

## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

**Product identifier:**

**Product name:** METHYL ETHYL KETONE  
**Synonyms; trade names:** Butanone  
**REACH registration number:** 01-2119457290-43-XXXX  
**CAS number:** 78-93-3  
**EU index number:** 606-002-00-3  
**EC number:** 201-159-0

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

**Identified uses:**  
 Solvent for Industrial use.  
 Raw material for photochemicals Agrochemical uses.  
 Raw material for printing inks and printing ink additives.

**Company name:**  
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## 2. HAZARDS IDENTIFICATION

**Classification of the substance or mixture**

**Classification (EC 1272/2008)**

**Physical hazards:** Flam. Liq. 2 - H225  
**Health hazards:** Eye Irrit. 2 - H319 STOT SE 3 - H336  
**Environmental hazards:** Not Classified

**Label elements:**

**EC number:** 201-159-0

**Hazard pictograms:**



**Signal word:** Danger

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|  |   |
|--|---|
| <b>Hazard statements:</b>              | H225 Highly flammable liquid and vapour.<br>H319 Causes serious eye irritation.<br>H336 May cause drowsiness or dizziness.  |
| <b>Precautionary statements:</b>       | P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>P243 Take action to prevent static discharges.<br>P261 Avoid breathing vapours.<br>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P403+P233 Store in a well-ventilated place. Keep container tightly closed. |
| <b>Supplemental label information:</b> | EUH066 Repeated exposure may cause skin dryness or cracking.  |

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### Substances:

|                                   |                       |
|-----------------------------------|-----------------------|
| <b>Product name:</b>              | METHYL ETHYL KETONE   |
| <b>REACH registration number:</b> | 01-2119457290-43-xxxx |
| <b>EU index number:</b>           | 606-002-00-3          |
| <b>CAS number:</b>                | 78-93-3               |
| <b>EC number:</b>                 | 201-159-0             |

### 4. FIRST AID MEASURES (SYMPTOMS)

#### Description of first aid measures:

|                             |  |
|-----------------------------|--|
| <b>General information:</b> | Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. Never give anything by mouth to an unconscious person. |
| <b>Inhalation:</b>          | Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. Get medical attention if any discomfort continues.     |
| <b>Ingestion:</b>           | Rinse mouth thoroughly with water. Do not induce vomiting. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. Get medical attention immediately.   |
| <b>Skin contact:</b>        | Remove contaminated clothing and rinse skin thoroughly with water. Get medical attention if any discomfort continues.  |
| <b>Eye contact:</b>         | Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.   |

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

|                             |  |
|-----------------------------|--|
| <b>General information:</b> | No additional symptoms or effects are anticipated. |
|-----------------------------|--|

#### Indication of any immediate medical attention and special treatment needed:

|                              |                        |
|------------------------------|------------------------|
| <b>Notes for the doctor:</b> | Treat symptomatically. |
|------------------------------|------------------------|

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### 5. FIRE-FIGHTING MEASURES

**Extinguishing media:**

**Suitable extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog. Water spray, fog or mist.

**Unsuitable extinguishing media:** Do not use water jet as an extinguisher, as this will spread the fire.

**Special hazards arising from the substance or mixture:**

**Specific hazards:** The product is flammable. Heating may generate flammable vapours. Vapours may form explosive mixtures with air. Vapours may be ignited by a spark, a hot surface or an ember. The product is highly flammable. Forms explosive mixtures with air. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back.

**Hazardous combustion products:** Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon.

**Advice for firefighters:**

**Protective actions during firefighting:** Keep up-wind to avoid fumes. Fight fire from safe distance or protected location. Move containers from fire area if it can be done without risk. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Cool containers exposed to flames with water until well after the fire is out. Control run-off water by containing and keeping it out of sewers and watercourses. Do not use water jet as an extinguisher, as this will spread the fire. Ventilate closed spaces before entering them. Risk of re-ignition after fire has been extinguished.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:**

**Personal precautions:** Wear protective clothing as described in Section 8 of this safety data sheet. Ensure suitable respiratory protection is worn during removal of spillages in confined areas. Take precautionary measures against static discharges. No smoking, sparks, flames or other sources of ignition near spillage. Avoid contact with eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

**Environmental precautions:** Do not discharge into drains or watercourses or onto the ground. Avoid or minimise the creation of any environmental contamination. Never use water by itself on spillage; this will spread the spill and cause further contamination. Contain spillage with sand, earth or other suitable non-combustible material.

