Chemical Safety Data Sheet MSDS / SDS

3-Methyl-2-butanone

Revision Date:2025-02-01 Revision Number:1

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

Product identifier

| Product name | : 3-Methyl-2-butanone | | |
|---|--|--|--|
| CBnumber | : CB2270896 | | |
| CAS | : 563-80-4 | | |
| EINECS Number | : 209-264-3 | | |
| Synonyms | : 3-methylbutan-2-one,3-Methyl-2-butanone | | |
| Relevant identified uses of the substance or mixture and uses advised against | | | |
| Relevant identified uses | : For R&D use only. Not for medicinal, household or other use. | | |
| Uses advised against | : none | | |
| Company Identification | | | |
| Company | : Chemicalbook | | |
| Address | : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing | | |
| Telephone | : 400-158-6606 | | |

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

Precautionary statements

P501 Dispose of contents/container to.....

P405 Store locked up.

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

P370+P378 In case of fire: Use ... for extinction.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P271 Use only outdoors or in a well-ventilated area.

P264 Wash skin thouroughly after handling.

P264 Wash hands thoroughly after handling.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.

P240 Ground/bond container and receiving equipment.

P233 Keep container tightly closed.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Hazard statements

H336 May cause drowsiness or dizziness

H335 May cause respiratory irritation

H320 Causes eye irritation

H315 Causes skin irritation

H225 Highly Flammable liquid and vapour

SECTION 3: Composition/information on ingredients

Substance

| Product name | : 3-Methyl-2-butanone |
|--------------|---|
| Synonyms | : 3-methylbutan-2-one,3-Methyl-2-butanone |
| CAS | : 563-80-4 |
| EC number | : 209-264-3 |
| MF | : C5H10O |
| MW | : 86.13 |
| | |

SECTION 4: First aid measures

Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

lf inhaled

After inhalation: fresh air.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2) Foam Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Carbon oxides Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

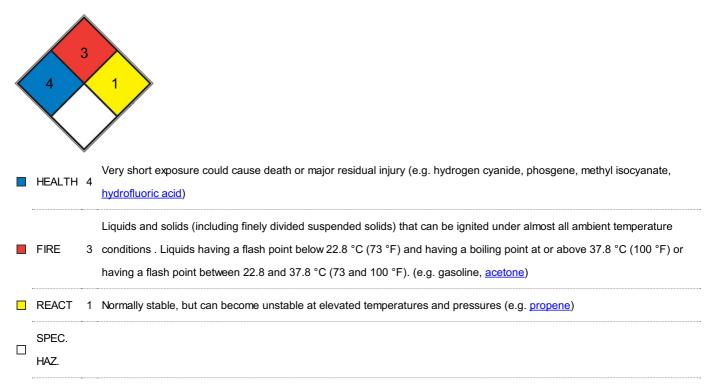
Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

NFPA 704



SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb?). Dispose of properly. Clean up affected area.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance. For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate

government standards such as NIOSH (US) or EN 166(EU). Safety glasses Chemical Book

Skin protection

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). Splash contact Material: butyl-rubber Minimum layer thickness: 0,7 mm Break through time: 120 min Material tested:Butoject? (KCL 898) Body Protection Flame retardant antistatic protective clothing. Respiratory protection Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. Control of environmental exposure Do not let product enter drains. Risk of explosion. Exposure limits

TLV-TWA 700 mg/m³ (200 ppm); STEL 875 mg/m³ (250 ppm) (ACGIH).

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

| Appearance | colorless liquid |
|---|--|
| Odour | fruity |
| Odour Threshold | 0.5ppm |
| pH | No data available |
| Melting point/freezing point | Melting point/range: -92 °C - lit. |
| Initial boiling point and boiling range | 94 - 95 °C - lit. |
| Flash point | -1 °C |
| Evaporation rate | 5,6 |
| Flammability (solid, gas) | No data available |
| Upper/lower flammability or explosive | Upper explosion limit: 9 %(V) Lower explosion limit: 1,5 %(V) |
| limits | |
| Vapour pressure | 53,33 hPa at 19,9 °C |
| Vapour density | No data available |
| Relative density | No data available |
| Water solubility | 8,21 g/l at 20 °C - OECD Test Guideline 105 |
| Partition coefficient: n-octanol/water | log Pow: 2,29 at 20 °C - Bioaccumulation is not expected. |
| Autoignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity | Viscosity, kinematic: No data available Viscosity, dynamic: 0,5 mPa.s at 25 °C - OECD Test Guideline 114 |
| | |

No data available

Other safety information

Surface tension 24,3 mN/m at 22 °C

- Surface tension

SECTION 10: Stability and reactivity

Reactivity

Vapors may form explosive mixture with air.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents strong reducing agents alkaline substances sodium

Conditions to avoid

May form peroxides of unknown stability. Warming.

