according to Regulation (EC) No. 1907/2006 (REACH)

according to Regulation (EU) 2020/878

Article No.: 662 MEK-Verdünner

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

1.1. product identifiers

Article No. (manufacturer/supplier) 662

Trade name/designation MEK-Verdünner

UFI: 8X9V-T58D-Q99T-2YRV

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

Relevant identified uses:

Coating material to protecting surfaces

1.3. Details of the supplier of the safety data sheet

supplier (manufacturer/importer/downstream user/distributor)

Vismara Unternehmungen CH-5000 Aarau www.farbladen.ch

Department responsible for information:

laboratory Manager

E-mail (competent person) info@knuchel.ch

1.4. Emergency telephone number

Emergency telephone number 145 (+41 (0)44 251 51 51)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Flam. Liq. 2 / H225 Flammable liquids Highly flammable liquid and vapour.

Eye Irrit. 2 / H319 Serious eye damage/eye irritation Causes serious eye irritation.

STOT SE 3 / H336 STOT-single exposure May cause drowsiness or dizziness.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms





Danger

Hazard statements

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read carefully and follow all instructions.

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

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P261 Avoid breathing vapours.

P264 Wash hands thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves and eye/face protection.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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 or doctor/physician if you feel unwell.

P337 + P313 If eye irritation persists: Get medical advice/attention.

according to Regulation (EC) No. 1907/2006 (REACH)

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P370 + P378 In case of fire: Use extinguishing powder or sand to extinguish. P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

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

P405 Keep locked up.

P501 Dispose of contents/container to industrial incineration plant.

Hazard components for labelling

butanone

Supplemental hazard information

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

Mixtures

32

No information available.

SECTION 3: Composition/information on ingredients

ozorion o. composition/morniation on ingreatent

Description Solvents/Thinner

Classification according to Regulation (EC) No 1272/2008 [CLP]

EC No. CAS No. Index No.	REACH No. Designation classification // Remark	weight-%
201-159-0 78-93-3 606-002-00-3	01-2119457290-43 butanone Flam. Liq. 2 H225 / Eye Irrit. 2 H319 / STOT SE 3 H336 / EUH066	80 - 100
203-767-1 110-43-0 606-024-00-3	01-2119902391-49 heptan-2-one Flam. Liq. 3 H226 / Acute Tox. 4 H332 / Acute Tox. 4 H302	1 - 5

Additional information

Full text of classification: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.

In case of inhalation

Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

Following skin contact

Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Do not use solvents or thinners.

After eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice immediately.

Following ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Seek medical advice immediately. Keep victim calm. Do NOT induce vomiting.

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

In all cases of doubt, or when symptoms persist, seek medical advice.

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

First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

alcohol resistant foam, carbon dioxide, Powder, spray mist, (water)

Unsuitable extinguishing media

according to Regulation (EC) No. 1907/2006 (REACH)

according to Regulation (EU) 2020/878

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strong water jet

5.2. Special hazards arising from the substance or mixture

Dense black smoke occurs during fire. Inhaling hazardous decomposing products can cause serious health damage.

5.3. Advice for firefighters

Provide a conveniently located respiratory protective device. Cool closed containers that are near the source of the fire. Do not allow water used to extinguish fire to enter drains, ground or waterways.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep away from sources of ignition. Ventilate affected area. Do not breathe vapours.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

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). Clean using cleansing agents. Do not use solvents.

6.4. Reference to other sections

Observe protective provisions (see section 7 and 8).

SECTION 7: Handling and storage

Precautions for safe handling

Advices on safe handling

Avoid formation of flammable and explosive vapour concentrations in the air and exceeding the exposure limit values. Only use the material in places where open light, fire and other flammable sources can be kept away. Electrical equipment must be protected meeting the accepted standard. Product may become electrostatically charged. Provide earthing of containers, equipment, pumps and ventilation facilities. Anti-static clothing including shoes are recommended. Floors must be electrically conductive. Keep away from heat sources, sparks and open flames. Use only spark proof tools. Avoid contact with skin, eyes and clothes. Do not inhale dusts, particulates and spray mist when using this preparation. Avoid respiration of swarf. When using do not eat, drink or smoke. Personal protection equipment: refer to section 8. Do not empty containers with pressure no pressure vessel! Always keep in containers that correspond to the material of the original container. Follow the legal protection and safety regulations.

