

## SAFETY DATA SHEET KUMHO KBR 01

According to Regulation (EU) No 453/2010

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

Product name KUMHO KBR 01  
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 No specific uses advised against are identified.

#### 1.3. Details of the supplier of the safety data sheet

Supplier (OR of KOREA KUMHO Petrochemical Co., Ltd.)  
KIST-Europe  
Universitaet des Saarlandes  
66123, Saarbruecken,  
Germany  
Tel: +49 681 9382 334  
Fax: +49 681 9382 319  
e-mail: reach.it@kist-europe.de  
Manufacturer Korea Kumho Petrochemical Co., Ltd.  
287-1, Pyeongyeo-Dong, Yeosu-si  
Jeollanam-do, Korea  
+82 61 688 3060 ~ 9  
+82 61 688 3168

#### 1.4. Emergency telephone number

+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 and Chemical Hazards | Not classified.          |
| Human health                  | Not classified.          |
| Environment                   | Aquatic Chronic 3 - H412 |

##### Classification (1999/45/EEC)

R52/53.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

#### 2.2. Label elements

Contains BHT  
Polybutadiene

##### Label In Accordance With (EC) No. 1272/2008

No pictogram required.

##### Hazard Statements

|      |  |
|------|--|
| H412 | Harmful to aquatic life with long lasting effects. |
|------|--|

##### Precautionary Statements

|      |                                      |
|------|--------------------------------------|
| P273 | Avoid release to the environment.    |
| P501 | Dispose of contents/container to ... |

#### 2.3. Other hazards

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.2. Mixtures

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|   |  |                |
|---|--|----------------|
| <b>BHT</b>  |  | <b>&lt; 1%</b> |
| <b>CAS-No.: 128-37-0</b>  | <b>EC No.: 204-881-4</b>                       |                |
| Classification (EC 1272/2008)<br>Aquatic Acute 1 - H400<br>Aquatic Chronic 1 - H410 | Classification (67/548/EEC)<br>N;R50/53.       |                |
| <b>Polybutadiene</b>  |  | <b>60-100%</b> |
| <b>CAS-No.: 9003-17-2</b>   | <b>EC No.:</b>                                 |                |
| Classification (EC 1272/2008)<br>Not classified.                                    | Classification (67/548/EEC)<br>Not classified. |                |

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

REACH Registration number -

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

#### **General information**

Get medical attention.

#### **Inhalation**

Move the exposed person to fresh air at once.

If respiratory problems, artificial respiration/oxygen.

#### **Ingestion**

Consult a physician for specific advice.

Do not give victim anything to drink if he is unconscious.

Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

#### **Skin contact**

Continue to rinse for at least 15 minutes.

Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above.

Get medical attention if irritation persists after washing.

#### **Eye contact**

Continue to rinse for at least 15 minutes and get medical attention. Continue to rinse for at least 15 minutes.

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

#### **General information**

Not available.

#### **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

Treatment may vary with condition of victim and specifics of incident.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### **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.

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**5.2. Special hazards arising from the substance or mixture****Hazardous combustion products**

During fire, toxic gases (CO, CO<sub>2</sub>) are formed.

**Unusual Fire & Explosion Hazards**

Fire causes formation of toxic gases. Heat may cause the containers to explode.

**Specific hazards**

When heated and in case of fire, irritating vapours/gases may be formed. Vapours may be ignited by a spark, a hot surface or an ember.

**5.3. Advice for firefighters****Special Fire Fighting Procedures**

Fight advanced or massive fires from safe distance or protected location. Move container from fire area if it can be done without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Keep up-wind to avoid fumes. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Avoid heat, flames and other sources of ignition.

**Protective equipment for fire-fighters**

Use personal protective equipment as required.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Keep upwind. Evacuate area. Keep away from sources of ignition - No smoking. Do not handle broken packages without protective equipment. Put on protective equipment before entering danger area.

**6.2. Environmental precautions**

Do not discharge into drains, water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

**6.3. Methods and material for containment and cleaning up**

Large Spillages: Build dikes to control spillage. Avoid lowland and keep upwind. Environmental manager must be informed of all major spillages. Collect spillage in containers, seal securely and deliver for disposal according to local regulations. Small Spillages: Collect spilled material in appropriate container for disposal Wash thoroughly after dealing with a spillage.

**6.4. Reference to other sections**

For personal protection, see section 8. For waste disposal, see section 13.

