

KUMHO PETROCHEMICAL

SAFETY DATA SHEET KUMHO RM21L

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 RM21L

REACH registration number -

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

Identified uses Raw materials for rubber products (tires, rubber shoes, sneakers, rubber hoses, belts)

Uses advised against Not available.

1.3. Details of the supplier of the safety data sheet

Supplier OR of KOREA KUMHO Petrochemical Co., Ltd.
KIST Europe Forschungsgesellschaft mbH
Campus E71
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.
64, Sanggae-ro, Nam-gu
Ulsan, Korea
680-180

Tel : +82-52-259-6051~7
Fax : +82-52-259-6053

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 Not Classified

2.2. Label elements

Hazard statements NC Not Classified

2.3. Other hazards

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

Styrene-Butadiene Copolymer	94 - 96 %
CAS number: 9003-55-8	

Classification

Not Classified

Facid**1 - 5 %**

CAS number: 67701-06-8

Classification

Not Classified

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-****)

SECTION 4: First aid measures**4.1. Description of first aid measures**

General information	Get medical attention.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothing and rinse skin thoroughly with water. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
Eye contact	Do not rub eye. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Continue to rinse for at least 15 minutes.

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

Inhalation	Harmful if inhaled.
Skin contact	May cause skin sensitization or allergic reaction.

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.
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SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable extinguishing media	Water. Foam. Carbon dioxide (CO ₂). Dry chemicals.
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. Dust or gas may ignite by flames. Dust may form explosive mixture with air. May explode when heated or when exposed to flames or sparks.
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Hazardous combustion products Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Keep up-wind to avoid fumes. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Fight advanced or massive fires from safe distance or protected location. Avoid inhalation of materials or combustion by-products. Cool containers exposed to flames with water until well after the fire is out. Move containers from fire area if it can be done without risk.

Special protective equipment for firefighters Use protective equipment appropriate for surrounding materials.

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 heat, flames and other sources of ignition. Keep upwind. Do not handle broken packages without protective equipment. Provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions Store away from waterwork or drainage system. Prevent run-off from entering ground, storm sewers and ditches which lead to natural waterways. If large spills, call emergency services to get advice.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Small Spillages: Collect spilled material in appropriate container for disposal. Large Spillages: Avoid lowland and keep upwind. Keep up-wind to avoid fumes. Dispose of contents/containers in accordance with local/regional/national/international regulations.

6.4. Reference to other sections

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

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet. Avoid contact with skin and eyes. Avoid heat, flames and other sources of ignition. Wash thoroughly after handling. All handling should only take place in well-ventilated areas. Avoid handling which leads to dust formation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store and handle in accordance with all current regulations and standards. Store in tightly-closed, original container in a dry, cool and well-ventilated place. Do not store near heat sources or expose to high temperatures. Protect against direct sunlight.

7.3. Specific end use(s)

Specific end use(s) Not available.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

ACGIH

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

8.2. Exposure controls

Protective equipment**Appropriate engineering controls**

Provide adequate general and local exhaust 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. Wash hands after handling.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Under frequent use or heavy exposure, respiratory protection may be needed. In case of dust formation, wear respirator with particle filter.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Solid
Colour	White.
Odour	Mild.
Odour threshold	Not available. Not available.
pH	Not available. Not available.
Melting point	Not applicable.
Initial boiling point and range	Not applicable.
Flash point	246°C
Evaporation rate	Not applicable.
Upper/lower flammability or explosive limits	Not available.
Other flammability	Not available.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	Not applicable.
Solubility(ies)	Insoluble in water.
Partition coefficient	Not applicable.
Auto-ignition temperature	> 388°C
Decomposition Temperature	Not available.
Viscosity	Not applicable.
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information

Molecular weight \approx 500,000

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Not available.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Will not occur.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid Not available.

10.6. Hazardous decomposition products

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

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.

Skin corrosion/irritation

Animal data Not available.

Serious eye damage/irritation

Serious eye damage/irritation Not available.

Germ cell mutagenicity

Genotoxicity - in vitro Not available.

Genotoxicity - in vivo Not available.

Carcinogenicity

Carcinogenicity Not available.

Reproductive toxicity

Reproductive toxicity - fertility Not available.

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.

Toxicological information on ingredients.FacidAcute toxicity - oral

Acute toxicity oral (LD₅₀ 2,000.0
mg/kg)

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 2,000.0
mg/kg)

Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation 0.1621
(LC₅₀ vapours mg/l)

Species Rat

ATE inhalation (vapours 0.1621
mg/l)

SECTION 12: Ecological Information

Ecotoxicity There are no data on the ecotoxicity of this product.

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.

Ecological information on ingredients.Facid

Acute toxicity - fish LC50, 96 hours: 1354.4 mg/l, *Lepomis macrochirus* (Bluegill)

Acute toxicity - aquatic
invertebrates EC₅₀, 48 hours: > 4.8 mg/l, *Daphnia magna*

Acute toxicity - aquatic
plants EC₅₀, 72 hours: > 0.9 mg/l, *Selenastrum capricornutum*
(based on the growth rate)

12.2. Persistence and degradability

Persistence and degradability Not available.

Biodegradation Not available.

12.3. Bioaccumulative potential

Partition coefficient Not applicable.

12.4. Mobility in soil

Mobility Not available.

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 contents/containers in accordance with local/regional/national/international regulations. 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

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

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**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

A chemical safety assessment has been carried out for Facid (CAS:67701-06-8).

SECTION 16: Other information

Issued by KIST Europe
SDS number 20526
SDS status Approved.

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.