

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Mixture
Product name : SOL 6431H
UFI : MU20-V0JK-K00X-NHRY

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Main use category : Industrial use
Use of the substance/mixture : Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet**Manufacturer**

Kumho Petrochemical Co. Ltd (Yeosu)
331, Sandanjungang-ro, Yeosu-si, Jeollanam-do, Republic of Korea
T +82-061-688-3060~9 - F +82-061-688-3168

Supplier

TsafeE GmbH
Landwehrpl 6, 66111, Saarbruecken, Germany
T +49 177 9166175
shkim@tsafeg.com

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Germany	Giftinformationszentrum-Nord der Länder Bremen, Hamburg, Niedersachsen und Schleswig-Holstein (GIZ-Nord) Universitätsmedizin Göttingen - Georg-August-Universität	Robert-Koch Straße 40 37075 Göttingen	+49 (0) 551 19240	(English only)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Hazardous to the aquatic environment — Chronic Hazard, Category 3 H412

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Harmful to aquatic life with long lasting effects.

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Signal word (CLP) : -
Hazard statements (CLP) : H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP) : P273 - Avoid release to the environment.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Mixture does not contain substance (s) classified as PBT or vPvB in concentrations above 0,1%.

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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
STYRENE/BUTADIENE COPOLYMER	(CAS-No.) 9003-55-8	78.5 – 81.5	Not classified
Distillates (petroleum), solvent-refined heavy paraffinic	(CAS-No.) 64741-88-4 (EC-No.) 265-090-8	18.5 – 21.5	Not classified
2,6-Di-tert-butyl-p-cresol	(CAS-No.) 128-37-0 (EC-No.) 204-881-4	0.3 – 0.6	Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a physician immediately. Treat symptomatically.
First-aid measures after skin contact	: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. Get immediate medical advice/attention. Wash skin with plenty of water.
First-aid measures after eye contact	: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth thoroughly with water. Do NOT induce vomiting unless directed to do so by a physician. Get immediate medical advice/attention. Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Heating may cause a fire.
Explosion hazard	: Pressurised container: May burst if heated.
Hazardous decomposition products in case of fire	: Toxic by inhalation. Vapour could cause dizziness or suffocation.

5.3. Advice for firefighters

Precautionary measures fire	: Withdraw immediately in case of rising sound from venting devices or discolouration from tank. Avoid inhalation of vapours.
Firefighting instructions	: NOTIFY POLICE AND FIRE BRIGADE IMMEDIATELY.

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Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Ventilate confined spaces before entering. Approach from upwind. Only qualified personnel equipped with suitable protective equipment may intervene.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. This material and its container must be disposed of in a safe way, and as per local legislation. In case of large spillages: Stay upwind/keep distance from source. Collect leaking and spilled liquid in sealable containers as far as possible. Small spillages: Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.

Other information : To be disposed of as hazardous waste. Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Separate working clothes from town clothes. Launder separately.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect from sunlight. Keep container closed when not in use. Do not allow product to reach ground water, water bodies or sewage system, even in small quantities. Store in a well-ventilated place. Keep cool. Store locked up.

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

2,6-Di-tert-butyl-p-cresol (128-37-0)	
France - Occupational Exposure Limits	
Local name	2,6-Di-tert-butyl-p-crésol
VME (OEL TWA)	10 mg/m ³
Note (FR)	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	2,6-Di-tert-butyl-p-kresol
AGW (OEL TWA) [1]	10 mg/m ³ (E)
Peak exposure limitation factor	4(II)
Remark	DFG;Y;11
Regulatory reference	TRGS900
Spain - Occupational Exposure Limits	
Local name	2,6-Diterc-butyl-p-cresol
VLA-ED (OEL TWA) [1]	10 mg/m ³
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT
United Kingdom - Occupational Exposure Limits	
Local name	2,6-Di-tert-butyl-p-cresol
WEL TWA (OEL TWA) [1]	10 mg/m ³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

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PNEC (Oral)	
PNEC oral (secondary poisoning)	9.33 mg/kg food

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Measure concentrations regularly, and at the time of any change occurring in conditions likely to have consequences on workers exposure. Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):

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8.2.2.1. Eye and face protection

Eye protection:

Provide readily accessible eye wash stations and safety showers.

