

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) and Regulation (EU) No. 2015/830



## MIBK, MOS

Material number MIBK MOS

Revision date: 30/5/2018  
Version: 8

Language: en-GB,IE

Date of print: 12/6/2018  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade name: MIBK, MOS  
REACH registration No.: 01-2119473980-30-xxxx

CAS-Number: 108-10-1  
EC-number: 203-550-1  
EU index number: 606-004-00-4

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

General use: Intermediate for electronic industry  
For industrial purposes only

### 1.3 Details of the supplier of the safety data sheet

Company name: Allresist  
Gesellschaft für chemische Produkte zur Mikrostrukturierung mbH  
Street/POB-No.: Am Biotop 14  
Postal Code, city: 15344 Strausberg  
Germany  
WWW: www.allresist.de  
E-mail: info@allresist.de  
Telephone: +49 (0)33 41-35 93-0  
Telefax: +49 (0)33 41-35 93-29  
Dept. responsible for information:  
Frau Feldt, Email: doerte.feldt@allresist.de

### 1.4 Emergency telephone number

Telephone: +49 (0)33 41-35 93-0  
Only available during office hours.

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to EC regulation 1272/2008 (CLP)

Flam. Liq. 2; H225 Highly flammable liquid and vapour.  
Acute Tox. 4; H332 Harmful if inhaled.  
Eye Irrit. 2; H319 Causes serious eye irritation.  
STOT SE 3; H335 May cause respiratory irritation.  
(EUH066) Repeated exposure may cause skin dryness or cracking.

### 2.2 Label elements

#### Labelling (CLP)



Signal word:

**Danger**

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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.
	EUH066	Repeated exposure may cause skin dryness or cracking.
Precautionary statements:	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P261	Avoid breathing vapours/spray.
	P280	Wear protective gloves/protective clothing/eye protection.
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P312	Call a POISON CENTER/doctor if you feel unwell.
	P370+P378	In case of fire: extinguishing powder, water spray jet, alcohol resistant foam or carbon dioxide.
	P403+P233	Store in a well-ventilated place. Keep container tightly closed.

### 2.3 Other hazards

Potentially explosive mixtures may form if adequate ventilation is not provided.  
Inhaling can lead to irritations of the respiratory tract and mucous membrane.  
Higher doses may lead to a narcotic effect.  
Special danger of slipping by leaking/spilling product.

Results of PBT and vPvB assessment:

No data available

## SECTION 3: Composition / information on ingredients

### 3.1 Substances

Chemical characterisation:  $C_6H_{12}O = (CH_3)_2CHCH_2COCH_3$ ,  
4-Methylpentan-2-one

CAS-Number: 108-10-1  
EC-number: 203-550-1  
EU index number: 606-004-00-4  
RTECS-Number: SA9275000  
Customs tariff number: 2914 13 00

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General information:	If medical advice is needed, have product container or label at hand. First aider: Pay attention to self-protection!
In case of inhalation:	Provide fresh air. If breathing becomes irregular or ceases, apply rescue breathing or artificial respiration immediately, where required supply oxygen. Immediately get medical attention. If victim is at risk of losing consciousness, position and transport on their side.
Following skin contact:	Remove residues with soap and water. Take off immediately all contaminated clothing and wash it before reuse. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently consult an ophthalmologist.

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After swallowing: Rinse mouth immediately and drink plenty of water.  
Never give anything by mouth to an unconscious person. Do not induce vomiting.  
Immediately get medical attention.

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

Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Higher doses may lead to a narcotic effect.

### 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:

Water spray jet, extinguishing powder, carbon dioxide.  
In case of large fires: alcohol resistant foam or water spray jet.

Extinguishing media which must not be used for safety reasons:

Full water jet

### 5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour.  
With air, vapours form potentially explosive mixtures, which are heavier than air.  
Vapours may proceed on the ground over great distances and cause fire and backflashes.  
May form dangerous gases and vapours in case of fire.  
Furthermore, there may develop: carbon monoxide and carbon dioxide.

### 5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information:

Hazchem-Code: •3YE

Heating will lead to pressure increase: Danger of bursting and explosion. Use fine water spray to cool endangered containers.  
Keep containers cool with water spray.  
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.  
Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities. Suppress gases/vapours/mists with water spray jet.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Eliminate all ignition sources if safe to do so. Avoid contact with the substance. Do not breathe vapour/aerosol. If possible, eliminate leakage. Provide adequate ventilation.  
Wear appropriate protective equipment. Keep unprotected people away. Cordon off downwind area at risk and warn inhabitants.

### 6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains. Danger of explosion! In case of release, notify competent authorities.

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### 6.3 Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).  
Beware of reignition. Thoroughly clean surrounding area.  
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

Additional information: Use explosion-proof equipment and non-sparking tools/utensils.

Special danger of slipping by leaking/spilling product.

### 6.4 Reference to other sections

Refer additionally to section 8 and 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Do not breathe vapour/aerosol. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off immediately all contaminated clothing and wash it before reuse. Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.

