

METHYLISOBUTYLKETON

Version: 11.00

Revision Date 05.04.2019

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier**

| | |
|-------------------------------------|--|
| Trade name | Methylisobutylketon |
| REACH No. | 01-2119473980-30-0001 |
| Substance name (REACH / CLP) | 4-methylpentan-2-one; isobutyl methyl ketone |

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

| | |
|-----------------------------|---|
| Use | Solvent raw material for printing inks and printing ink additives raw material for photochemicals |
| Uses advised against | |

1.3 Details of the supplier of the safety data sheet

| | |
|--------------------------------------|--|
| Company | Sasol Chemie GmbH & Co. KG Anckelmannsplatz 1 20537 Hamburg Germany |
| | Telephone: +49 40 63684-1000 Telefax: +49 40 63684-3700 |
| Information (Product safety): | Telephone: + 49 (0) 23 65 - 49 47 05 Telefax: + 49 (0) 23 65 - 49 92 40 |
| E-mail address | solvents.germany.msds@de.sasol.com |

1.4 Emergency telephone number

| | |
|-----------------------------------|--|
| Emergency telephone number | +44 (0)1235 239 670 (Europe, Israel, Africa, Americas) +44 (0)1235 239 671 (Middle East, Arabic African countries) +65 3158 1074 (Asia Pacific) +86 10 5100 3039 (China) +27 (0)17 610 4444 (South Africa) +61 (2)8014 4558 (Australia) |
|-----------------------------------|--|

SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

| | |
|--|-------------------------------------|
| Flammable liquids Category 2 | Highly flammable liquid and vapour. |
| Acute toxicity Category 4 (Inhalation) | Harmful if inhaled. |
| Eye irritation Category 2 | Causes serious eye irritation. |
| Specific target organ toxicity - single exposure Category 3 (Respiratory system) | May cause respiratory irritation. |

2.2 Label elements

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Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

| | |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |

Precautionary statements

| | |
|--------------------|--|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. No smoking. |
| P233 | Keep container tightly closed. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. |

Supplemental Hazard Statements

| | |
|--------|---|
| EUH066 | Repeated exposure may cause skin dryness or cracking. |
|--------|---|

Hazardous components which must be listed on the label:

- 4-methylpentan-2-one; isobutyl methyl ketone

2.3 Other hazards

Vapours may form explosive mixture with air.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance in the meaning of regulation (EC) 1907/2006.

COMPONENTS TO BE NAMED IN ACCORDANCE WITH REGULATION (EC) 1907/2006 AS WELL AS OTHER HAZARDOUS INGREDIENTS AND CONTAINED SUBSTANCES WITH WORK PLACE LIMIT VALUES

4-methylpentan-2-one; isobutyl methyl ketone

content: <= 100 %

component type: Active ingredient

EC-No.: 203-550-1

Index-No.: 606-004-00-4

CAS-No.: 108-10-1

REACH No.: 01-2119473980-30-0001

Classification (Regulation (EC) No 1272/2008):

| | |
|---------------------------------|------|
| Flam. Liq. 2 | H225 |
| Acute Tox. 4 (Inhalation) | H332 |
| Eye Irrit. 2 | H319 |
| STOT SE 3 (Respiratory organs) | H335 |

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For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures**

| | |
|--------------------------------|---|
| General advice | Take off contaminated clothing and shoes immediately. |
| If inhaled | If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| In case of skin contact | Wash off immediately with plenty of water. |
| In case of eye contact | In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| If swallowed | Obtain medical attention. |

4.2 Most important symptoms and effects, both acute and delayed

| | |
|--|----------------------------------|
| Most important symptoms and effects, both acute and delayed | Risks: No information available. |
|--|----------------------------------|

4.3 Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| Indication of any immediate medical attention and special treatment needed | Treatment: For specialist advice physicians should contact the Poisons Information Service. |
|---|---|

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**

| | |
|-------------------------------------|---|
| Suitable extinguishing media | Alcohol-resistant foam, Dry powder, Water spray, Carbon dioxide (CO ₂) in enclosed spaces |
|-------------------------------------|---|

5.2 Special hazards arising from the substance or mixture

| | |
|---|---|
| Specific hazards during firefighting | When fighting fires in enclosed spaces: caution, danger of suffocation! Flash back possible over considerable distance. Vapours may form explosive mixtures with air. |
|---|---|