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing. In case of possible repeated skin contact wear protective clothing

Hand protection:

Protective gloves. In case of repeated or prolonged contact wear gloves

8.2.2.3. Respiratory protection

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear appropriate mask. In case of insufficient ventilation, wear suitable respiratory equipment. Ventilation

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Not available
Odour	: Not available
Odour threshold	: Not available
Melting point	: 0 °C
Freezing point	: Not applicable
Boiling point	: Not available
Flammability	: Non flammable.
Explosive limits	: Not applicable
Lower explosive limit (LEL)	: Not applicable
Upper explosive limit (UEL)	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: ≈ 440 °C
Decomposition temperature	: Not available
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Insoluble.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50 °C	: Not available
Density	: Not available
Relative density	: Not available

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Relative vapour density at 20 °C	: Not applicable
Particle size	: Not available
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Not available
Acute toxicity (dermal)	: Not available
Acute toxicity (inhalation)	: Not available

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LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Guideline: OECD Guideline 420 (Acute Oral Toxicity - Fixed Dose Method)
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2,6-Di-tert-butyl-p-cresol (128-37-0)

LD50 oral rat	> 2930 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

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Distillates (petroleum), solvent-refined heavy paraffinic (64741-88-4)

LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Guideline: OECD Guideline 420 (Acute Oral Toxicity - Fixed Dose Method)
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Skin corrosion/irritation	: Not available
Serious eye damage/irritation	: Not available
Respiratory or skin sensitisation	: Not available
Germ cell mutagenicity	: Not available
Carcinogenicity	: Not available

2,6-Di-tert-butyl-p-cresol (128-37-0)

NOAEL (chronic, oral, animal/male, 2 years)	25 mg/kg bodyweight Animal: rat, Animal sex: male, Remarks on results: other:Effect type: toxicity (migrated information)
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Reproductive toxicity	: Not available
STOT-single exposure	: Not available
STOT-repeated exposure	: Not available

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LOAEL (oral, rat, 90 days)	125 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	≈ 1000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

2,6-Di-tert-butyl-p-cresol (128-37-0)

LOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Animal sex: male
NOAEL (oral, rat, 90 days)	25 mg/kg bodyweight Animal: rat, Animal sex: male

Distillates (petroleum), solvent-refined heavy paraffinic (64741-88-4)

LOAEL (oral, rat, 90 days)	125 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	≈ 1000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

Aspiration hazard	: Not available
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Viscosity, kinematic	Not applicable
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11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Not available
Hazardous to the aquatic environment, long-term (chronic)	: Harmful to aquatic life with long lasting effects.

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Not rapidly degradable

2,6-Di-tert-butyl-p-cresol (128-37-0)	
LC50 - Fish [1]	> 0.57 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	0.48 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 0.4 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
LOEC (chronic)	1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.023 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	0.053 mg/l Test organisms (species): Oryzias latipes Duration: '42 d'

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

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Mixture does not contain substance (s) classified as PBT or vPvB in concentrations above 0,1%.

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Oil-Water Separation. Incineration. Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

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14.5. Environmental hazards

Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Special transport precautions : Department of Transportation (DOT), Local transport follows in accordance with Dangerous goods Safety Management Law

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

Germany

Employment restrictions

: Observe restrictions according Act on the Protection of Working Mothers (MuSchG)
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG)

Water hazard class (WGK)

: WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1)

Hazardous Incident Ordinance (12. BImSchV)

: Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Storage class (LGK, TRGS 510)

: LGK 6.1D - Non-combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects

Joint storage table

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for

: LGK 1, LGK 2A, LGK 4.1A, LGK 5.1A, LGK 5.1C, LGK 5.2, LGK 6.2, LGK 7

Joint storage with restrictions permitted for

: LGK 3, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1B

Joint storage permitted for

: LGK 2B, LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12, LGK 13, LGK 10-13

Netherlands

ABM category

: Z(1) - non biodegradable substances with hazardous properties for humans and the environment (carcinogenicity/ mutagenicity/ reprotoxicity/bioacumulative potential/ toxicity or persistence)

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SZW-lijst van kankerverwekkende stoffen	: Distillates (petroleum), solvent-refined heavy paraffinic is listed
SZW-lijst van mutagene stoffen	: Distillates (petroleum), solvent-refined heavy paraffinic is listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	: None of the components are listed
Denmark	
Danish National Regulations	: Young people below the age of 18 years are not allowed to use the product Pregnant/breastfeeding women working with the product must not be in direct contact with the product
Switzerland	
Storage class (LK)	: LK 10/12 - Liquids

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration

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RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

The classification complies with : ATP 12

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.