**HEAD OFFICE**
38 May Holman Drive
Bassendean WA 6054
**T:** (61 8) 6270 4500
**F:** (61 8) 6270 4544
**E:** admin@agentsales.com.au

SALES & SERVICES

# Safety Data Sheet

## 1. IDENTIFICATION OF THE PRODUCT AND THE SUPPLIER

**1.1 Product identifiers**

Product name : METHYL ETHYL KETONE

**1.2 Other means of identification**

Ethyl Methyl Ketone, MEK, 2-butanone

**1.3 Recommended use of the product and restrictions on use**

Solvent

**1.4 Details of supplier of the safety data sheet**

| | |
|---|---|
| Company | : AGent Sales & Services Pty Ltd |
| Street address | : 38 May Holman Drive, Bassendean, Western Australia 6054 |
| Telephone | : (+61 8) 6270 4500 |
| Fax | : (+61 8) 6270 4544 |

**1.5 Emergency telephone number**

Telephone : 1300 883 844

## 2. HAZARDS IDENTIFICATION

**2.1 GHS Classification**

Flammable liquids (Category 2)
Eye irritation (Category 2)
Specific target organ toxicity - single exposure (Category 3), Central nervous system

**2.2 GHS Label elements, including precautionary statements**

**Pictogram** :

**Signal word** : Danger

**Hazard statement(s)**

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |

**Precautionary statement(s)**

**Prevention**

| | |
|---|---|
| P102 | Keep out of reach of children. |
| P103 | Read label before use. |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. – No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilation/lighting equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P264 | Wash thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |

| | |
|---|---|
| P280 | Wear protective gloves/eye protection/face protection. |

**Response**

| | |
|---|---|
| P303 + P361 + P353 | IF ON SKIN (or hair): Remove / take off immediately all contaminated clothing. Rinse skin with water / shower. |
| P304 + P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position 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 CENTRE or doctor / physician if you feel unwell. |
| P337 + P313 | If eye irritation persists: Get medical advice / attention. |
| P370 + P378 | In case of fire: Use alcohol-resistant foam/water spray/dry chemical for extinction. |

**Storage**

| | |
|---|---|
| P403 + P233 | Store in well-ventilated place. Keep container tightly closed. |
| P403 + P235 | Store in well-ventilated place. Keep cool. |
| P405 | Store locked up. |

**Disposal**

| | |
|---|---|
| P501 | Dispose of contents / container to an approved waste disposal plant. |

### 2.3 Other hazards

Repeated exposure may cause skin dryness or cracking.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Component | CAS Number | Classification | Concentration (%) |
|---|---|---|---|
| Methyl Ethyl Ketone | 78-93-3 | Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H335, H336 | ≤100 |

For the full text of the H-Statements mentioned in this section, see Sections 2 and 16

## 4. FIRST AID MEASURES

### 4.1 Description of First Aid measures

**General advice**

Contact the Poisons Information Centre (Phone: Australia 131 126; New Zealand 0800 764 766) or consult a doctor/physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

Remove victim from exposure if safe to do so. If rapid recovery does not occur, transport to nearest medical facility for additional treatment. Remove contaminated clothing.

**In case of skin contact**

If skin contact occurs, remove contaminated clothing and wash skin thoroughly with water and follow by washing with soap if available. If irritation occurs seek medical advice. Launder clothing before reuse.

**In case of eye contact**

In case of eye contact, check for and remove any contact lenses. Immediately rinse thoroughly with plenty of running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek immediate medical assistance.

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

The most important known symptoms and effects are described in Section 2.2 and/or Section 11.

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

No data available

### 4.4 First Aid facilities

Eye wash facilities and safety shower should be available.

## 5. FIRE FIGHTING MEASURES

**5.1 Suitable extinguishing media**

Alcohol stable foam, water spray or fog. Dry chemical powder, carbon dioxide may be used for small fires only. Do not use water in a jet.

**Specific hazards**

**5.2 Special hazards arising from the chemical**

Highly flammable liquid. Carbon monoxide and/or carbon dioxide may be evolved. May form flammable vapour mixture with air. Avoid all ignition sources. Flameproof equipment necessary in area where chemical is being used. Nearby equipment must be earthed. Vapours may travel considerable distances to source of ignition and flashback. Vapours may accumulate in low or confined areas.

**5.3 Special protective equipment and precautions for fire fighters**

Wear full protective clothing and self-contained breathing apparatus.

**5.4 Hazchem code**

2YE

## 6. ACCIDENTAL RELEASE MEASURES

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

Avoid contact with spilled or released material. Shut off leaks, if possible without personal risks. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition in the surrounding area. Take precautionary measure against static discharge. Ensure electrical continuity by bonding and earthing all equipment..
For personal protection see Section 8.

**6.2 Environmental precautions**

Use appropriate containment to avoid environmental contamination. Prevent from spreading and entering waterway using sand, earth or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Ventilate contaminated area thoroughly. If contamination of sewers or waterways has occurred, advise local emergency services. Observe all local and national regulations.