Further information

Vapours are heavier than air. Vapours form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Storage in accordance with the Ordinance on Industrial Safety and Health (BetrSiVO). Keep container tightly closed. Do not empty containers with pressure - no pressure vessel! Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks. Soils have to conform to the "Guidelines for avoidance of ignition hazards due to electrostatic charges (TRGS 727)".

Hints on joint storage

Keep away from strongly acidic and alkaline materials as well as oxidizers.

Further information on storage conditions

Take care of instructions on label. Store in a well-ventilated and dry room at temperatures between 15 °C and 30 °C. Protect from heat and direct sunlight. Keep container tightly closed. Remove all sources of ignition. Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks.

7.3. Specific end use(s)

Observe technical data sheet. Observe instructions for use.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit values:

butanone

Index No. 606-002-00-3 / EC No. 201-159-0 / CAS No. 78-93-3

WEL, TWA: 600 mg/m3; 200 ppm

*

according to Regulation (EC) No. 1907/2006 (REACH) according to Regulation (EU) 2020/878

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WEL, STEL: 899 mg/m3; 300 ppm

heptan-2-one

Index No. 606-024-00-3 / EC No. 203-767-1 / CAS No. 110-43-0

WEL, TWA: 237 mg/m3; 50 ppm WEL, STEL: 475 mg/m3; 100 ppm

Remark: (may be absorbed through the skin)

Additional information

TWA: Long-term occupational exposure limit value STEL: short-term occupational exposure limit value

Ceiling: peak limitation

DNEL:

butanone

Index No. 606-002-00-3 / EC No. 201-159-0 / CAS No. 78-93-3

DNEL long-term dermal (systemic), Workers: 1161 mg/kg bw/day

DNEL long-term inhalative (systemic), Workers: 600 mg/m³

DNEL long-term dermal (systemic), Consumer: 412 mg/kg bw/day

DNEL long-term inhalative (systemic), Consumer: 106 mg/m³

Long-term - oral, systemic effects, Consumer: 31 mg/kg bw/day

PNEC:

butanone

Index No. 606-002-00-3 / EC No. 201-159-0 / CAS No. 78-93-3

PNEC aquatic, freshwater: 55,8 mg/L PNEC aquatic, marine water: 55,8 mg/L PNEC aquatic, intermittent release: 55,8 mg/L

PNEC sediment, freshwater: 284,7 mg/kg Sediment dry weight PNEC sediment, marine water: 284,7 mg/kg Sediment dry weight

PNEC, soil: 22,5 mg/kg

PNEC sewage treatment plant (STP): 709 mg/L PNEC Secondary Poisoning: 1000 mg/kg food oral

8.2. Exposure controls

Provide good ventilation. This can be achieved with local or room suction. If this should not be sufficient to keep aerosol and solvent vapour concentration below the exposure limit values, a suitable respiratory protection must be used.

Personal protection equipment

Respiratory protection

If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must be used. Use only respiratory protection equipment with CE-symbol including four digit test number.

Hand protection

For prolonged or repeated handling the following glove material must be used: NBR (Nitrile rubber)

Thickness of the glove material > 0.4 mm; Breakthrough time: > 480 min.

Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles EN ISO 374

Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Eye/face protection

Wear closely fitting protective glasses in case of splashes.

Body protection

Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

Protective measures

After contact clean skin thoroughly with water and soap or use appropriate cleanser.

Environmental exposure controls

Do not allow to enter into surface water or drains. See section 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties Physical state: Liquid

according to Regulation (EC) No. 1907/2006 (REACH) according to Regulation (EU) 2020/878

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Colour: refer to label
Odour: characteristic
Odour threshold: not applicable
Melting point/freezing point: not applicable

Initial boiling point and boiling range: 79 °C

Source: butanone

Flammability: Highly flammable liquid and vapour.