**SECTION 7: HANDLING AND STORAGE****7.1. Precautions for safe handling**

Keep separated from incompatible substances. Wash thoroughly after handling. Avoid contact with skin and eyes. For personal protection, see section 8.

**7.2. Conditions for safe storage, including any incompatibilities**

Protect against direct sunlight. Do not store near heat sources or expose to high temperatures. Static electricity and formation of sparks must be prevented. Keep away from combustible materials. Store in accordance with local regulations.

**7.3. 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**

| Name | STD   | TWA - 8 Hrs |                     | STEL - 15 Min |  | Notes |
|------|-------|-------------|---------------------|---------------|--|-------|
| BHT  | ACGIH |             | 2 mg/m <sup>3</sup> |               |  |       |

ACGIH = American Conference of Governmental Industrial Hygienists.

**Ingredient Comments**

No exposure limits noted for ingredient(s).

**8.2. Exposure controls****Protective equipment**

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**Process conditions**

Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash, quick drench.

**Engineering measures**

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

**Respiratory equipment**

Under frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

When take shelter:

- Dust, mist, fume-purifying respiratory protection
- Any air-purifying respirator with a corpuscle filter of high efficiency
- Any respiratory protection with a electromotion fan (for dust, mist, fume-purifying)
- High-efficiency particulate filter respirator attached self-service protector

For Unknown Concentration or Immediately Dangerous to Life or Health:

- Self-contained breathing apparatus (pressure-demand or other positive-pressure mode in combination)
- Supplied-air respirator with full facepiece.

**Hand protection**

Wear appropriate chemical resistant gloves. PVC or rubber gloves are recommended.

**Eye protection**

Wear approved safety goggles. Wear safety glasses with side-shields conforming to EN166.

**Skin protection**

Wear appropriate chemical resistant clothing.

**Environmental Exposure Controls**

Avoid releasing to the environment.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**9.1. Information on basic physical and chemical properties**

|                   |                    |
|-------------------|--------------------|
| <b>Appearance</b> | Solid              |
| <b>Colour</b>     | Yellow white       |
| <b>Odour</b>      | Mild.              |
| <b>Solubility</b> | Insoluble in water |

**Initial boiling point and boiling range**

Not applicable.

**Melting point (°C)**

Not applicable.

**Relative density**

Not available.

**Vapour density (air=1)**

Not applicable.

**Vapour pressure**

Not applicable.

**Evaporation rate**

Not available.

**pH-Value, Conc. Solution**

Not applicable.

**Viscosity**

Not applicable.

**Decomposition temperature (°C)**

Not applicable.

**Odour Threshold, Lower**

Not available.

**Odour Threshold, Upper**

Not available.

**Flash point**

Not applicable.

**Auto Ignition Temperature (°C)** 316°C

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**Flammability Limit - Lower(%)**

Not available.

**Flammability Limit - Upper(%)**

Not available.

**Partition Coefficient  
(N-Octanol/Water)**

Not applicable.

**Explosive properties**

Not applicable.

**Other Flammability**

Not available.

**Oxidising properties**

Not available.

**9.2. Other information****Mol. Weight** 500, 000**SECTION 10: STABILITY AND REACTIVITY****10.1. Reactivity**

Not available.

**10.2. Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3. Possibility of hazardous reactions**

Will not occur.

**10.4. Conditions to avoid**

Direct sunlight. above 50 °C. Oxidising materials. Avoid dust close to ignition sources.

**10.5. Incompatible materials****Materials To Avoid**

Acid anhydrides. Acid chlorides (Acyl chlorides). Acids, bases, oxidizing agents. Metal or metallic Copper. Stainless steel.

**10.6. Hazardous decomposition products**Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Irritating and toxic fumes, smoke, and gas.**SECTION 11: TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects****Acute toxicity:****Acute Toxicity (Oral LD50)**

Not available.

**Acute Toxicity (Dermal LD50)**

Not available.

**Acute Toxicity (Inhalation LC50)**

Not available.

**Skin Corrosion/Irritation:**

Not available.

**Serious eye damage/irritation:**

Not available.

**Respiratory or skin sensitisation:****Respiratory sensitisation**

Not available.

**Skin sensitisation**

Not available.

**Germ cell mutagenicity:****Genotoxicity - In Vitro**

Not available.

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**Genotoxicity - In Vivo**

Not available.

