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Safety data sheet

BASF Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)
Date / Revised: 20.06.2024 Version: 2.2
Product: **K-Methylate sol. 32 %**

(ID no. 30036706/SDS_GEN_00/EN)
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1. Identification

Product identifier

K-Methylate sol. 32 %

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

Relevant identified uses: Chemical
Recommended use: process chemical, Intermediate, catalyst

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Division Monomers

Telephone: +49 621 60 42737
E-mail address: pss.monomers@basf.com

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Flam. Liq. 3
Acute Tox. 3 (Inhalation - vapour)
Acute Tox. 3 (oral)
Acute Tox. 3 (dermal)
Skin Corr./Irrit. 1B
Eye Dam./Irrit. 1
STOT SE (Central nervous system, Optic nerve) 1

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:

Signal Word:
Danger

Hazard Statement:

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H301	Toxic if swallowed.
H370	Causes damage to organs (central nervous system, optic nerve).

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P271	Use only outdoors or in a well-ventilated area.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/gas/mist/vapours.
P243	Take action to prevent static discharges.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P264	Wash contaminated body parts thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P234	Keep only in original packaging.
P242	Use non-sparking tools.
P240	Ground and bond container and receiving equipment.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P301	IF SWALLOWED:
P330	Rinse mouth.
P331	Do NOT induce vomiting.
P390	Absorb spillage to prevent material damage.
P370 + P378	In case of fire: Use foam, dry powder or dry sand for extinction.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.

Precautionary Statements (Storage):

P403 + P235	Store in a well-ventilated place. Keep cool.
P233	Keep container tightly closed.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

According to UN GHS criteria

Hazard determining component(s) for labelling: Potassium methanolate, Methanol

Other hazards

According to UN GHS criteria

No specific dangers known, if the regulations/notes for storage and handling are considered.

3. Composition/Information on Ingredients

Substances

Not applicable

Mixtures

Chemical nature

Preparation based on: Potassium methanolate, Methanol

Hazardous ingredients (GHS)
According to UN GHS criteria

Methanol

Content (W/W): >= 50 % - < 75 % CAS Number: 67-56-1 EC-Number: 200-659-6 INDEX-Number: 603-001-00-X	Flam. Liq. 2 Acute Tox. 3 (Inhalation - vapour) Acute Tox. 3 (oral) Acute Tox. 3 (dermal) STOT SE (Central nervous system, Optic nerve) 1 H225, H301 + H311 + H331, H370 Specific concentration limit: STOT SE 2: 3 - < 10 % STOT SE 1: >= 10 %

Potassium methanolate

Content (W/W): >= 25 % - < 50 % CAS Number: 865-33-8 EC-Number: 212-736-1 INDEX-Number: 603-040-00-2	Flam. Sol. 1 Self-heat. 1 Acute Tox. 4 (oral) Skin Corr. 1A Eye Dam. 1 H228, H251, H314, H302 EUH014, EUH071

Potassium hydroxide

Content (W/W): > 0 % - < 1 % CAS Number: 1310-58-3 EC-Number: 215-181-3 INDEX-Number: 019-002-00-8	Met. Corr. 1 Acute Tox. 4 (oral) Skin Corr. 1A Eye Dam. 1 H290, H302, H314 Specific concentration limit: Skin Corr./Irrit. 2: 0,5 - < 2 % Eye Dam./Irrit. 2: 0,5 - < 2 % Skin Corr./Irrit. 1A: >= 5 % Skin Corr./Irrit. 1B: 2 - < 5 %

For the classifications not written out in full in this section the full text can be found in section 16.

4. First-Aid Measures

Description of first aid measures

First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position).

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200 - 300 ml water, do not induce vomiting, seek medical attention. Administer 50 ml of pure ethanol in a drinkable concentration. Seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., skin corrosion, irritates the eyes and respiratory tract, blindness, (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Treatment: Symptomatic treatment (decontamination, vital functions).

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
dry powder, Dry sand, alcohol-resistant foam

Unsuitable extinguishing media for safety reasons:
water, carbon dioxide

Special hazards arising from the substance or mixture

Risk of exothermic reaction.

Advice for fire-fighters

Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Vapours are heavier than air and may accumulate in low areas and travel a considerable distance up to the source of ignition. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Sealed containers should be protected against heat as this results in pressure build-up.

6. Accidental Release Measures

Release of substance/product can cause fire or explosion.

Personal precautions, protective equipment and emergency procedures

Sources of ignition should be kept well clear. Use personal protective clothing. Avoid inhalation. Avoid contact with skin and eyes.

Environmental precautions

Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up

For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Protect against moisture. Protect against heat.

Protection against fire and explosion:
Avoid all sources of ignition: heat, sparks, open flame. Take precautionary measures against static discharges. Use antistatic tools. Render equipment and apparatus inert (nitrogen, inert gases) and ground before putting into operation. Fire extinguishers should be kept handy.

Conditions for safe storage, including any incompatibilities

Segregate from acids and acid forming substances. Keep away from water.