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

**Methods for cleaning up:** If leakage cannot be stopped, evacuate area. Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Wash thoroughly after dealing with a spillage. Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Absorb spillage with non-combustible, absorbent material. Cover large spillages with alcohol-resistant foam. Contain and absorb spillage with sand, earth or other non-combustible material. Avoid the spillage or runoff entering drains, sewers or watercourses. Inform authorities if large amounts are involved. Spillage may be stored as chemical waste in approved area. Wear protective clothing as described in Section 8 of this safety data sheet. Avoid the spillage or runoff entering drains, sewers or watercourses.

### Reference to other sections:

## 7. HANDLING AND STORAGE

### Precautions for safe handling:

**Usage precautions:** Avoid spilling. Avoid contact with skin and eyes. Keep away from heat, sparks and open flame. Eliminate all sources of ignition. Static electricity and formation of sparks must be prevented. Storage tanks and other containers must be earthed. Protect electric equipment against sparking in case of risk of explosion. Wear suitable protective equipment for prolonged exposure and/or high concentrations of vapours, spray or mist. Contaminated rags and cloths must be put in fireproof containers for disposal. Remove contamination with soap and water or recognised skin cleansing agent. Do not use organic solvents. Do not eat, drink or smoke when using the product. Container must be kept tightly closed when not in use. Do not use in confined spaces without adequate ventilation and/or respirator. Protect against direct sunlight.

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

**Storage precautions:** Keep container tightly closed. Keep away from food, drink and animal feeding stuffs. Keep away from oxidising materials, heat and flames. Earth container and transfer equipment to eliminate sparks from static electricity. Keep only in the original container.

**Storage class:** Flammable liquid storage.

### Specific end use(s):

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters:

#### Occupational exposure limits:

**Long-term exposure limit (8-hour TWA):** WEL 200 ppm 600 mg/m<sup>3</sup>

**Short-term exposure limit (15-minute):** WEL 300 ppm 899 mg/m<sup>3</sup>

Sk

WEL = Workplace Exposure Limit

Sk = Can be absorbed through the skin.

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**DNEL:** Industry - Dermal; : 1161 mg/kg/day  
Industry - Inhalation; : 600 mg/m<sup>3</sup>  
Consumer - Dermal; : 412 mg/kg/day  
Consumer - Inhalation; : 106 mg/m<sup>3</sup>

**PNEC:** Fresh water; 55.8 mg/l  
Marine water; 55.8 mg/l  
Sediment; 284.74 mg/kg  
Soil; 22.5 mg/kg

**Exposure controls:**

**Protective equipment:**



**Appropriate engineering controls:** Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients. Use explosion-proof general and local exhaust ventilation.

**Eye/face protection:** Wear chemical splash goggles. Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

**Hand protection:** Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. It should be noted that liquid may penetrate the gloves. Frequent changes are recommended.

**Other skin and body protection:** Use barrier creams to prevent skin contact. Provide eyewash station and safety shower. Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Hygiene measures:** Provide eyewash station and safety shower. Use engineering controls to reduce air contamination to permissible exposure level. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes wet or contaminated. Eating, smoking and water fountains prohibited in immediate work area. Do not smoke in work area.

**Respiratory protection:** If ventilation is inadequate, suitable respiratory protection must be worn. Check that the respirator fits tightly and the filter is changed regularly. It is recommended to use respiratory equipment with combination filter, type A2/P2.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties:**

**Appearance:** Liquid.  
**Colour:** Colourless.  
**Odour:** Characteristic.  
**Melting point:** -86°C  
**Initial boiling point and range:** 79.6°C @ 1013 hPa  
**Flash point:** -6°C Closed cup.  
**Evaporation rate:** 6 (BuAc=1)

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### Upper/lower flammability or explosive limits:

Lower flammable/explosive limit: 1.8

Upper flammable/explosive limit: 11.5

Vapour pressure: 9.99 kPa @ °C

Vapour density: 2.42

Relative density: 0.8054 @ 20°C

Solubility(ies): 27 @ °C Soluble in water. Miscible with the following materials: Organic solvents.

Auto-ignition temperature: 404°C

Molecular weight: 72.12

## 10. STABILITY AND REACTIVITY

### Reactivity:

### Chemical stability:

Stability: Stable at normal ambient temperatures and when used as recommended.

Possibility of hazardous reactions: Will not polymerise.

Conditions to avoid: Avoid heat, flames and other sources of ignition.

### Incompatible materials:

Materials to avoid: Strong oxidising agents.

Hazardous decomposition products: None at ambient temperatures. Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

## 11. TOXICOLOGICAL INFORMATION

### Information on toxicological effects:

#### Acute toxicity – oral:

Acute toxicity oral (LD<sub>50</sub> mg/kg): 2,000.0

Species: Rat

#### Acute toxicity – dermal:

Acute toxicity dermal (LD<sub>50</sub> mg/kg): 2,000.0

Species: Rabbit

### Skin corrosion/irritation:

Extreme pH: Moderately irritating.