**6.3 Methods and materials for containment and cleaning up**

For small spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.
For larger spills (> 1 drum), transfer by means such as a vacuum truck to a salvage tank for recovery or disposal. Do not flush residues with water. Retain as contaminated waste. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

## 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling**

Flammable product. Avoid breathing vapours. Handle and open containers with care in a well-ventilated area. Ensure that the workplace is ventilated such that the Occupational Exposure limit is not exceeded. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in contaminated areas. Electrostatic charges may be generated during transfer. Electrostatic discharge may cause fire. Ensure electrical continuity by earthing all equipment. Flameproof equipment necessary in area where chemical is being used.

For personal protection see Section 8.

For precautions see Section 2.2.

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

Store in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Do not store near strong oxidants.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**8.1 Control parameters**

**Occupational Exposure Limits**

| Chemical Name | Reference | TWA – Peak Limitation | | STEL | | Carcinogen Category | Notices |
|---|---|---|---|---|---|---|---|
| | | ppm | mg/m³ | ppm | mg/m³ | | |
| Methyl Ethyl Ketone | NOHSC | 150 | 445 | 300 | 890 | - | - |

As published in "*Workplace Exposure Standards for Airborne Contaminants, December 2011"* by SWA.

The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

**Biological Limits**
None allocated for this product.

**8.2 Exposure controls**

**Appropriate engineering controls**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Avoid generating and inhaling mists and vapours. Keep containers closed when not in use.
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Adequate ventilation should be provided so that exposure limits are not exceeded. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

**Personal protective equipment (PPE)**
The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods and environmental factors.

**Eye/face protection**
Face shield and safety glasses. See Australian Standards (AS/NZS 1336 & 1337).

**Skin protection**
Use solvent resistant gloves, nitrile for longer term protection or PVC and neoprene for incidental splashes. Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. See Australian Standards (AS 2161, AS 3765 & AS 2210). Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands. Wash contaminated clothing and other protective equipment before storage or re-use.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination or type ABEK respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. See Australian Standards (AS 1715 & AS 1716).

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance:** | Form : Liquid |
| | Colour : Clear, colourless |
| **Odour:** | No data available |
| **Odour Threshold:** | No data available |
| **pH:** | No data available |
| **Melting Point:** | -87ºC |
| **Boiling Point / Range** | 79 - 80ºC |
| **Decomposition Temperature:** | No data available |

| | |
|---|---|
| **Evaporation Rate:** | No data available |
| **Flash Point:** | -4 (closed cup) |
| **Flammability Limits:** | Upper explosion limit: 10.1%(V)<br>Lower explosion limit: 1.8%(V) |
| **Auto-ignition temperature:** | 515°C |
| **Relative Density:** | 0.805 g/mL @ 25ºC |
| **Vapour Density (air=1 @ 20ºC):** | 2.49 |
| **Vapour Pressure:** | 9.5 kPa @ 20ºC |
| **% Volatiles:** | No data available |
| **Kinematic viscosity:** | No data available |
| **Partition coefficient: n-octanol/water:** | Log Pow: 0.29 |
| **Solubility in water:** | 250 g/L @ 20°C |

## 10. STABILITY AND REACTIVITY

**10.1 Reactivity**
Stable under normal conditions of use.

**10.2 Chemical stability**
Stable under normal conditions of use.

**10.3 Possibility of hazardous reactions**
Stable under normal conditions of use.

**10.4 Conditions to avoid**
Heat, sparks, open flames and other ignition sources. Exposure to moisture. Extreme temperatures and direct sunlight.

**10.5 Incompatible materials**
Strong oxidising agents, reducing agents, acids, alkalis

**10.6 Hazardous decomposition products**
Burning can produce carbon monoxide and/or carbon dioxide.

## 11. TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**

**Acute toxicity**
$LD_{50}$ Oral (rat) : 2,737 mg/kg

$LC_{50}$ Inhalation (mouse) : 32,000 mg/$m^3$, 4h

$LC_{50}$ Inhalation (mammal) : 38,000 mg/$m^3$

$LD_{50}$ Dermal (rabbit) : 6,480 mg/kg

Remarks: Repeated exposure may cause skin dryness or cracking.

**Skin corrosion/irritation**
Skin - rabbit Result: No skin irritation (OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - rabbit Result: Irritating to eyes. (OECD Test Guideline 405)

**Respiratory or skin sensitisation**
No data available.

**Germ cell mutagenicity**
No data available.

**Carcinogenicity**
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**
No data available.

**Specific target organ toxicity (STOT) - single exposure**
May cause drowsiness or dizziness.

**Specific target organ toxicity (STOT) - repeated exposure**
No data available.

Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss.

**Aspiration hazard**
May be fatal if swallowed and enters airways.

**Health Effects**
No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

**Eye contact :** May include burning sensation, redness, swelling and/or blurred vision.

**Skin contact :** May include mild redness and dryness.

**Ingestion :** May include nausea, vomiting and central nervous system depression (as for inhalation).

**Inhalation :** Breathing of high vapour concentrations may cause central nervous system depression resulting in headaches, dizziness, nausea, loss of coordination, impaired judgement; continued inhalation may result in unconsciousness and/or death.

