

Safety Data Sheet

according to UK REACH Regulation

Methyl isobutyl ketone > 99 % (MIBK, 4-methyl-2-pentanone) for analysis

Revision date: 16.10.2023 Product code: 20414 Page 1 of 12

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

1.1. Product identifier

Methyl isobutyl ketone > 99 % (MIBK, 4-methyl-2-pentanone) for analysis

REACH Registration Number: 01-2119473980-30-XXXX

CAS No: 108-10-1 Index No: 606-004-00-4 EC No: 203-550-1

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

Use of the substance/mixture

Laboratory chemical

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH Street: Stempelstraße 6 Place: D-47167 Duisburg Telephone: 0203/5194-0

E-mail: info@analytichem.de

Contact person: Abteilung Produktsicherheit Telephone: 0203/5194-107/117

E-mail: produktsicherheit@analytichem.de

Internet: www.analytichem.de

Responsible Department: Abteilung Produktsicherheit

1.4. Emergency telephoneFor Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire,number:Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada:

1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls

Telefax: 0203/5194-290

accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Flam. Liq. 2; H225 Carc. 2; H351 Acute Tox. 4; H332 Eye Irrit. 2; H319 STOT SE 3; H336

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Signal word: Danger

Pictograms:









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Hazard statements

H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.

P240 Ground and bond container and receiving equipment.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P403+P235 Store in a well-ventilated place. Keep cool.

Special labelling of certain mixtures

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C6H12O Molecular weight: 100,16 g/mol

Hazardous components

CAS No	Chemical name	Chemical name				
	EC No	EC No Index No REACH No				
	Classification (GB CLP Regulation)					
108-10-1	4-methylpentan-2-one	4-methylpentan-2-one				
	203-550-1	203-550-1 606-004-00-4 01-2119473980-30-XXXX				
	Flam. Liq. 2, Carc. 2, Acute Tox. 4, Eye Irrit. 2, STOT SE 3; H225 H351 H332 H319 H336 EUH066					

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity		
	Specific Conc. I	Specific Conc. Limits, M-factors and ATE			
108-10-1	203-550-1	203-550-1 4-methylpentan-2-one			
	inhalation: ATE 11 mg/l (vapours)				

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

No data available

After inhalation

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration.



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Call a physician immediately.

After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Observe risk of aspiration if vomiting occurs.

Call a physician immediately.

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

Irritant, Cough

Dyspnoea, Dizziness

Narcotic effects, Inebriation

Vomiting, Gastrointestinal complaints

Repeated exposure may cause skin dryness or cracking.

Liver and kidney damage

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

Give sodium sulfate as laxative (1 tablespoon in 1 glass of water) with plenty of activated coal.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray jet, Carbon dioxide (CO2), Foam, Extinguishing powder.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquid.

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Hazardous combustion products

Beware of reignition.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Move undamaged containers from immediate hazard area if it can be done safely.

Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Keep away from sources of ignition - No smoking.

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).

Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.



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Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Consult an expert

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders: Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.

When using do not eat, drink, smoke, sniff. Keep container tightly closed.

Use personal protection equipment. Use extractor hood (laboratory).

Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

Advice on protection against fire and explosion

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

Take off immediately all contaminated clothing and wash it before reuse.

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in a cool, well-ventilated place.



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Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances. national regulations

Further information on storage conditions

Keep container tightly closed and dry. storage temperature: +5°C - +30°C Protect against: Light, Air

7.3. Specific end use(s)

Laboratory use Laboratory chemical

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
108-10-1	4-Methylpentan-2-one	50	208		TWA (8 h)	WEL
		100	416		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time	ĺ
108-10-1	4-methylpentan-2-one	4-methylpentan-2-one	20 µmol/L	urine	Post shift	

DNEL/DMEL values

CAS No	Substance				
DNEL type		Exposure route	Effect	Value	
108-10-1	4-methylpentan-2-one				
Worker DNEL,	long-term	inhalation	systemic	83 mg/m³	
Worker DNEL,	acute	inhalation	systemic	208 mg/m³	
Worker DNEL,	long-term	inhalation	local	83 mg/m³	
Worker DNEL, acute		inhalation	local	208 mg/m³	
Worker DNEL, long-term		dermal	systemic	11,8 mg/kg bw/day	
Consumer DNE	EL, long-term	inhalation	systemic	14,7 mg/m³	
Consumer DNE	EL, acute	inhalation	systemic	155,2 mg/m³	
Consumer DNEL, long-term		inhalation	local	14,7 mg/m³	
Consumer DNEL, acute		inhalation	local	155,2 mg/m³	
Consumer DNEL, long-term		dermal	systemic	4,2 mg/kg bw/day	
Consumer DNE	EL, long-term	oral	systemic	4,2 mg/kg bw/day	



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PNEC values

CAS No	Substance				
Environment	tal compartment	Value			
108-10-1	4-methylpentan-2-one				
Freshwater		0,6 mg/l			
Freshwater (intermittent releases)		1,5 mg/l			
Marine water		0,06 mg/l			
Freshwater sediment		8,27 mg/kg			
Marine sediment		0,83 mg/kg			
Micro-organisms in sewage treatment plants (STP)		27,5 mg/l			
Soil		1,3 mg/kg			

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

By long-term hand contact: No data available

By short-term hand contact

Trade name/designation: KCL 898 Butoject®

Suitable material: Butyl caoutchouc (butyl rubber) 0,7 mm Wearing time with occasional contact (splashes): > 240 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Filtering device with filter or ventilator filtering device of type: A