Suitable materials for containers: Carbon steel (Iron), Stainless steel 1.4401, Stainless steel 1.4301 (V2), High density polyethylene (HDPE), Low density polyethylene (LDPE), enamelled, glass, Stainless steel 1.4541, Stainless steel 1.4571, Stainless steel 1.4402 (V4A)
Unsuitable materials for containers: Paper/Fibreboard
Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Keep under dry nitrogen. Protect against moisture. Protect against heat. Keep away from sources of ignition - No smoking.

Protect from temperatures below: -20 °C
The product crystallizes below the limit temperature.

Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

8. Exposure Controls/Personal Protection

Control parameters

Components with occupational exposure limits

67-56-1: Methanol
1310-58-3: Potassium hydroxide

Exposure controls

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Suitable respiratory protection for lower concentrations or short-term effect: Gas filter for gases/vapours of organic compounds (boiling point <65 °C, f.e. EN 14387 Type AX)

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
butyl rubber (butyl) - 0.7 mm coating thickness
fluoroelastomer (FKM) - 0.7 mm coating thickness

Suitable materials for short-term contact (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN ISO 374-1)
nitrile rubber (NBR) - 0.4 mm coating thickness
chloroprene rubber (CR) - 0.5 mm coating thickness
polyvinylchloride (PVC) - 0.7 mm coating thickness

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Safety glasses with side-shields (frame goggles) (f.e. EN 166) and face shield

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Avoid contact with the skin, eyes and clothing. Do not breathe vapour/spray. Handle in accordance with good industrial hygiene and safety practice. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	liquid
Form:	liquid
Colour:	colourless to yellowish
Odour:	perceptible, of methanol
Odour threshold:	Not determined since toxic by inhalation.
solidification temperature:	-24,1 °C
Boiling point:	approx. 92 °C (1.013 mbar)

Lower explosion limit:
For liquids not relevant for classification and labelling.
Information on: Methanol
Lower explosion limit:
For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.

Upper explosion limit:
For liquids not relevant for classification and labelling.
Information on: Methanol
Upper explosion limit:
For liquids not relevant for classification and labelling.

Flash point:	31 °C	(DIN 51755)
Auto-ignition temperature:	455 °C	(DIN 51794)
Information on: Methanol		
Auto-ignition temperature:	*455 °C*	

Thermal decomposition: It is not a self-decompositionable substance.

pH value:	approx. 11 The products resulting from hydrolysis react strongly alkaline.	(ISO 1148)

Viscosity, kinematic:
No data available.

Viscosity, dynamic:	18 mPa.s (20 °C)	
Solubility in water:	hydrolyzes (20 °C)	

Information on: Methanol
Partitioning coefficient n-octanol/water (log Kow): -0,77 (measured)
(20 °C)
Literature data.

Vapour pressure:	approx. 36 mbar (20 °C)	(measured)
	approx. 180 mbar (50 °C)	(measured)
	approx. 205 mbar (55 °C)	(measured)

Relative density:
No data available.

Density:	0,98 g/cm3 (20 °C)	(ISO 2811-3)
	0,975 g/cm3 (50 °C)	(ISO 2811-3)
	0,9687 g/cm3 (55 °C)	

Particle characteristics
Particle size distribution: The substance / product is marketed or used in a non solid or granular form. -

9.2. Other information

Information with regard to physical hazard classes

Explosives
Explosion hazard: not explosive
Oxidizing properties
Fire promoting properties: not fire-propagating
Self-heating substances and mixtures
Self heating ability: It is not a substance capable of spontaneous heating.
Corrosion to metals

Corrosive effect on: - Aluminium

Other safety characteristics

Hygroscopy: hygroscopic
Evaporation rate:
Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

Corrosion to metals: Corrosive effect on: Aluminium

Possibility of hazardous reactions

Exothermic reaction. Reacts with water and acids.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid contact with air. Avoid moisture.

Incompatible materials

Substances to avoid:
Carbon dioxide, water, acids, substances with an acid reaction, light metals

Hazardous decomposition products

Hazardous decomposition products:
Potassium hydroxide, Methanol

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
The toxicity of the product is based on its corrosivity.

Experimental/calculated data:
(oral):The product has not been tested. The statement has been derived from the properties of the individual components.

ATE (oral): 145 mg/kg

Information on: Methanol
Assessment of acute toxicity:
Of high toxicity after single ingestion. Of high toxicity after short-term inhalation. Of high toxicity after short-term skin contact.

Information on: Methanol
Experimental/calculated data:
LC50 rat (by inhalation): 128 mg/l 4 h (BASF-Test)
The vapour was tested.

Information on: Methanol
Experimental/calculated data:
LD50 rabbit (dermal): 17100 mg/kg (other)

Irritation

Assessment of irritating effects:
Causes severe burns. Risk of serious damage to eyes.

The break through time determined in the in-vitro membrane barrier test indicates that the test substance is expected to cause skin necrosis in vivo within 14 days after a 1-hour exposure.

Experimental/calculated data:
Skin corrosion/irritation rabbit: Corrosive. (similar to OECD guideline 404)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Serious eye damage/irritation rabbit: irreversible damage (BASF-Test)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Respiratory/Skin sensitization

Assessment of sensitization:
As the substance is corrosive, conducting sensitization studies is not feasible.

Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing. (similar to OECD guideline 406)
The product has not been tested.

Closed-patch Test human: Non-sensitizing. (Human patch test)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Germ cell mutagenicity

Information on: Potassium methanolate
Assessment of mutagenicity:
The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in a test with mammals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Information on: Methanol
Assessment of mutagenicity:
In the majority of studies performed with microorganisms and in mammalian cell culture, a mutagenic effect was not found. A mutagenic effect was also not observed in in vivo tests.

Carcinogenicity

Information on: Methanol
Assessment of carcinogenicity:
In long-term studies in rats and mice in which the substance was given by inhalation, a carcinogenic effect was not observed. In long-term animal studies in which the substance was given in the drinking water in high concentrations, a carcinogenic effect was observed. These effects are not relevant to humans at occupational levels of exposure.

Reproductive toxicity

Information on: Methanol
Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity

Information on: Methanol
Assessment of teratogenicity:
The results of animal studies gave indication of a developmental toxic/teratogenic effects with high doses.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Information on: Methanol
Assessment of repeated dose toxicity:
The substance may cause blindness after repeated ingestion. The substance may cause blindness after repeated inhalation.

Aspiration hazard

Toxic if swallowed.

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:
The product has not been tested. The statement has been derived from the properties of the hydrolysis products.

Information on: Potassium hydroxide
Assessment of aquatic toxicity:
At the present state of knowledge, no negative ecological effects are expected.
The product gives rise to pH shifts. Study scientifically not justified.

Information on: Methanol
Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Information on: Methanol
Toxicity to fish:
LC50 (96 h) 15.400 mg/l, Lepomis macrochirus (other, Flow through.)

Information on: Methanol
Aquatic invertebrates:
EC50 (48 h) 18.260 mg/l, Daphnia magna (OECD Guideline 202, part 1, semistatic)

Information on: Methanol
Aquatic plants:
EC50 (96 h) approx. 22.000 mg/l (growth rate), Selenastrum capricornutum (OECD Guideline 201, static)

Information on: Methanol
Microorganisms/Effect on activated sludge:
EC50 (3 h) > 1.000 mg/l, (OECD Guideline 209, aquatic)

EC50 (24 h) 880 mg/l, Nitrosomonas sp. (Inhibition of nitrification, aquatic)

Persistence and degradability

Assessment biodegradation and elimination (H2O):
The product is unstable in water. The elimination data also refer to products of hydrolysis. The organic component of the product is biodegradable.

Information on: Potassium hydroxide
Assessment biodegradation and elimination (H2O):
Not applicable for inorganic substances.

Information on: Methanol
Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

Information on: Methanol
Elimination information:
95 % BOD of the ThOD (20 d) (OECD 301D; 92/69/EWG, C.4-E) (aerobic, activated sludge, domestic, non-adapted) Readily biodegradable (according to OECD criteria).

Bioaccumulative potential

Information on: Methanol
Assessment bioaccumulation potential:
Significant accumulation in organisms is not to be expected.

Information on: Potassium hydroxide
Assessment bioaccumulation potential:
Accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Adsorption to solid soil phase is not expected.

Other adverse effects

The product does not contain substances that are listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information

Other ecotoxicological advice:
Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Do not release untreated into natural waters.

13. Disposal Considerations

Waste treatment methods

Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport

ADR

UN number or ID number:	UN2920
UN proper shipping name:	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (POTASSIUM METHANOLATE, METHANOL) SOLUTION
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	Tunnel code: D/E

RID

UN number or ID number:	UN2920
UN proper shipping name:	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (POTASSIUM METHANOLATE, METHANOL) SOLUTION
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Inland waterway transport

ADN

UN number or ID number:	UN2920
UN proper shipping name:	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (POTASSIUM METHANOLATE, METHANOL) SOLUTION
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Transport in inland waterway vessel
Not evaluated

Sea transport

IMDG

UN number or ID number:	UN 2920
UN proper shipping name:	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (POTASSIUM METHANOLATE, METHANOL) SOLUTION
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no Marine pollutant: NO
Special precautions for user:	EmS: F-E; S-C

Air transport

IATA/ICAO

UN number or ID number:	UN 2920
UN proper shipping name:	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (POTASSIUM METHANOLATE, METHANOL) SOLUTION
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

15. Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Flam. Liq.	Flammable liquids
Acute Tox.	Acute toxicity
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
STOT SE	Specific target organ toxicity — single exposure
Flam. Sol.	Flammable solids

Self-heat.	Self-heating substances and mixtures
Skin Corr.	Skin corrosion
Eye Dam.	Serious eye damage
Met. Corr.	Corrosive to metals
H225	Highly flammable liquid and vapour.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled.
H370	Causes damage to organs (Central nervous system, Optic nerve).
H228	Flammable solid.
H251	Self-heating: may catch fire.
H314	Causes severe skin burns and eye damage.
H302	Harmful if swallowed.
H290	May be corrosive to metals.
EUH014	Reacts violently with water.
EUH071	Corrosive to the respiratory tract.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.