When handling large quantities, supply emergency spray. Avoid the formation of aerosol.

Precautions against fire and explosion:

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

Take precautionary measures against static discharge. Use explosion-proof electrical/ventilating/lighting equipment. Do not weld.

In partially filled containers explosive mixtures may form.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep only in original container. Keep container dry, tightly closed and store at cool and aired place. Protect from heat and direct sunlight. Store containers in upright position. Explosion protection required.

Qualified materials: iron, stainless steel.

Unsuitable materials: PVC, rubber, polyethylene.

Storage temperature: 10 - 22 °C.

Hints on joint storage:

Do not store together with combustible or self-igniting materials or any highly flammable solids.

Do not store together with strong oxidizing agents.

Keep away from food, drink and animal feedingstuffs.

### 7.3 Specific end use(s)

Intermediate for electronic industry

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Occupational exposure limit values:

Type	Limit value
Europe: IOELV: STEL	208 mg/m <sup>3</sup> ; 50 ppm
Europe: IOELV: TWA	83 mg/m <sup>3</sup> ; 20 ppm
Great Britain: WEL-STEL	416 mg/m <sup>3</sup> ; 100 ppm
Great Britain: WEL-TWA	208 mg/m <sup>3</sup> ; 50 ppm
Ireland: 15 minutes	208 mg/m <sup>3</sup> ; 50 ppm (may be absorbed through the skin)
Ireland: 8 hours	83 mg/m <sup>3</sup> ; 20 ppm (may be absorbed through the skin)

Biological limit values:

Type	Limit value	Parameter	Material	Time of sampling
Great Britain: BMGV	20 µmol/L	4-methylpentan - 2-one	urine	end of exposure or end of shift

### 8.2 Exposure controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment. Explosion protection required.

### Personal protection equipment

#### Occupational exposure controls

- Respiratory protection: Respiratory protection must be worn whenever the WEL levels have been exceeded. Use filter type A (= against vapours of organic substances) according to EN 14387.
- Hand protection: Protective gloves according to EN 374.  
Glove material: polyethylene/ethylene-vinyl-alcohol-copolymer/polyethylene (PE/EVAL/PE).  
Breakthrough time: > 480 min.  
Unsuitable materials: butyl caoutchouc (butyl rubber), natural rubber (Caoutchouc), chloroprene rubber, nitrile rubber, leather.  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
- Eye protection: Tightly sealed goggles according to EN 166. according to EN 166.
- Body protection: Flame retardant, antistatic and chemical resistant protective clothing.
- General protection and hygiene measures:  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe vapour/aerosol. Do not get in eyes, on skin, or on clothing.  
Take off immediately all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace.  
When using do not eat or drink. Wash hands thoroughly after handling.  
When handling large quantities, supply emergency spray.

### Environmental exposure controls

Do not allow to enter into ground-water, surface water or drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance: Physical state at 20 °C and 101.3 kPa: liquid  
Colour: colourless, clear

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Odour:	like ketone
Odour threshold:	No data available
pH value:	at 20 °C: neutral
Melting point/freezing point:	approx. -83.5 °C
Initial boiling point and boiling range:	114 - 117 °C
Flash point/flash point range:	14 °C
Evaporation rate:	No data available
Flammability:	Highly flammable liquid and vapour.
Explosion limits:	LEL (Lower Explosion Limit): 1.20 Vol-% UEL (Upper Explosive Limit): 9.00 Vol-%
Vapour pressure:	at 20 °C: 18.8 hPa at 50 °C: 90.9 hPa
Vapour density:	No data available
Density:	0.799 - 0.802 g/mL
Water solubility:	at 20 °C: 19 g/L
Partition coefficient: n-octanol/water:	1.31 log P(o/w) (experimental) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity, dynamic:	at 20 °C: 0.59 mPa*s
Explosive properties:	Product is not explosive. Potentially explosive vapour/air mixtures may form.
Oxidizing characteristics:	Product has no oxidizing effect.

## 9.2 Other information

Ignition temperature:	460 °C
Molecular weight	100.18 g/mol
Additional information:	Relative vapour density at 20 °C (air=1): 3,5

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Highly flammable liquid and vapour.  
Vapours can form explosive mixtures with air.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Heating will lead to pressure increase: Danger of bursting and explosion.

### 10.4 Conditions to avoid

Keep away from heat sources, sparks and open flames.  
Protect against direct sunlight.  
Avoid admission of air/oxygen (formation of peroxide).

### 10.5 Incompatible materials

PVC, strong oxidizing agents, rubber, polyethylene.

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### 10.6 Hazardous decomposition products

No hazardous decomposition products when regulations for storage and handling are observed.