5.3 Advice for firefighters

| | |
|--|--|
| Special protective equipment for firefighters | Wear self-contained breathing apparatus and protective suit. |
| Further information | Cool containers/tanks with water spray. |

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

| | |
|-----------------------------|--|
| Personal precautions | Ensure adequate ventilation. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. |
|-----------------------------|--|

6.2 Environmental precautions

| | |
|----------------------------------|--|
| Environmental precautions | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. |
|----------------------------------|--|

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6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). The material taken up must be disposed of in accordance with regulations.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Ensure adequate ventilation.
Vapours are heavier than air and may spread along floors.
Avoid formation of aerosol.

Advice on protection against fire and explosion Do not allow to enter drains (danger of explosion).
Use only explosion-proof equipment.
Take precautionary measures against static discharges.
Vapours may form explosive mixtures with air.
Keep away from sources of ignition - No smoking.

Temperature class T1

Fire-fighting class B: Fires involving liquids or liquid containing substances. Also includes substances which become liquid at elevated temperatures.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Keep tightly closed in a dry, cool and well-ventilated place.

Storage class (TRGS 510) 3: Flammable liquids

7.3 Specific end use(s)

Specific use(s) Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

National occupational exposure limits

| Control parameters / Substance name | Typ | Control parameters | Update | Basis |
|-------------------------------------|--------------|----------------------------------|--------------------|-------------|
| METHYL ISOBUTYL KETONE | TWA TWA | 410 mg/m ³ 100 ppm | 09 2001 09 2001 | Greece OELs |
| METHYL ISOBUTYL KETONE | STEL STEL | 410 mg/m ³ 100 ppm | 09 2001 09 2001 | Greece OELs |
| Can be absorbed through the skin. | | | | |

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EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

| Control parameters / Substance name | Typ | Control parameters | Update | Basis |
|-------------------------------------|--------------|---------------------------------|--------------------|--------------------------|
| 4-METHYLPENTAN-2-ONE | TWA TWA | 83 mg/m ³ 20 ppm | 02 2006 02 2006 | EU Exposure Limit Values |
| 4-METHYLPENTAN-2-ONE | STEL STEL | 208 mg/m ³ 50 ppm | 02 2006 02 2006 | EU Exposure Limit Values |
| 4-METHYLPENTAN-2-ONE | TWA TWA | 83 mg/m ³ 20 ppm | 2014 2014 | EU SCOELS |
| 4-METHYLPENTAN-2-ONE | STEL STEL | 208 mg/m ³ 50 ppm | 2014 2014 | EU SCOELS |

DERIVED NO EFFECT LEVEL (DNEL)

| Substance name: 4-methylpentan-2-one; isobutyl methyl ketone | | | |
|--|--|----------------------------|-------------------------------|
| End Use | Exposure routes | Value | Note |
| Workers | dermal, Acute/short-term exposure - systemic effects | | Not relevant / Not applicable |
| | Inhalation, Acute/short-term exposure - systemic effects | 208 mg/m ³ | |
| | dermal, Acute/short-term exposure - local effects | | Not relevant / Not applicable |
| | Inhalation, Acute/short-term exposure - local effects | 208 mg/m ³ | |
| | dermal, long-term exposure - systemic effects | 11,8 mg/kg Body weight/day | |
| | Inhalation, long-term exposure - systemic effects | 83 mg/m ³ | |
| | dermal, long-term exposure - local effects | | Not relevant / Not applicable |
| Consumers | Inhalation, long-term exposure - local effects | 83 mg/m ³ | |
| | dermal, Acute/short-term exposure - systemic effects | | Not relevant / Not applicable |
| | Inhalation, Acute/short-term exposure - systemic effects | 155,2 mg/m ³ | |
| | Oral, Acute/short-term exposure - systemic effects | | Not relevant / Not applicable |
| | dermal, Acute/short-term exposure - local effects | | Not relevant / Not applicable |
| | Inhalation, Acute/short-term exposure - local effects | 155,2 mg/m ³ | |
| | dermal, long-term exposure - systemic effects | 4,2 mg/kg Body weight/day | |
| | Inhalation, long-term exposure - systemic | 14,7 mg/m ³ | |

