

KUMHO PETROCHEMICAL

SAFETY DATA SHEET KUMHO SOL 6361H

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010, COMMISSION REGULATION (EU) 2015/830 of 28 May 2015.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name KUMHO SOL 6361H

REACH registration number -

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Raw materials for tires, shoes, rubber hoses

Uses advised against Not available.

1.3. Details of the supplier of the safety data sheet

Supplier OR of KOREA KUMHO Petrochemical Co., Ltd.
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Manufacturer KUMHO Petrochemical Yeosu Synthetic Rubber Plant 1
118, Yeosusandan,
3-ro, Yeosu-si,
Jeonnam, Korea
Tel: +82 61-688-3060~3063
and/or
KUMHO Petrochemical Yeosu Synthetic Rubber Plant 2
331, Sandan Jungang,
Yeosu-si,
Jeonnam, Korea
Tel: +82 61-688-7270~7273

1.4. Emergency telephone number

Emergency telephone +49 551 19240
GIZ-Nord, Goettingen, Germany (English only)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC/1272/2008)

Physical hazards Not Classified

Health hazards Not Classified

Environmental hazards Aquatic Chronic 3 - H412

2.2. Label elements

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Hazard statements	H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	P273 Avoid release to the environment. P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Styrene-Butadiene Copolymer	60-100%
CAS number: 9003-55-8	
Classification Not Classified	
TDAE OIL	10-30%
CAS number: 64741-88-4	EC number: 265-090-8
	REACH registration number: 01-2119488706-23-XXXX
Classification Not Classified	
BHT	<1%
CAS number: 128-37-0	EC number: 204-881-4
	REACH registration number: 01-2119480433-40-XXXX
M factor (Chronic) = 1	
Classification Aquatic Chronic 1 - H410	

The full text for all hazard statements is displayed in Section 16.

Composition comments	Monomer is registered instead of Styrene-Butadiene-Styrene copolymer. (Registration number of monomer: 1,3-Butadiene; 01-2119471988-16-****, Styrene; 01-2119457861-32-****)
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SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Get medical attention.
Inhalation	Move affected person to fresh air at once. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.
Ingestion	Never give anything by mouth to an unconscious person. Consult a physician for specific advice. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
Skin contact	Continue to rinse for at least 15 minutes. Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Continue to rinse for at least 15 minutes and get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General information	Not available.
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Inhalation	Not available.
Ingestion	Not available.
Skin contact	Not available.
Eye contact	Not available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treatment may vary with condition of victim and specifics of incident.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Irritating gases or vapours. Vapours may be ignited by a spark, a hot surface or an ember. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours. Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon.

5.3. Advice for firefighters

Protective actions during firefighting Move containers from fire area if it can be done without risk. Keep up-wind to avoid fumes. Avoid heat, flames and other sources of ignition. Fight advanced or massive fires from safe distance or protected location. Avoid inhalation of materials or combustion by-products.

Special protective equipment for firefighters Use personal protective equipment as required.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Put on protective equipment before entering danger area. Provide adequate ventilation. Stop leak if possible without risk. **DO NOT** touch spilled material!

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Large Spillages: Build dikes to control spillage. Avoid lowland and keep upwind. Environmental Manager must be informed of all major spillages. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Small Spillages: Collect spilled material in appropriate container for disposal. Wash thoroughly after dealing with a spillage.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions For personal protection, see Section 8. Avoid contact with skin and eyes. Store and handle in accordance with all current regulations and standards. All handling should only take place in well-ventilated areas. Avoid generation and spreading of dust.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in a cool and well-ventilated place. Protect against direct sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from combustible material. Earth container and transfer equipment to eliminate sparks from static electricity. Handle and open container with care. Keep upwind.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

BHT

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³
ACGIH = American Conference of Governmental Industrial Hygienists.

Ingredient comments No exposure limits known for ingredient(s).

8.2. Exposure controls

Protective equipment



Appropriate engineering controls Provide adequate ventilation.

