2	60-100%
Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	2082-79-3	<1%

## 4. First aid measures

### First aid measures for different exposure routes

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.  
**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.  
**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.  
**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**Most important symptoms and effects** Direct contact with eyes may cause temporary irritation.

**Personal protection for first-aid responders** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

**Notes to physician** Treat symptomatically.

## 5. Fire-fighting measures

**Extinguishing media** Water fog. Foam. Carbon dioxide (CO<sub>2</sub>). Dry powder.

<b>Extinguishing media to avoid</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards</b>	During fire, gases hazardous to health may be formed.
<b>Special fire fighting procedures</b>	Use water spray to cool unopened containers.
<b>Protection of fire-fighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

## 6. Accidental release measures

<b>Personal precautions</b>	Wear protective clothing as described in Section 8 of this safety data sheet.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.
<b>Spill clean-up methods</b>	Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

## 7. Handling and storage

### Handling

<b>Technical measures</b>	No specific recommendations.
<b>Local and general ventilation</b>	Provide adequate ventilation.
<b>Precautions</b>	Use personal protection recommended in Section 8 of the SDS.
<b>Safe handling advice</b>	Observe good industrial hygiene practices.

### Storage

<b>Technical measures</b>	No specific recommendations.
<b>Suitable storage conditions</b>	Protect against direct sunlight. Do not store near heat sources or expose to high temperatures. Static electricity and formation of sparks must be prevented.
<b>Incompatible materials</b>	For further information, please refer to section 10 of the SDS.
<b>Safe packaging materials</b>	Keep in original container.

## 8. Exposure controls/personal protection

<b>Exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Engineering measures</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
<b>Personal protective equipment</b>	
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Eye protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>Hygiene measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Yellow-white
<b>Odor</b>	Mild.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Boiling point, initial boiling point, and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Auto-ignition temperature</b>	600.8 °F (316 °C)
<b>Flammability (solid, gas)</b>	Not available.

**Upper/lower flammability or explosive limits**

<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.

<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Relative density</b>	0.91 @ 20°C
<b>Density</b>	Not available.

**Solubility(ies)**

**Solubility (water)** Insoluble in water.

**Partition coefficient (n-octanol/water)** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Molecular weight** 500000

**Other data**

**Explosive properties** Not available.

**Oxidizing properties** Not available.

**10. Stability and reactivity**

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Stability** Material is stable under normal conditions.

**Conditions to avoid** None.

**Incompatible materials** Oxidizing material. Bases. Acids. Acid anhydrides. Acid chlorides (Acyl chlorides).

**Hazardous decomposition products** Irritating and/or toxic fumes and gases may be emitted upon the products decomposition. Carbon oxides.

**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.

**11. Toxicological information**

**Acute toxicity** Not known.

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
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Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate (CAS 2082-79-3)

**Acute****Dermal**

Rat	> 2000 mg/kg
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**Inhalation**

Rat	> 1.81 mg/l, 4 h
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**Oral**

Rat	> 5000 mg/kg
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**Routes of exposure** Not available.

**Symptoms** Direct contact with eyes may cause temporary irritation.

**Skin corrosion/irritation** Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation** Direct contact with eyes may cause temporary irritation.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not a respiratory sensitizer.

**Skin sensitization** This product is not expected to cause skin sensitization.

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** Not available.

**Toxic to reproduction** This product is not expected to cause reproductive or developmental effects.

<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	Not available.
<b>Interactive effects</b>	Not available.
<b>Other information</b>	This product has no known adverse effect on human health.

## 12. Ecological information

### Ecotoxicological data

Components		Species	Test Results
Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate (CAS 2082-79-3)			
<b>Aquatic</b>			
<i>Acute</i>			
Algae	EC50	Algae	> 30 mg/l, 72 h
Crustacea	EC50	Daphnia	> 100 mg/l, 24 h
Fish	LC50	Fish	> 100 mg/l, 96 h

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

### Persistence and degradability

**Bioaccumulation** No data available.

**Mobility in soil** No data available for this product.

**Other hazardous effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal methods/information** Not available.

## 14. Transport information

### ADR

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## 15. Regulatory information

### Applicable regulations

**CWC (Law of RI No. 9 of 2008 re: Prohibition on the Use of Chemicals as Chemical Weapon, March 10, 2008)**

Not regulated.

**Dangerous Substances that Must be Registered (Regulation of the Minister of Health of the Republic of Indonesia, No. 472/Menkes/Per/V/1996)**

Not regulated.

**Import and Distribution Control of Hazardous Materials (Minister of Trade Regulation No. 75/M-DAG/PER/10/2014, Annex I)**

Not listed.

**Precursor Chemicals (Ministry of Industry and Trade Decree No. 647/MPP/Kep/10/2004 concerning Regulation on Import of Precursors, Attachment 1, Oct. 18, 2004)**

Not regulated.

**Prohibited Substances (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment II, Table 1)**

Not regulated.

**Restricted Substances (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment II, Table 2)**

Not regulated.

**Toxic and Hazardous Materials List (Decree of the Ministry of Industry on the Safeguarding of Toxic and Hazardous Materials in Industrial Plants, No. 148/M/SK/4/1985)**

Not regulated.

**Hazardous Substances Approved for Use (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment I)**

**Listed substances**

Not regulated.

**Listed substances / Allowed until 2040**

Not regulated.

**16. Other information**

<b>Issued by</b>	Not available.
<b>Disclaimer</b>	Not available.
<b>Issue date</b>	24-03-2017.
<b>Revision date</b>	24-03-2017.
<b>Legend to abbreviations and acronyms used in the SDS</b>	Not available.
<b>References and sources for data used to compile the SDS</b>	Not available.