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| | | | |
|--|--|------------------------------|-------------------------------|
| | effects | | |
| | Oral, long-term exposure - systemic effects | 4,2 mg/kg Body weight/day | |
| | dermal, long-term exposure - local effects | | Not relevant / Not applicable |
| | Inhalation, long-term exposure - local effects | 14,7 mg/m3 | |

PREDICTED NO EFFECT CONCENTRATION (PNEC)

| Substance name: 4-methylpentan-2-one; isobutyl methyl ketone | | |
|--|------------|-------------------------------|
| Environmental Compartment | Value | Note |
| Fresh water | 0,6 mg/l | |
| Marine water | 0,06 mg/l | |
| intermittent release | 1,5 mg/l | |
| treatment plant | 27,5 mg/l | |
| Fresh water sediment | 8,27 mg/kg | based on dry weight |
| Marine sediment | 0,83 mg/kg | based on dry weight |
| Soil | 1,3 mg/kg | based on dry weight |
| food | | Not relevant / Not applicable |

8.2 Exposure controls

PERSONAL PROTECTIVE EQUIPMENT

| | |
|---------------------------------|--|
| Respiratory protection | No personal respiratory protective equipment normally required. In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter (e.g. where aerosols are in use, or smoke and mist occur, A-P2 or ABEK-P2), in compliance with EN 141. |
| Hand protection | <p>The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature).</p> <p>gloves suitable for permanent contact: Material: Multi-layer glove - polyethylene/ethylene-vinyl alcohol copolymer/polyethylene Break through time: >= 480 min</p> |
| Eye protection | Tightly fitting safety goggles |
| Skin and body protection | Wear suitable protective equipment. |
| Hygiene measures | Take off all contaminated clothing immediately. |

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Protective measures Do not breathe vapours or spray mist. Avoid contact with the skin and the eyes.

ENVIRONMENTAL EXPOSURE CONTROLS

General advice Do not flush into surface water or sanitary sewer system.
Do not allow material to contaminate ground water system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| Physical state | liquid; 20 °C; 1.013 hPa |
| Form | liquid |
| Colour | colourless |
| Odour | characteristic, acetone-like |
| Odour Threshold | No valid method available |
| pH | Not applicable |
| Melting point/range | -84 °C; 1.013 hPa |
| Boiling point/boiling range | 116 - 118 °C; 1.013 hPa; DIN 53171 |
| Flash point | 15 - 23 °C; DIN 51755 |
| Evaporation rate | No data available |
| Flammability (solid, gas) | not applicable (liquid) |
| Lower explosion limit | 1,2 %(V) |
| Upper explosion limit | 8,0 %(V) |
| Vapour pressure | 20,2 hPa; 20 °C 26,4 hPa; 25 °C |
| Relative vapour density | ca. 3,45 |
| Density | 0,7978 g/cm ³ ; 20 °C |
| Solubility/qualitative | miscible with most organic solvents |
| Water solubility | 14,1 g/l; 20 °C |
| Partition coefficient: n-octanol/water | Pow: 79; log Pow: 1,9; pH: 6,7 |
| Ignition temperature | 448 °C; DIN 51794 |
| Auto-ignition temperature | 460 °C; 1.013 hPa |
| Viscosity, dynamic | 0,585 mPas; 20 °C |
| Explosive properties | not expected based on structure and functional groups |
| Oxidizing properties | not expected based on structure and functional groups |

9.2 Other data

None known.

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SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

Note Vapours may form explosive mixture with air.

10.2 Chemical stability

Note No data available

10.3 Possibility of hazardous reactions

Hazardous reactions May form explosive peroxides.

10.4 Conditions to avoid

Conditions to avoid Extremes of temperature and direct sunlight.

10.5 Incompatible materials to avoid

Materials to avoid Oxidizing agents;

10.6 Hazardous decomposition products

Hazardous decomposition products None known.

Thermal decomposition Distills without decomposition at atmospheric pressure.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity**

Acute oral toxicity 4-methylpentan-2-one; isobutyl methyl ketone:
LD50 Rat: > 2.000 - 5.000 mg/kg; (literature value)
(literature value)
Based on available data, the classification criteria are not met.