Eye/face protection The following protection should be worn: Chemical splash goggles.

Hand protection Wear suitable gloves.

Other skin and body protection Wear suitable protective clothing.

Hygiene measures Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station and safety shower.

Respiratory protection Under frequent use or heavy exposure, respiratory protection may be needed. If ventilation is inadequate, suitable respiratory protection must be worn.

Environmental exposure controls Avoid releasing into the environment.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance Solid

Colour Dark brown.

Odour Mild.

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Odour threshold	Not available.
pH	Not applicable.
Melting point	Not applicable.
Initial boiling point and range	Not applicable.
Flash point	Not available.
Evaporation rate	Not available.
Upper/lower flammability or explosive limits	Not available.
Other flammability	Not available.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	Not available.
Solubility(ies)	Insoluble in water.
Partition coefficient	Not applicable.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information

Molecular weight	Not available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Not available.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Will not occur.
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10.4. Conditions to avoid

Conditions to avoid	Avoid heat, flames and other sources of ignition. Avoid contact with incompatible materials. Avoid exposure to high temperatures or direct sunlight.
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10.5. Incompatible materials

Materials to avoid	Flammable/combustible materials. Strong oxidising agents. Hydrocarbons.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Carbon dioxide (CO ₂). Carbon monoxide (CO). Smoke.
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SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity - oral**Notes (oral LD₅₀) Not available.**Acute toxicity - dermal**Notes (dermal LD₅₀) Not available.**Acute toxicity - inhalation**Notes (inhalation LC₅₀) Not available.**Serious eye damage/irritation**

Serious eye damage/irritation Not available.

Respiratory sensitisation

Respiratory sensitisation Not available.

Skin sensitisation

Skin sensitisation Not available.

Germ cell mutagenicity

Genotoxicity - in vitro Not available.

Genotoxicity - in vivo Not available.

Carcinogenicity

Carcinogenicity Does not contain any substances known to be carcinogenic.

Reproductive toxicity

Reproductive toxicity - development Not available.

Specific target organ toxicity - single exposure

STOT - single exposure Not available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not available.

Aspiration hazard

Aspiration hazard Not available.

Toxicological information on ingredients.**TDAE OIL****Acute toxicity - oral**Acute toxicity oral (LD₅₀ 5,000.0 mg/kg)

Species Rat

Acute toxicity - dermalAcute toxicity dermal (LD₅₀ 5,000.0 mg/kg)

Species Rabbit

Acute toxicity - inhalation

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Acute toxicity inhalation (LC₅₀ dust/mist mg/l)	5.53
Species	Rat
ATE inhalation (dusts/mists mg/l)	5.53
<u>Skin corrosion/irritation</u>	
Animal data	Primary dermal irritation index: ≈ 0.6 Not irritating.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Not irritating.
<u>Skin sensitisation</u>	
Skin sensitisation	Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Chromosome aberration: Negative. Species : Chinese Hamster Ovary (CHO).
Genotoxicity - in vivo	Chromosome aberration: Negative. Species : mouse.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Screening: - NOAEL >=1000 mg/kg/day, Oral, Rat P

BHT

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD₅₀ mg/kg)	6,000.0
Species	Rat
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD₅₀ mg/kg)	2,000.0
Species	Rat
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	Endpoint waived according to REACH Annex VII, IX or XI.
<u>Skin corrosion/irritation</u>	
Animal data	Not irritating. Rabbit
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Not irritating.
<u>Carcinogenicity</u>	
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.

SECTION 12: Ecological Information

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Ecotoxicity There are no data on the ecotoxicity of this product. The product contains a substance which may cause long-term adverse effects in the environment. The product is mildly toxic to aquatic organisms.

12.1. Toxicity

Acute toxicity - fish Not available.

Acute toxicity - aquatic invertebrates Not available.

Acute toxicity - aquatic plants Not available.

Acute toxicity - microorganisms Not available.

Acute toxicity - terrestrial Not available.

Chronic toxicity - fish early life stage Not available.