**11.2 Information on possible routes of exposure**
The substance can be absorbed into the body by inhalation, ingestion, skin & eye contact.

**11.3 Additional Information**
RTECS: EL6475000

## 12. ECOGICAL INFORMATION

**12.1 Ecotoxicity**
Avoid contaminating waterways.

**Toxicity to fish:**
Pimephales promelas (fathead minnow), $LC_{50}$: 3,130 – 3,320 mg/L/96h

**Toxicity to daphnia & other aquatic invertebrates**
Daphnia magna (water flea), $LC_{50}$: > 520 mg/L/48h
Daphnia magna (water flea), $EC_{50}$: 7,060 mg/L/24h

**Toxicity to algae**
No data available

**12.2 Persistence and degradability**
No data available.

**12.3 Bioaccumulative potential**
No data available

**12.4 Mobility in soil**
No data available

**12.5 Other adverse effects**
No data available.

## 13. DISPOSAL CONSIDERATIONS

**13.1 Disposal methods and containers**
Ensure waste disposal conforms to relevant local, state and federal authority waste disposal regulations. All empty packaging should be disposed of as unused product.

**13.3 Special precautions for landfill or incineration**
Contact a specialist disposal company or the local waste regulator for advice. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility.

## 14. TRANSPORT INFORMATION

Classified as a Dangerous Goods by the criteria of the ADG Code for transport by road or rail
Classified as a Dangerous Goods by the criteria of the IMDG Code for transport by sea
Classified as a Dangerous Goods by the criteria of the IATA Code for transport by air

**14.1 UN number**

**ADG :** 1193 **IMDG :** 1193 **IATA :** 1193

**14.2 Proper shipping name**

**ADG :** ETHYL METHYL KETONE
**IMDG :** ETHYL METHYL KETONE
**IATA :** ETHYL METHYL KETONE

**14.3 Transport hazard class**

**ADG :** 3 **IMDG :** 3 **IATA :** 3

**14.4 Packing group**

**ADG :** II **IMDG :** II **IATA :** II

**14.5 Environmental hazards**

**ADG :** No **IMDG Marine Pollutant :** No **IATA :** No

**14.6 Special precautions for users** No data

**14.7 Hazchem code**

**ADG :** 2YE **IMDG EMS : F-E, S-D**

**14.8 Dangerous goods initial emergency response guide (SAA/SNZ HB76:2010)** 14

## 15. REGULATORY INFORMATION

**15.1 Safety, health and environmental regulations**

**Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)**
Poisons Schedule : S5

**Carcinogen classification under WHS Regulations 2011, Schedule 10**
Not listed

**Notification status**
**AICS** On the inventory, or in compliance with the inventory.

## 16. OTHER INFORMATION

**Key / legend to abbreviations and acronyms used in the MSDS**

| | |
|---|---|
| ADG | Australian Dangerous Goods |
| ASCC | Australian Safety and Compensation Council |
| DEC | Department of Environment and Conservation |
| HSPA | Hydrocarbon Solvents Producers Association |
| IARC | International Agency for Research on Cancer |
| NIOSH | National Institute for Occupational Safety and Health |
| NOHSC | National Occupational Health and Safety Commission |
| SUSDP | Standard for the Uniform Scheduling of Drugs and Poisons |
| Flam. Liq. | Flammable Liquids |
| Eye Irrit. | Eye irritation |
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| STOT SE | Specific target organ toxicity - single exposure |
| TWA | Time weighted average |
| STEL | Short term exposure level |
| STOT SE | Specific target organ toxicity – single exposure |
| SWA | Safe Work Australia |
| Peak Limitations | A ceiling concentration that should not be exceeded over a measurement period, which should be as short as possible, but not exceeding 15 minutes |
| $LD_{50}$ | Lethal dose 50. The single dose of a substance that causes the death of 50% of an animal population from exposure to the substance by any route other than inhalation |
| $LC_{50}$ | Lethal concentration that kills 50% of an animal population within a specified time |
| TD Lo | The lowest dose of a substance known to have produced signs of toxicity |
| RTECS | Registry of Toxic Effects of Chemical Substances |
| g/L | Grams per litre |
| $g/cm^3$ | Grams per cubic centimetre |

| | |
|---|---|
| $mg/m^3$ | Milligrams per cubic metre |
| mg/kg | Milligrams per kilogram |
| pH | Relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline |
| WHS | Work Health and Safety |

**Literature references**

"Workplace Exposure Standards for Airborne Contaminants, December 2011" by SWA
Work Health and Safety Regulations 2011

**Reason(s) for Issue:**

Revised primary SDS
Alignment to GHS requirements

**Disclaimer**

AGent Sales & Services Pty Ltd provides the information contained herein in good faith but makes no representation as to its' comprehensiveness or accuracy. A properly trained person using this product intends this document only as a guide to the appropriate precautionary handling of the material. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose. AGent Sales & Services Pty Ltd makes no representations or warranties, either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, AGent Sales & Services Pty Ltd will not be responsible for damages resulting from use of or reliance upon this information.