Acute inhalation toxicity 4-methylpentan-2-one; isobutyl methyl ketone:
LC50 Rat: > 2 - 20 mg/l; 4 h
Test atmosphere: vapour
(literature value)
Harmful if inhaled.

Acute dermal toxicity 4-methylpentan-2-one; isobutyl methyl ketone:
LD50 Rat: > 2.000 mg/kg; OECD Test Guideline 402
(literature value)
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Skin irritation 4-methylpentan-2-one; isobutyl methyl ketone:
Rabbit: not irritating; OECD Test Guideline 404
(literature value)
Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

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| | |
|--|---|
| Eye irritation | <p>4-methylpentan-2-one; isobutyl methyl ketone: Rabbit: not irritating; OECD Test Guideline 405 (literature value)</p> <p>4-methylpentan-2-one; isobutyl methyl ketone: Derived from the classification according to Annex VI of Regulation (EC) 1272/2008. Causes serious eye irritation.</p> |
| Respiratory or skin sensitisation | |
| Sensitisation | <p>4-methylpentan-2-one; isobutyl methyl ketone: Maximisation Test Guinea pig: not sensitizing; OECD Test Guideline 406 Based on available data, the classification criteria are not met.</p> |
| Germ cell mutagenicity | |
| Genotoxicity in vitro | <p>4-methylpentan-2-one; isobutyl methyl ketone: In vitro tests did not show mutagenic effects (literature value)</p> |
| Genotoxicity in vivo | <p>4-methylpentan-2-one; isobutyl methyl ketone: In vivo tests did not show mutagenic effects (literature value)</p> |
| Remarks | <p>4-methylpentan-2-one; isobutyl methyl ketone: Based on available data, the classification criteria are not met.</p> |
| Carcinogenicity | |
| Carcinogenicity | <p>4-methylpentan-2-one; isobutyl methyl ketone: Rat; Inhalation; 2 years; NOAEC: 1.840 mg/m³; OECD Test Guideline 451 This effect is not relevant for human beings.</p> |
| Remarks | <p>4-methylpentan-2-one; isobutyl methyl ketone: Based on available data, the classification criteria are not met.</p> |
| Reproductive toxicity | |
| RemarksReproductive toxicity | <p>4-methylpentan-2-one; isobutyl methyl ketone: Based on available data, the classification criteria are not met.</p> |
| Effects on fertility | <p>4-methylpentan-2-one; isobutyl methyl ketone: Rat; inhalation (vapour); Two-generation study; OECD Test Guideline 416 General Toxicity - Parent: NOAEL 1.000 ppm Fertility: NOAEL 2.000 ppm Early Embryonic Development: NOAEL 1.000 ppm (literature value)</p> |
| Remarks-Teratogenicity | <p>4-methylpentan-2-one; isobutyl methyl ketone: Based on available data, the classification criteria are not met.</p> |
| Effects on foetal development | <p>4-methylpentan-2-one; isobutyl methyl ketone: Rat; inhalation (vapour); OECD Test Guideline 414 General Toxicity Maternal: NOAEL 1.000 ppm Teratogenicity: NOAEL 3.000 ppm Developmental Toxicity: NOAEL 3.000 ppm (literature value)</p> |
| STOT - single exposure | |
| Remarks | <p>4-methylpentan-2-one; isobutyl methyl ketone: Inhalation; Target Organs: Respiratory organs May cause respiratory irritation.</p> |
| STOT - repeated exposure | |
| Remarks | <p>4-methylpentan-2-one; isobutyl methyl ketone: The substance or mixture is not classified as specific target organ toxicant,</p> |

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| | |
|-------------------------------|--|
| Repeated dose toxicity | repeated exposure. 4-methylpentan-2-one; isobutyl methyl ketone: Rat; Oral; 90-day NOAEL: 250 mg/kg (based on body weight and day) LOAEL: 1.000 mg/kg (based on body weight and day) Target Organs: Kidney (literature value) 4-methylpentan-2-one; isobutyl methyl ketone: Rat; Inhalation; 2 years; NOAEC: 1840 mg/m ³ Target Organs: Kidney (literature value) |
| Aspiration hazard | |
| Aspiration toxicity | 4-methylpentan-2-one; isobutyl methyl ketone: Not applicable |
| Human experience | 4-methylpentan-2-one; isobutyl methyl ketone: Repeated exposure may cause skin dryness or cracking. |