Short term toxicity - embryo and sac fry stages Not available.

Chronic toxicity - aquatic invertebrates Not available.

Toxicity to soil Not available.

Toxicity to terrestrial plants Not available.

Ecological information on ingredients.

TDAE OIL

Acute toxicity - fish	, 96 hours: > 100 mg/l, Pimephales promelas (Fat-head Minnow) Endpoint : LL50.
Acute toxicity - aquatic invertebrates	, 96 hours: > 10000 mg/l, Endpoint : LL50. Test species : Gammarus pulex.
Acute toxicity - aquatic plants	, 72 hours: > =100 mg/l, Endpoint : NOEL. Test species : Pseudokirchnerella subcapitata, based on algal growth rate.
Acute toxicity - microorganisms	, 96 hours: > 1.93 mg/l, 2.47 Endpoint : NOEL. Test species : Mineral oil contaminated soil bacterium, Photobacterium phosphoreum, and Acetobacter methanolicus MB58.
Chronic toxicity - aquatic invertebrates	, 21 days: 10 mg/l, Daphnia magna Endpoint : NOEL.
Toxicity to soil	Endpoint waived according to REACH Annex VII, IX or XI.
Toxicity to terrestrial plants	Endpoint waived according to REACH Annex VII, IX or XI.

BHT

Acute toxicity - fish	LC50, 96 hours: 0.199 mg/l, (Calculated from QSAR approach)
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Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 0.77 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 96 hours: 0.758 mg/l, 2.47 (Calculated from QSAR approach)
Acute toxicity - microorganisms	EC ₅₀ , 24 hours: 1.7 mg/l,
<u>Chronic aquatic toxicity</u>	
M factor (Chronic)	1
Toxicity to soil	Endpoint waived according to REACH Annex VII, IX or XI.
Toxicity to terrestrial plants	Endpoint waived according to REACH Annex VII, IX or XI.

12.2. Persistence and degradability

Persistence and degradability	Not available.
Phototransformation	Not available.
Stability (hydrolysis)	Not available.
Biodegradation	Not available.

Ecological information on ingredients.**BHT**

Phototransformation	Water - Half-life : 0.585 days Water - :
Biodegradation	Water - : Endpoint waived according to REACH Annex VII, IX or XI. Water - Degradation (%) 77~92: 1 days

12.3. Bioaccumulative potential

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	Not applicable.

Ecological information on ingredients.**TDAE OIL**

Bioaccumulative potential	Endpoint waived according to REACH Annex VII, IX or XI.
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BHT

Bioaccumulative potential	BCF: 598.4,
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12.4. Mobility in soil

Mobility	Not available.
Adsorption/desorption coefficient	Not available.
Henry's law constant	Not available.

Ecological information on ingredients.

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TDAE OIL

Adsorption/desorption coefficient Endpoint waived according to REACH Annex VII, IX or XI.

BHT

Adsorption/desorption coefficient - log Koc: 4.362 @ °C Calculated using PCKOCWIN v1.66 model.

Henry's law constant 8.928E-005 atm m³/mol @ °C Calculated using HENRYWIN v3.10 model.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Waste is suitable for incineration. If the waste contains designated waste and difficult to separate, incinerate it or reduce the volume following the similar way as incineration. If applicable, pretreat waste with oil/water separation.

Disposal methods Confirm disposal procedures with environmental engineer and local regulations. Dispose of the waste by oneself or contact disposal company.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

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

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Authorisations (Title VII Regulation 1907/2006) No specific authorisations are known for this product.

Restrictions (Title VIII Regulation 1907/2006) No specific restrictions on use are known for this product.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet Precautionary Statements In Full.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulation.
 DFG : German Research Foundation.
 WGK : German Water Hazard Classes.

Issued by KIST Europe

Revision date 16/11/2018

Revision 3

SDS number 20504

SDS status Approved.

Hazard statements in full H410 Very toxic to aquatic life with long lasting effects.
 H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.