Thermal decomposition: No data available

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity: LD50 Rat, oral: 2100 mg/kg (OECD 401)  
LC50 Rat, inhalative: 8.3 - 16.6 mg/L/4h (OECD 403)  
LD50 Rabbit, dermal: 16000 mg/kg (IUCRID)

Toxicological effects: Acute toxicity (oral): Based on available data, the classification criteria are not met.  
Acute toxicity (dermal): Based on available data, the classification criteria are not met.  
Acute toxicity (inhalative): Acute Tox. 4; H332 = Harmful if inhaled.  
Skin corrosion/irritation: Based on available data, the classification criteria are not met.  
Serious eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation.  
Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.  
Skin sensitisation: Based on available data, the classification criteria are not met. Not known to cause sensitization. (OECD 406).  
Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.  
Bacterial mutagenicity: Ames test negative.  
In micronucleus test negative (in-vivo).  
Carcinogenicity: Based on available data, the classification criteria are not met.  
Reproductive toxicity: Based on available data, the classification criteria are not met.  
Effects on or via lactation: Lack of data.  
Specific target organ toxicity (single exposure): STOT SE 3; H335 = May cause respiratory irritation.  
Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.  
Aspiration hazard: Based on available data, the classification criteria are not met.

### Symptoms

After contact with skin: Repeated exposure may cause skin dryness or cracking.  
After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

## SECTION 12: Ecological information

### 12.1 Toxicity

Aquatic toxicity: Algae toxicity:  
EC50 Lemna gibba: > 146 mg/L/7d (OECD 221)  
Bacterial toxicity:  
Toxicological concentration limits: 275 mg/L/16h (Pseudomonas putida)  
Daphnia toxicity:  
EC50 Daphnia magna (Big water flea): > 200 mg/L/48h (OECD 202)  
Fish toxicity:  
LC50 Brachydanio rerio (zebra-fish): > 179 mg/L/96h (OECD 203)

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### 12.2 Persistence and degradability

Further details: Substance floats on the water surface. Potentially explosive mixtures with air may form above water surface.

Biodegradation: 83%/ 28 d (OECD 301 F).  
Product is readily biodegradable.

Oxygen demand: CSB: 79 % ThSB  
ThSB: 2,72 g/g

### 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:

1.31 log P(o/w) (experimental)

Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

No data available

### 12.6 Other adverse effects

General information: Do not allow to enter into ground-water, surface water or drains.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste key number: 07 01 04\* = organic solvents, halogen-free  
\* = Evidence for disposal must be provided.

Recommendation: Dispose of waste according to applicable legislation.  
Do not dispose of with household waste.  
Do not empty into drains.

#### Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself.  
Handle empty containers with care. Incineration may cause explosion.  
Non-contaminated packages may be recycled.

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID, IMDG, IATA-DGR:  
UN 1245

### 14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR:  
UN 1245, METHYL ISOBUTYL KETONE



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### 14.3 Transport hazard class(es)

ADR/RID: Class 3, Code: F1  
IMDG: Class 3, Subrisk -  
IATA-DGR: Class 3



### 14.4 Packing group

ADR/RID, IMDG, IATA-DGR:  
II

### 14.5 Environmental hazards

Marine pollutant: no

### 14.6 Special precautions for user

#### Land transport (ADR/RID)

Warning board: ADR/RID: Kemmler-number 33, UN number UN 1245  
Hazard label: 3  
Limited quantities: 1 L  
EQ: E2  
Contaminated packaging - Instructions: P001 IBC02 R001  
Special provisions for packing together: MP19  
Portable tanks - Instructions: T4  
Portable tanks - Special provisions: TP1  
Tank coding: LGBF  
Tunnel restriction code: D/E

#### Sea transport (IMDG)

EmS: F-E, S-D  
Special provisions: -  
Limited quantities: 1 L  
Excepted quantities: E2  
Contaminated packaging - Instructions: P001  
Contaminated packaging - Provisions: -  
IBC - Instructions: IBC02  
IBC - Provisions: -  
Tank instructions - IMO: -  
Tank instructions - UN: T4  
Tank instructions - Provisions: TP1  
Stowage and handling: Category B.  
Properties and observations: Colourless liquid with a pleasant odour. Flashpoint: 14°C c.c. Explosive limits: 1,4% to 7,5%. Immiscible with water.  
Segregation group: none

#### Air transport (IATA)

Hazard label: Flamm. liquid  
Excepted Quantity Code: E2  
Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L  
Passenger and Cargo Aircraft: Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L  
Cargo Aircraft only: Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L  
Emergency Response Guide-Code (ERG): 3L

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

No data available

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## SECTION 15: Regulatory information

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

#### National regulations - Great Britain

Hazchem-Code: •3YE  
No data available

#### National regulations - EC member states

Volatile organic compounds (VOC):  
approx. 100 % by weight = 802 g/L

#### Labelling of packaging with <= 125mL content



Signal word: **Danger**  
Hazard statements: EUH066 Repeated exposure may cause skin dryness or cracking.  
Precautionary statements: not applicable  
Further regulations, limitations and legal requirements:  
Use restriction according to REACH annex XVII, no.: 3

### 15.2 Chemical Safety Assessment

No data available

## SECTION 16: Other information

### Further information

Reason of change: Changes in section 2: Labelling  
Changes in section 15: Regulatory information  
General revision  
Date of first version: 19/8/2010

### Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