Lower and upper explosion limit:

Lower explosion limit: 1.77 Vol-%
Upper explosion limit: 11.5 Vol-%
Source: butanone

Flash point: -4 °C

Method: DIN 53213

Auto-ignition temperature: 305 °C

Source: heptan-2-one

Decomposition temperature: not applicable pH at 20 °C: not applicable Cinematic viscosity (40°C): < 20 mm²/s

Viscosity at 20 °C: 10 - 12 sec DIN 4 mm

Solubility(ies):

Water solubility at 20 °C: partially soluble
Partition coefficient: n-octanol/water: see section 12
Vapour pressure at 20 °C: 105 mbar

Source: butanone

Density and/or relative density:

Density at 20 °C: 0.81 g/cm³

Relative vapour density: not applicable particle characteristics: not applicable

9.2. Other information

Solid content: 0 weight-%

solvent content:

Organic solvents: 100 weight-% Water: 0 weight-%

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.3. Possibility of hazardous reactions

Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. Conditions to avoid

Hazardous decomposition byproducts may form with exposure to high temperatures.

10.5. Incompatible materials

not applicable

10.6. Hazardous decomposition products

Hazardous decomposition byproducts may form with exposure to high temperatures, e.g.: carbon dioxide, carbon monoxide, smoke, nitrogen oxides.

SECTION 11: Toxicological information

according to Regulation (EC) No. 1907/2006 (REACH)

according to Regulation (EU) 2020/878

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

Acute toxicity

butanone

oral, LD50, Rat: 2193 mg/kg ; Evaluation Slightly toxic

Method: OECD 423

dermal, LD50, Rabbit: > 5000 mg/kg

Method: OECD 402

Slightly toxic

inhalative (vapours), LD50, Rat: 34,5 mg/L

Skin corrosion/irritation; Serious eye damage/eye irritation

Causes serious eye irritation.

butanone

Skin, Rabbit (4 h) Method: OECD 404

May dry out the skin and cause discomfort and skin inflammation.

eyes, Rabbit Method: OECD 405

Respiratory or skin sensitisation

butanone

Skin, Maximization test, Guinea pig: ; Evaluation not sensitising.

Method: OECD 406

Respiratory system, Maximization test, Guinea pig: ; Evaluation not sensitising.

Method: OECD 406

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

butanone

Germ cell mutagenicity; Evaluation Not known as germ cell mutagen. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 471 473 474 476.

Carcinogenicity; Evaluation Not known to cause cancer.

Reproductive toxicity; Evaluation Is not known to be toxic to reproduction.

Based on test results for structurally similar substances. Test(s) equivalent or similar to OECD Guideline 414 416.

Lactation; Evaluation No harmful effect on infants known through breast milk.

STOT-single exposure; STOT-repeated exposure

May cause drowsiness or dizziness.

butanone

Specific target organ toxicity (repeated exposure)

Liver damage is possible.; Danger of serious damage to health by prolonged exposure.

Aspiration hazard

butanone

Aspiration hazard; Evaluation Inhalation of high vapour concentrations may cause symptoms such as headache, dizziness, fatigue, nausea and vomiting.

Chronic exposure may cause dermatitis.; Irritating to eyes and respiratory system.

Practical experience/human evidence

Inhaling of solvent components above the MWC-value can lead to health damage, e.g. irritation of the mucous membrane and respiratory organs, as well as damage to the liver, kidneys and the central nerve system. Indications for this are: headache, dizziness, fatigue, amyosthenia, drowsiness, in serious cases: unconsciousness. Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage.

Overall assessment on CMR properties

The ingredients in this mixture do not meet the criteria for classification as CMR category 1A or 1B according to CLP.

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

according to Regulation (EC) No. 1907/2006 (REACH)

according to Regulation (EU) 2020/878

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SECTION 12: Ecological information

Classification according to Regulation (EC) No 1272/2008 [CLP]

Do not allow to enter into surface water or drains.

12.1. Toxicity

butanone

Fish toxicity, LC50, Pimephales promelas (fathead minnow): 2993 mg/L (96 h)

Daphnia toxicity, EC50, Daphnia magna: 308 mg/L (48 h)

Algae toxicity, ErC50, Pseudokirchneriella subcapitata: 2029 mg/L (96 h)

12.2. Persistence and degradability

butanone

Hydrolysis: Evaluation No significant transformation due to hydrolysis is expected. Photolysis: Evaluation Due to photolysis, no significant transformation is to be expected.

Air oxidation: Evaluation Moderate degradation is to be expected in air.

Biodegradation: 98 percent (28 d); Evaluation Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

Toxicological data are not available.