Environmental exposure controls

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Colour: colourless



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Odour: characteristic
Odour threshold: No data available

Melting point/freezing point:

-84 °C

Boiling point or initial boiling point and

114 °C

boiling range:

Flammability: not applicable

not applicable

Lower explosion limits: 1,2 vol. %

Upper explosion limits: 8 vol. % Flash point: 14 °C

Auto-ignition temperature: 460 °C

Decomposition temperature: not determined pH-Value (at 20 °C): neutral

Viscosity / kinematic: No data available

Water solubility: 14,1 g/L

(at 20 °C)

Solubility in other solvents

No data available

Dissolution rate:

Partition coefficient n-octanol/water:

Dispersion stability:

Vapour pressure:

No data available
No data available
20 hPa

(at 20 °C)

Vapour pressure:

Density:

Relative density:

Bulk density:

Relative vapour density:

Relative vapour density:

No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

Vapours can form explosive mixtures with air.

Sustaining combustion: Sustaining combustion

Self-ignition temperature

Solid: not applicable
Gas: not applicable

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

Solvent separation test:

No data available
Solvent content:

100%
Solid content:

not determined
not data available
No data available
Softening point:

No data available
Pour point:

No data available
No data available

No data available:

Viscosity / dynamic: 0,59 mPa·s

(at 20 °C)

Flow time: No data available

Further Information



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No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapours can form explosive mixtures with air.

10.2. Chemical stability

Protect against: Light, Air

10.3. Possibility of hazardous reactions

Oxidising agent Reducing agent

Base

10.4. Conditions to avoid

Heat Light

Air

10.5. Incompatible materials

plastic

Rubber articles

Copper

10.6. Hazardous decomposition products

Peroxides

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Toxicocinetics, metabolism and distribution

No data available

Acute toxicity

Harmful if inhaled.

Irritation to respiratory tract

Pulmonary oedema

Pneumonia

Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.

Resorption (dermal)

Resorption (by inhalation)

Resorption (dermal)

CAS No	Chemical name							
	Exposure route	Exposure route Dose Species Source Method						
108-10-1	4-methylpentan-2-one							
	inhalation vapour	ATE 11 mg/l						

Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Repeated exposure may cause skin dryness or cracking.

Sensitising effects

Based on available data, the classification criteria are not met.



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Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing cancer. (4-methylpentan-2-one)

Germ cell mutagenicity: Based on available data, the classification criteria are not met. Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

May cause drowsiness or dizziness. (4-methylpentan-2-one)

STOT-repeated exposure

Repeated exposure may cause skin dryness or cracking.

Aspiration hazard

Based on available data, the classification criteria are not met.

Observe risk of aspiration if vomiting occurs.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

No data available

Further information

Irritant, Cough

Dyspnoea, Dizziness

Narcotic effects, Inebriation

Vomiting, Gastrointestinal complaints

Repeated exposure may cause skin dryness or cracking.

Liver and kidney damage

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method
108-10-1	4-methylpentan-2-one						
	Acute fish toxicity	LC50 mg/l	> 179	96 h	Danio rerio	Study report (2010)	OECD Guideline 203
	Acute crustacea toxicity	EC50 mg/l	> 200	48 h	Daphnia magna	Study report (2009)	OECD Guideline 202
	Crustacea toxicity	NOEC	78 mg/l	21 d	Daphnia magna	Grey literature (1988)	other: "Vorläufigen Testverfahrensvor sch

12.2. Persistence and degradability

83 %; 28 d; aerob

OECD 301F

Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential



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No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
108-10-1	4-methylpentan-2-one	1,9

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of UK REACH.

This substance does not meet the PBT/vPvB criteria of REACH. Annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

No information available.

12.7. Other adverse effects

Do not empty into drains.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Do not allow to enter into surface water or drains.

Do not mix with other wastes.

Send to a physico-chemical treatment facility under observation of official regulations.

Contaminated packaging

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 1245

14.2. UN proper shipping name: METHYL ISOBUTYL KETONE

14.3. Transport hazard class(es): 14.4. Packing group: Ш Hazard label: 3 Classification code: F1 Limited quantity: 1 I Excepted quantity: F2 Transport category: 2 Hazard No: 33 Tunnel restriction code: D/E

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1245

14.2. UN proper shipping name: METHYL ISOBUTYL KETONE

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Classification code:F1Limited quantity:1 L



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Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 1245

14.2. UN proper shipping name: METHYL ISOBUTYL KETONE

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Special Provisions:-Limited quantity:1 LExcepted quantity:E2EmS:F-E, S-D

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 1245

14.2. UN proper shipping name: METHYL ISOBUTYL KETONE

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Limited quantity Passenger:1 LPassenger LQ:Y341Excepted quantity:E2

IATA-packing instructions - Passenger: 353
IATA-max. quantity - Passenger: 5 L
IATA-packing instructions - Cargo: 364
IATA-max. quantity - Cargo: 60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Combustible liquid.

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

Information according to 2012/18/EU

(SEVESO III):

P5c FLAMMABLE LIQUIDS

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile

work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or

nursing mothers.

Water hazard class (D): 1 - slightly hazardous to water

SECTION 16: Other information



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Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route

(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service LC50: Lethal concentration, 50% LD50: Lethal dose, 50% Flam. Liq: Flammable liquids Acute Tox: Acute toxicity

Eye Irrit: Eye irritation
Carc: Carcinogenicity

STOT SE: Specific target organ toxicity - single exposure

Relevant H and EUH statements (number and full text)

H225 Highly flammable liquid and vapour.H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer.

EUH066 Repeated exposure may cause skin dryness or cracking.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.