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

| | |
|---|--|
| Toxicity to fish | 4-methylpentan-2-one; isobutyl methyl ketone: LC50 (96 h) Danio rerio (zebra fish): > 100 mg/l ; static test; OECD Test Guideline 203 (literature value) |
| Toxicity to fish - Chronic toxicity | 4-methylpentan-2-one; isobutyl methyl ketone: study scientifically unjustified Readily biodegradable. exposure considerations |
| Toxicity to daphnia and other aquatic invertebrates | 4-methylpentan-2-one; isobutyl methyl ketone: EC50 (48 h) Daphnia magna (Water flea): > 100 mg/l ; static test; OECD Test Guideline 202 (literature value) |
| Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity | 4-methylpentan-2-one; isobutyl methyl ketone: NOEC (21 d) Daphnia magna (Water flea): 30 mg/l; reproduction rate; semi-static test; (literature value) |
| Toxicity to aquatic plants | 4-methylpentan-2-one; isobutyl methyl ketone: NOEC (7 d) Lemna gibba (gibbous duckweed): >= 146 mg/l ; Growth rate; semi-static test; (literature value) |
| Toxicity to bacteria | 4-methylpentan-2-one; isobutyl methyl ketone: EC5 (16 h) Pseudomonas putida: 275 mg/l; static test; DIN 38412 (literature value) |
| Toxicity to soil dwelling organisms | 4-methylpentan-2-one; isobutyl methyl ketone: The study is not necessary. Not expected to adsorb on soil. |
| Toxicity to terrestrial flora | 4-methylpentan-2-one; isobutyl methyl ketone: The study is not necessary. Not expected to adsorb on soil. |
| Toxicity for other terrestrial non-mammalian fauna | 4-methylpentan-2-one; isobutyl methyl ketone: No data available |

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12.2 Persistence and degradability

Biodegradability 4-methylpentan-2-one; isobutyl methyl ketone:
Readily biodegradable.; > 60 %; 28 d; aerobic; OECD Test Guideline 301F
(literature value)

12.3 Bioaccumulative potential

Bioaccumulation 4-methylpentan-2-one; isobutyl methyl ketone:
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not
expected.

12.4 Mobility in soil

Mobility 4-methylpentan-2-one; isobutyl methyl ketone:
Adsorption/Soil; Koc: 101,85; calculated
(literature value)
Mobile in soils

12.5 Results of PBT and vPvB assessment

Results of PBT assessment 4-methylpentan-2-one; isobutyl methyl ketone:
Based on available data, the classification criteria are not met.

12.6 Other adverse effects

General advice 4-methylpentan-2-one; isobutyl methyl ketone:
None known.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Product Following pre-treatment and observing the regulations for hazardous wastes, it
must be taken to a permitted hazardous wastes landfill or hazardous wastes
incinerator.

Contaminated packaging Contaminated packaging should be emptied optimally and after being suitably
cleaned returned for re-use.

waste code of the European Union: EWC A waste code in accordance with the European Waste Catalogue (EWC) may not
be assigned to this product since it admits of a classification only when the
consumer uses it for some purpose.

SECTION 14: TRANSPORT INFORMATION**14.1 UN number**

| | |
|-----------|------|
| ADR | 1245 |
| RID | 1245 |
| ADN | 1245 |
| IMDG | 1245 |
| ICAO/IATA | 1245 |

14.2 Proper shipping name

| | |
|-----|------------------------|
| ADR | METHYL ISOBUTYL KETONE |
| RID | METHYL ISOBUTYL KETONE |

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| | |
|-----------|------------------------|
| ADN | METHYL ISOBUTYL KETONE |
| IMDG | METHYL ISOBUTYL KETONE |
| ICAO/IATA | METHYL ISOBUTYL KETONE |