### Respiratory sensitisation:

Respiratory sensitisation: Guinea pig: There is no evidence that the material can lead to respiratory hypersensitivity.

### Germ cell mutagenicity:

Genotoxicity - in vitro: Negative.

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| <b>General information:</b>              | Prolonged and repeated contact with solvents over a long period may lead to permanent health problems. The product contains small amounts of organic solvents. Extensive use of the product in areas with inadequate ventilation may result in the accumulation of hazardous vapour concentrations. |
| <b>Inhalation:</b>                       | Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. The product contains organic solvents. Overexposure may depress the central nervous system, causing dizziness and intoxication.  |
| <b>Ingestion:</b>                        | Harmful: may cause lung damage if swallowed. Pneumonia may be the result if vomited material containing solvents reaches the lungs.   |
| <b>Skin contact:</b>                     | Repeated exposure may cause skin dryness or cracking.   |
| <b>Eye contact:</b>                      | Irritation of eyes and mucous membranes.  |
| <b>Acute and chronic health hazards:</b> | Prolonged contact may cause dryness of the skin. Prolonged and repeated contact with solvents over a long period may lead to permanent health problems.   |
| <b>Route of exposure:</b>                | Ingestion. Inhalation   |
| <b>Target organs:</b>                    | Brain Respiratory system, lungs Mucous membranes  |
| <b>Medical symptoms:</b>                 | Skin irritation. Irritation of eyes and mucous membranes. Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Headache. Fatigue. Nausea, vomiting.   |
| <b>Medical considerations:</b>           | Skin disorders and allergies. Convulsions. Central nervous system depression. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.  |

## 12. ECOLOGICAL INFORMATION

### Toxicity:

#### Acute aquatic toxicity:

**Acute toxicity – fish:** LC<sub>50</sub>, 48 hours: > 100 mg/l, *Leuciscus idus* (Golden orfe)

**Acute toxicity – aquatic invertebrates:** EC<sub>50</sub>, 48 hours: >100 mg/l, *Daphnia magna*

**Persistence and degradability:** The product is biodegradable.

**Bioaccumulative potential:** The product is not bioaccumulating.

**Mobility in soil:**

**Results of PBT and vPvB assessment:** This product does not contain any substances classified as PBT or vPvB.

**Other adverse effects:**

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods:

**General information:** Waste is classified as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

**Disposal methods:** Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

**Waste class:** Hazardous Waste.

[cont...]

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### 14. TRANSPORT INFORMATION

#### UN number

UN No. (ADR/RID): 1193

UN No. (IMDG): 1193

UN No. (ICAO): 1193

UN No. (ADN): 1193

#### UN proper shipping name:

Proper shipping name (ADR/RID): METHYL ETHYL KETONE

Proper shipping name (IMDG): METHYL ETHYL KETONE

Proper shipping name (ICAO): METHYL ETHYL KETONE

Proper shipping name (ADN): METHYL ETHYL KETONE

#### Transport hazard class(es):

ADR/RID class: 3

ADR/RID classification code: F1

ADR/RID label: 3

IMDG class: 3

ICAO class/division: 3

ADN class: 3

#### Transport labels:



#### Packing group:

ADR/RID packing group: II

IMDG packing group: II

ICAO packing group: II

ADN packing group: II

#### Environmental hazards:

Environmentally hazardous substance/marine pollutant: No.

#### Special precautions for user:

EmS: F-E, S-D

ADR transport category: 2

Emergency Action Code: •2YE

Hazard Identification Number (ADR/RID): 33

Tunnel restriction code: (D/E)

Transport in bulk according to Annex II of MARPOL and the IBC Code:

[cont...]



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### 15. REGULATORY INFORMATION

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

**EU legislation:** Regulation (EC) No 1272/2008 CLP.  
Regulation (EC) No 1907/2006 REACH.

**Guidance:** Workplace Exposure Limits EH40.

**Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

#### Inventories:

**EU - EINECS/ELINCS:** Present.

**Canada - DSL/NDSL:** Present.

**US – TSCA:** Present.

**Australia – AICS:** Present.

**Japan – ENCS:** Present.

**Korea – KECI:** Present.

**China – IECSC:** Present.

**Philippines – PICCS:** Present.

**New Zealand – NZIOC:** Present.

**Note:** The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

### 16. OTHER INFORMATION

**Hazard statements in full:** H225 Highly flammable liquid and vapour.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

**Legal disclaimer:** The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.