12.4. Mobility in soil

butanone

.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate disposal / Product

Recommendation

Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Dispose of waste according to applicable legislation.

List of proposed waste codes/waste designations in accordance with EWC

140603* other solvents and solvent mixtures

*Hazardous waste according to Directive 2008/98/EC (waste framework directive).

Appropriate disposal / Package

Recommendation

Non-contaminated packages may be recycled. Vessels not properly emptied are special waste.

SECTION 14: Transport information

14.1. UN number or ID number

UN 1993

14.2. UN proper shipping name

Land transport (ADR/RID): Flammable liquid, n.o.s.

(2-butanone)

Sea transport (IMDG): FLAMMABLE LIQUID, N.O.S.

(2-butanone)

Air transport (ICAO-TI / IATA-DGR): Flammable liquid, n.o.s.

(2-butanone)

14.3. Transport hazard class(es)

3

14.4. Packing group

II

according to Regulation (EC) No. 1907/2006 (REACH)

according to Regulation (EU) 2020/878

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14.5. Environmental hazards

Land transport (ADR/RID) not applicable
Marine pollutant not applicable

14.6. Special precautions for user

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.

Advices on safe handling: see parts 6 - 8

Further information

Land transport (ADR/RID)

Tunnel restriction code D/E

Sea transport (IMDG)

EmS-No. F-E, S-E

14.7. Maritime transport in bulk according to IMO instruments

No transport as bulk according IBC - Code.

SECTION 15: Regulatory information

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

EU legislation

Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive]

VOC-value (in g/L): 805

National regulations

Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive 92/85/EEC or stricter national regulations, if applicable.

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC) or stricter national regulations, if applicable.

15.2. Chemical Safety Assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

EC No. CAS No.	Designation	REACH No.
201-159-0 78-93-3	butanone	01-2119457290-43
203-767-1 110-43-0	heptan-2-one	01-2119902391-49

Harmful if swallowed.

SECTION 16: Other information

Full text of classification in section 3

Flam. Liq. 2 / H225

Eye Irrit. 2 / H319

Serious eye damage/eye irritation

STOT SE 3 / H336

Flam. Liq. 3 / H226

Flammable liquids

STOT-single exposure

Flammable liquids

Flammable liquids

Flammable liquid and vapour.

Flammable liquid and vapour.

Harmful if inhaled.

Classification procedure

Acute Tox. 4 / H302

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]
Flam. Liq. 2 Flammable liquids On basis of test data.

Eye Irrit. 2 Serious eye damage/eye irritation Calculation method.

STOT SE 3 STOT-single exposure Calculation method.

Acute toxicity (oral)

Abbreviations and acronyms

ADR European Agreement concerning the International Carriage of Dangerous Goods by Road

OEL Occupational Exposure Limit Value

BLV Biological Limit Value
CAS Chemical Abstracts Service

CLP Classification, Labelling and Packaging

according to Regulation (EC) No. 1907/2006 (REACH) according to Regulation (EU) 2020/878

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CMR Carcinogenic, Mutagenic and Reprotoxic

DIN German Institute for Standardization / German industrial standard

DNEL Derived No-Effect Level

FAKV European Waste Catalogue Directive

Effective Concentration EC EC **European Community** European Standard ΕN

IATA-DGR International Air Transport Association – Dangerous Goods Regulations

IBC Code International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk ICAO-TI International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous

Goods by Air

IMDG Code International Maritime Code for Dangerous Goods ISO International Organization for Standardization

LC Lethal Concentration

Lethal Dose LD

MARPOL Maritime Pollution: The International Convention for the Prevention of Pollution from Ships

Organisation for Economic Cooperation and Development **OECD**

PBT persistent, bioaccumulative, toxic **PNEC** Predicted No Effect Concentration

REACH Registration, Evaluation, Authorisation and Restriction of Chemicals

RID Regulations concerning the International Carriage of Dangerous Goods by Rail

UN **United Nations**

VOC Volatile Organic Compounds

vPvB very persistent and very bioaccumulative

Further information

Classification according to Regulation (EC) No 1272/2008 [CLP]

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations. Without written approval, the product must not be used for purposes different from those mentioned in section 1. It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations. The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.

^{*} Data changed compared with the previous version