14.3 Transport hazard class

| | |
|-----------|---|
| ADR | 3 |
| RID | 3 |
| ADN | 3 |
| IMDG | 3 |
| ICAO/IATA | 3 |

14.4 Packing group

| | |
|-----------|----|
| ADR | II |
| RID | II |
| ADN | II |
| IMDG | II |
| ICAO/IATA | II |

14.5 Environmental hazards

| | | |
|-----------|---------------------------|----|
| ADR | Environmentally hazardous | no |
| RID | Environmentally hazardous | no |
| ADN | Environmentally hazardous | no |
| IMDG | Marine pollutant | no |
| ICAO/IATA | Environmentally hazardous | no |

14.6 Special precautions for user

| | | |
|-----------|------------------------------|-------|
| ADR | Hazard Identification Number | 33 |
| | Labels | 3 |
| | Tunnel restriction code | (D/E) |
| IMDG | Labels | 3 |
| | EmS Number 1 | F-E |
| | EmS Number 2 | S-D |
| ICAO/IATA | Labels | 3 |

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks No information available.

SECTION 15: REGULATORY INFORMATION

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

Occupational restrictions Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed.

NATIONAL/OTHER REGULATIONS

Legislation on the control of Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on

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major-accident hazards involving dangerous substances

the control of major-accident hazards involving dangerous substances.

list entry in the directive:: FLAMMABLE LIQUIDS; P5c

Qualifying quantity 1: 5.000 t; Qualifying quantity 2: 50.000 t;

NOTIFICATION STATUS

| | | |
|--|------------|---|
| Switzerland. Consolidated Inventory | CH INV | listed (product or constituents are listed) |
| US. Toxic Substances Control Act | TSCA | listed (product or constituents are listed) |
| Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) | DSL | listed (product or constituents are listed) |
| Australia. Industrial Chemical (Notification and Assessment) Act | AICS | listed (product or constituents are listed) |
| Japan. Kashin-Hou Law List | ENCS (JP) | listed (product or constituents are listed) |
| Japan. Industrial Safety & Health Law (ISHL) List | ISHL (JP) | listed (product or constituents are listed) |
| Korea. Existing Chemicals Inventory (KECI) | KECI (KR) | listed (product or constituents are listed) |
| Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act | PICCS (PH) | listed (product or constituents are listed) |
| China. Inventory of Existing Chemical Substances (IECSC) | INV (CN) | listed (product or constituents are listed) |

Please note: the names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in chapter 3.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

| | |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |

Safety datasheet sections which have been updated:

11. Toxicological information

Further information:

This safety datasheet only contains information relating to safety and does not replace any product information or product specification. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage,

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transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

| | |
|-----------|---|
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure |
| ADR | Accord européen relatif au transport international des marchandises Dangereuses par Route |
| AICS | Australian Inventory of Chemical Substances |
| ANSI | American National Standards Institute |
| ASTM | American Society of Testing and Materials (US) |
| BCF | Bioconcentration factor |
| CLP | Regulation on Classification, Labelling and Packaging of Substances and Mixtures |
| DIN | Deutsches Institut für Normung |
| DNEL | Derived No-Effect Level |
| DSL | Domestic Substances List |
| EC... | Effect concentration ... % |
| ENCS | Existing Notified Chemical Substances (Japan) |
| EWC | European Waste Catalogue |
| IATA | International Air Transport Association |
| IBC | Intermediate Bulk Container |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISHL | Industrial Safety and Health Law (Japan) |
| ISO | International Organization for Standardization |
| IUAPC | International Union of Pure and Applied Chemistry |
| KECI | Korea Existing Chemicals Inventory |
| LC... | Lethal Concentration, ...% |
| LD... | Lethal Dose, ...% |
| MARPOL | International Convention for the Prevention of Pollution From Ships |
| NDSL | Non-Domestic Substances List |
| NOAEL | no observable adverse effect level |
| NOEL/NOEC | No Observed-effect level/concentration |
| NZIoC | New Zealand Inventory of Chemicals |
| OECD | Organisation for Economic Co-operation and Development |
| PBT | persistent, bioaccumulative, toxic |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport international ferroviaire de marchandises dangereuses |
| TG | Test Guideline |
| TRGS | Technische Regeln für Gefahrstoffe |
| TSCA | Toxic Substances Control Act |
| vPvB | very persistent, very bioaccumulative |
| WGK | Wassergefährdungsklasse |

Annex

Attachments to the safety data sheet and/or lists of the identified uses for the listed substances can be downloaded using the internet links below.

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/00000009285_EN_01.pdf