

according to Regulation (EC) No 1907/2006

Isobutyl methyl ketone for analysis, Reag. Ph. Eur.

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

1.1. Product identifier

Isobutyl methyl ketone for analysis, Reag. Ph. Eur.

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 chemicals

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 Telefax: 0203/5194-290

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

accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

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

Regulation (EC) No 1272/2008

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.

H335 May cause respiratory irritation.

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.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Special labelling of certain mixtures

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

No data 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	Index No	REACH No			
	Classification (Regulation (EC) No 1272/2008)					
108-10-1	4-methylpentan-2-one	4-methylpentan-2-one				
	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

	F							
CAS No	EC No	Chemical name						
	Specific Conc.	onc. Limits, M-factors and ATE						
108-10-1	203-550-1	4-methylpentan-2-one	100 %					
	inhalation: ATE	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.

Call a physician immediately.



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After contact with skin

Wash immediately with: Water

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

In case of skin irritation, consult a physician.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing.

Consult an ophthalmologist.

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

Gastrointestinal complaints, Headache

Has degreasing effect on the skin., Pulmonary oedema

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

Foam

Carbon dioxide (CO2)

Extinguishing powder

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids

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

Hazardous combustion products

In case of fire may be liberated:

Carbon dioxide (CO2) Carbon monoxide

Beware of reignition.

5.3. Advice for firefighters

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

In case of fire and/or explosion do not breathe fumes.

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,



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and pagers which have not been certified as intrinsically safe).

Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

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.

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

Use personal protection equipment.

Do not breathe gas/fumes/vapour/spray.

Provide adequate ventilation.

Read label before use.

Use extractor hood (laboratory).

Advice on protection against fire and explosion

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

Take precautionary measures against static discharges.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.

Further information on handling

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

Wash hands before breaks and after work.

Draw up and observe skin protection programme.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed and dry.



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

Further information on storage conditions

Store in a well-ventilated place. Keep container tightly closed.

storage temperature +5°C - +30°C

Protect against: Light

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
108-10-1	Methyl isobutyl ketone (MIBK)	20	83		TWA (8 h)	
		50	208		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
	Methyl isobutyl ketone (MIBK; 4-methylpentan-2-one)	MIBK	1 mg/L	Urine	End of 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 DNE	EL, 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						
Environmental compartment Value							
108-10-1	4-methylpentan-2-one	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							
Marine sediment 0							
Micro-organisms in sewage treatment plants (STP) 27,5 mg/l							
Soil							

8.2. Exposure controls

Appropriate engineering controls

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

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Face protection umbrella

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact: No data available

By short-term hand contact

Trade name/designation: KCL 898 Butoject®

Recommended 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

Wear anti-static footwear and clothing

Wear fire resistant or flame retardant clothing.

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

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

Respiratory protection

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

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Filtering device with filter or ventilator filtering device of type: A

Environmental exposure controls

Do not allow to enter into surface water or drains.

Danger of explosion

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:

Colour:

Odour:

Odour threshold:

Liquid

colourless

characteristic

No data available

Melting point/freezing point:

-84 °C

Boiling point or initial boiling point and

117 - 118 °C

boiling range:

Flammability: No data available Lower explosion limits: 1 vol. % 8 vol. % Upper explosion limits: Flash point: 14 °C Auto-ignition temperature: 448 °C Decomposition temperature: No data available pH-Value (at 20 °C): neutral No data available Viscosity / kinematic: 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 hPa

(at 20 °C)

Vapour pressure:No data availableDensity:0,80 g/cm³Relative density:No data availableBulk density:No data availableRelative vapour density:No data availableParticle characteristics:No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

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

Sustaining combustion:

Sustaining combustion

Self-ignition temperature

Solid: No data available
Gas: No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

Solvent separation test:

No data available

Solvent content:

No data available

No data available

No data available

No data available



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Sublimation point:

Softening point:

Pour point:

No data available

/iscosity / dynamic: 0,59 mPa (at 20 °C)

Flow time: No data available

Further Information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapours may form explosive mixtures with air.

10.2. Chemical stability

Protect against:

Heat

Air

Light

10.3. Possibility of hazardous reactions

Reducing agent

Oxidising agent, strong;

Base

10.4. Conditions to avoid

Heat

Air

Light

10.5. Incompatible materials

Rubber articles

Plastic articles

Copper

10.6. Hazardous decomposition products

Peroxides

SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

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

Toxicocinetics, metabolism and distribution

No data available

Acute toxicity

Harmful if inhaled.

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



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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.

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

May cause respiratory irritation.

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.

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

Gastrointestinal complaints, Headache

Has degreasing effect on the skin., Pulmonary oedema

Liver and kidney damage

SECTION 12: Ecological information

12.1. Toxicity

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

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



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83 %; 28 d; aerob OECD 301F

Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

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 data available

12.5. Results of PBT and vPvB assessment

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.

12.7. Other adverse effects

Do not allow to enter into surface water or 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.

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

Do not mix with other wastes.

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: E2 Transport category: 2 Hazard No: 33 Tunnel restriction code: D/F

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:3



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Classification code: F1
Limited quantity: 1 L
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

No dangerous good in sense of this transport regulation.

14.7. Maritime transport in bulk according to IMO instruments

No dangerous good in sense of this transport regulation.

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

P5c FLAMMABLE LIQUIDS

(SEVESO III):

Additional 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).

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

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15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 12.

Abbreviations and acronyms

Flam. Liq: Flammable liquid 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.

H335 May cause respiratory irritation.
 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.