Incompatible materials

No data available

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - > 2.000 mg/kg (OECD Test Guideline 401) Symptoms: Nausea, Vomiting, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract., Aspiration may cause pulmonary edema and pneumonitis. LC50 Inhalation - Rat - male and female - 4 h - 34,25 mg/l (OECD Test Guideline 403) LCLo Inhalation - Rat - 4 h - 20,4 mg/l Remarks: (RTECS) LD50 Dermal - Rabbit - 6.350 mg/kg Remarks: (RTECS) Dermal: absorption Skin corrosion/irritation Skin - Rabbit Result: slight irritation Remarks: (External MSDS)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: slight irritation Remarks: (External MSDS)

Respiratory or skin sensitization

Sensitisation test: - Guinea pig

Result: Does not cause skin sensitization. Remarks:

(ECHA)

Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration. Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473 Result: negative

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

Specific target organ toxicity - single exposure Specific target organ toxicity - repeated exposure Aspiration hazard

Toxicity

LD50 orally in male mice: 29.86 mmol/kg (Tanii)

SECTION 12: Ecological information

Toxicity

Toxicity to fish

flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - > 68 mg/l - 96 h

(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

semi-static test EC50 - Daphnia magna (Water flea) - > 81 mg/l - 48 h

(OECD Test Guideline 202)

Toxicity to algae

static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 44,23 mg/l - 72 h

(OECD Test Guideline 201)

Persistence and degradability

Biodegradability aerobic - Exposure time 28 d Result: 84 % - Readily biodegradable. (OECD Test Guideline 301D)

Bioaccumulative potential

Mobility in soil

Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Other adverse effects

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

Waste treatment methods

Product

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

Incompatibilities

Vapors may form explosive mixture with air. Ketones are incompatible with oxidizers (chlorates, nitrates, peroxides, permanganates,

perchlorates, chlorine, bromine, fluorine, etc.); contact may cause fires or explosions. Keep away from alkaline materials, strong bases, strong acids, oxoacids, epoxides, nitrated amines, azo, diazo, azido compounds, carbamates, organic cyanates

Waste Disposal

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. All federal, state, and local environmental regulations must be observed.

SECTION 14: Transport information

UN number

ADR/RID: 2397 IMDG: 2397 IATA: 2397

UN proper shipping name

ADR/RID: 3-METHYLBUTAN-2-ONE IMDG: 3-METHYLBUTAN-2-ONE

IATA: 3-Methylbutan-2-one

| 14.3 | Transport hazard class(es) | | |
|------|---------------------------------------|----------|--|
| | ADR/RID: 3 IMDG: 3 | IATA: 3 | |
| 14.4 | Packaging group | | |
| | Adr/Rid: II IMDG: II | IATA: II | |
| 14.5 | Environmental hazards | | |
| | ADR/RID: no IMDG Marine pollutant: no | IATA: no | |
| 14.6 | Special precautions for user | | |
| | No data available | | |
| | | | |

SECTION 15: Regulatory information

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

Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Listed. website: https://www.mem.gov.cn/

Measures for Environmental Management of New Chemical Substances

Vietnam National Chemical Inventory:Listed. website: https://chemicaldata.gov.vn/

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: https://www.epa.gov/

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: https://emb.gov.ph/

New Zealand Inventory of Chemicals (NZloC):Listed. website: https://www.epa.govt.nz/

Korea Existing Chemicals List (KECL):Listed. website: http://ncis.nier.go.kr

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: https://echa.europa.eu/ EC Inventory:Listed.

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: https://www.mee.gov.cn/

SECTION 16: Other information

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road CAS: Chemical Abstracts Service EC50: Effective Concentration 50% IATA: International Air Transportation Association IMDG: International Maritime Dangerous Goods LC50: Lethal Concentration 50% LD50: Lethal Dose 50% RID: Regulation concerning the International Carriage of Dangerous Goods by Rail STEL: Short term exposure limit

TWA: Time Weighted Average

References

- [1] CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- [2] ChemlDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- [3] ECHA European Chemicals Agency, website: https://echa.europa.eu/
- [4] eChemPortal The Global Portal to Information on Chemical Substances by OECD, website:

http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

- [5] ERG Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- [6] Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- [7] HSDB Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- [8] IARC International Agency for Research on Cancer, website: http://www.iarc.fr/
- [9] IPCS The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- [10] Sigma-Aldrich, website: https://www.sigmaaldrich.com/

Other Information

Do NOT take working clothes home.

Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.