**Carcinogenicity:**

Not classified to be carcinogenic substance (A1) and carcinogenic substance of presumed (A2) in Public notice. Antioxidant (BHT): IARC group 3, ACGIH group 4

**Reproductive Toxicity:****Reproductive Toxicity - Development**

Not relevant

**Specific target organ toxicity - single exposure:****STOT - Single exposure**

Not available.

**Specific target organ toxicity - repeated exposure:****STOT - Repeated exposure**

Not available.

**Aspiration hazard:**

Not available.

**Toxicological information on ingredients.****Polybutadiene (CAS: 9003-17-2)****Skin Corrosion/Irritation:**

Cause irritation of the skin. (source : HSDB)

**Serious eye damage/irritation:**

Cause irritation of the eyes. (source : HSDB)

**Respiratory or skin sensitisation:**

Cause irritation of the respiratory tract. (source : HSDB)

**BHT (CAS: 128-37-0)****Acute toxicity:****Acute Toxicity (Oral LD50)**

> 6000 mg/kg Rat

**Acute Toxicity (Dermal LD50)**

> 2000 mg/kg Rat

**Acute Toxicity (Inhalation LC50)**

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

**Skin Corrosion/Irritation:**

Non-irritant (rabbit)

**Serious eye damage/irritation:**

Not Irritating.

**SECTION 12: ECOLOGICAL INFORMATION****Ecotoxicity**

The product is not expected to be hazardous to the environment.

**12.1. Toxicity****Acute Toxicity - Fish**

Not available.

**Acute Toxicity - Aquatic Invertebrates**

Not available.

**Acute Toxicity - Aquatic Plants**

Not available.

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**Acute Toxicity - Microorganisms**

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.

**Acute Toxicity - Terrestrial**

Not available.

Ecological information on ingredients.BHT (CAS: 128-37-0)**Acute Toxicity - Fish**

LC50 96 hours 0.199 mg/l

(Calculated from QSAR approach)

**Acute Toxicity - Aquatic Invertebrates**

EC50 48 hours 0.77 mg/l Daphnia magna

**Acute Toxicity - Aquatic Plants**

EC50 96 hours 0.758 mg/l

(Calculated from QSAR approach)

**Acute Toxicity - Microorganisms**

EC50 1.7 mg/l

Exposure duration : 24hr

**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**

Not available.

**Degradability**

Not available.

**Phototransformation**

Not available.

**Stability (Hydrolysis)**

Not available.

**Biodegradation**

Not available.

Ecological information on ingredients.BHT (CAS: 128-37-0)**Phototransformation**

Air. Half-life: 0.585 days

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

**Biodegradation**

Water and Sediment

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

Soil Degradation (77~92%) 1 days

**12.3. Bioaccumulative potential****Bioaccumulation factor**

Not available.

**Partition coefficient**

Not applicable.

Ecological information on ingredients.BHT (CAS: 128-37-0)**Bioaccumulation factor**

BCF 598.4

**12.4. Mobility in soil**

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**Mobility:**

Not available.

**Henry's Law Constant**

Not available.

Ecological information on ingredients.BHT (CAS: 128-37-0)**Adsorption/Desorption Coefficient**

log Koc 4.362

Calculated using PCKOCWIN v1.66 model.

**Henry's Law Constant**8.928E-005 atm m<sup>3</sup>/mol

Calculated using HENRYWIN v3.10 model.

**12.5. Results of PBT and vPvB assessment**

Not available.

Ecological information on ingredients.BHT (CAS: 128-37-0)

Not Classified as PBT/vPvB by current EU criteria.

**12.6. Other adverse effects**

Not available.

**SECTION 13: DISPOSAL CONSIDERATIONS****General information**

Dispose of waste and residues in accordance with local authority requirements. 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 the waste by oil/water separation.

**13.1. Waste treatment 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 regulation 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 MARPOL73/78 and the IBC Code**

Not applicable.



## SECTION 15: REGULATORY INFORMATION

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

#### Water hazard classification

Contains 2, 6-Di-tert-butyl-4-methylphenol showing WGK 1. 2, 6-Di-tert-butyl-4-methylphenol is regulated by DFG as carcinogen category 4, pregnancy risk group C.

### 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. HSDB : Hazardous Substance Data Bank

**Issued By** KIST Europe

**Safety Data Sheet Status** Approved.

**Date** 01.08.2013

#### Risk Phrases In Full

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### Hazard Statements In Full

H412 Harmful to aquatic life with long lasting effects.

H410 Very toxic to aquatic life with long lasting effects.

H400 Very toxic to aquatic life.

#### Disclaimer

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.