

**FOR FURTHER INFORMATION, PLEASE REFER TO THE SDS FOLLOWING**

Issue: June 2022

**PRODUCT:** Methyl Ethyl Ketone (MEK)  
**Other Names:** Ethyl Methyl Ketone, 2-Butanone, Butatone  
**Uses:** Industrial solvent: paint and ink manufacture  
**Signal Word:** DANGER

<b>UN No.</b>	1193
<b>Dangerous Goods Class</b>	3
<b>Subsidiary Risk</b>	None
<b>Pack Group</b>	II
<b>Hazchem</b>	2YE

<b>Hazardous Nature:</b>	This product is classified as hazardous under GHS (7th revised edition) in accordance with the New Zealand Hazardous Substances (Hazard Classification) Notice 2020
<b>Hazardous Classification:</b>	Flammable liquids, Cat. 2; Eye irritation, Cat. 2; Specific target organ toxicity - repeated exposure, Cat. 2
<b>HSNO Approval Number:</b>	HSR001190
<b>NZ Exposure Standards:</b>	TWA: 44 mg/m <sup>3</sup> (150 ppm); STEL: 890 mg/m <sup>3</sup> (300 ppm)

**Physical Characteristics (Typical)**

Section 9 of SDS

Appearance	Clear, colourless liquid
Boiling Point/ Range (°C):	79.6
Flash Point (°C):	-6
Density (g/mL):	0.805
Chemical Stability:	Stable at room temperature and pressure

**Product Ingredients**

Section 3 of SDS

Methyl ethyl ketone	78-93-3	100%
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For further ingredients information, please refer to the full SDS.

**GHS Pictograms**

Section 2 of SDS



For further risk and safety information, please refer to the full SDS.

**DEFINITIONS**

<b>Dangerous Goods</b>	Products that are classified as Dangerous for Storage and Transport: these products are allocated a UN No., with accompanying Class, Pack Group, and Sub. Risk, if required. Products that do not have a specific description under the code, but have low flash points, or such, must be classified under their most significant risk, eg. Flammable Goods N.O.S. (Not otherwise specified), UN 1993. Products not classed as Dangerous Goods are designated as not regulated for transport or N/R (non-regulated).
<b>Hazardous Substance</b>	Products are considered to be Hazardous if they pose an intrinsic risk to human or environmental health, such as mutagens (able to change DNA), teratogens (able to result in birth defects), carcinogens (able to generate cell abnormalities), etc. Materials classified with risks such as potential for misuse, like flammability, or explosions when heated and ignited, may be both classed as Dangerous Goods and Hazardous Substances.

**1. IDENTIFICATION**

<b>Product Name:</b>	<b>Methyl Ethyl Ketone (MEK)</b>
<b>Other Names:</b>	Ethyl Methyl Ketone, 2-Butanone, Butatone
<b>Chemical Family:</b>	Oxygenated hydrocarbon
<b>Recommended Use:</b>	Industrial solvent: paint and ink manufacture
<b>Supplier:</b>	ASCC Limited
<b>Street Address:</b>	112A Bush Road, Rosedale, Auckland, New Zealand
<b>Telephone:</b>	(09) 966 2447
<b>Emergency phone:</b>	<b>0800 243 622 (24 hours)</b> <b>+64 4 917 9888 (Outside NZ)</b>
<b>National Poisons Centre:</b>	0800 764 766

**2. HAZARDS IDENTIFICATION****Hazardous Nature**

This product is classified as hazardous under GHS (7th revised edition) in accordance with the New Zealand Hazardous Substances (Hazard Classification) Notice 2020

**Hazardous Classification**

Flammable liquids, Cat. 2; Eye irritation, Cat. 2; Specific target organ toxicity - repeated exposure, Cat. 2

**GHS Pictograms**

**Signal Word** DANGER

**Dangerous Goods Classification** 3

**Hazard Statements**

H225: Highly flammable liquid and vapour

H319: Causes serious eye irritation

H373: May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements**

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

P233: Keep container tightly closed.

P240: Ground and bond container and receiving equipment.

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

P242: Use non-sparking tools.

P243: Take action to prevent static discharges

P260: Do not breathe mist/vapours/spray.

P264: Wash hands and face thoroughly after handling.

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

**Response Statements**

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

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

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

P314: Get medical advice/attention if you feel unwell.

P370 + P378: In case of fire: Use dry chemical, carbon dioxide, foam, water spray or fog to extinguish

**Storage Statements**

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

**Disposal Statements**

P501: Dispose of contents/container in accordance with local/regional/national/international regulation.

**3. COMPOSITION: Information on Ingredients**

Chemical Ingredient	CAS No.	Proportion (%v/v)
Methyl ethyl ketone	78-93-3	100

**4. FIRST AID MEASURES**

For advice, contact National Poisons Centre (Phone New Zealand: 0800 764 766) or a doctor.

**Inhalation**

Move the victim to fresh air and keep at rest in a position comfortable for breathing. Begin artificial respiration if breathing has stopped. Seek medical attention

**Skin/Hair Contact**

If skin contact occurs, remove contaminated clothing and wash skin with soap and water. If skin irritation occurs, get medical advice. Launder contaminated clothing before re-use.

**Eye Contact**

Hold eyelids apart and flush the eye with running water for at least 15 minutes. Seek medical attention if irritation persists

**Ingestion**

If swallowed, do not induce vomiting. Give a glass of water to drink, if conscious. Never give anything by mouth to an unconscious person. Begin artificial respiration if the victim is not breathing. Use mouth to nose rather than mouth to mouth. Seek medical attention.

**Most Important Symptoms and Effects**

Irritating to eyes; may cause drowsiness or dizziness

**First Aid facilities**

Provide eye baths and safety showers.

**Medical Attention**

Treat according to symptoms. Avoid gastric lavage: risk of aspiration of product to the lungs with the potential to cause chemical pneumonitis.

**5. FIRE FIGHTING MEASURES**

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress, providing firefighters with this Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

**Suitable Extinguishing Media**

Water spray, alcohol-resistant foam, dry chemical, carbon dioxide

**Specific Hazards Arising from the Material**

Highly flammable liquid and vapour. Vapours are heavier than air so able to spread along ground and distant ignition is possible.

**Hazards from combustion products**

Carbon monoxide, carbon dioxide, other pyrolysis products typical of burning organic material.

**Fire-fighting Precautions**

No specific precautions advised.

**Special Protective Equipment**

Full protective clothing and self-contained breathing apparatus

**Hazchem Code:** 2YE**6. ACCIDENTAL RELEASE MEASURES****Emergency Procedures**

Prevent material from escaping to drains and waterways. Contain leaking packaging in a containment vessel. Prevent vapours from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

**Personal Precautions**

Highly flammable liquid and vapour. Avoid contact with spilt material, including inhalation. Keep people away and upwind of spill/leak. Prevent any vapours from building up in confined areas. Vapours heavier than air and can spread across the ground.

Beware of slipping hazard from spilled material.

#### Environmental Precautions

Prevent spillage from entering drains or water courses.

#### Methods and Materials for Containment

Soak up with inert absorbent material and dispose of as hazardous waste.

#### **Major land spill**

- Eliminate sources of ignition
- Warn occupants of downwind areas of possible fire/explosion or toxicity hazard
- Prevent product from entering sewers, watercourses, or low-lying areas
- Keep the public away from the area
- Shut off the source of the spill if possible and safe to do so
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation
- Take measures to minimise the effect on ground water
- Contain any spilled liquid with sand or earth
- Recover liquid spills by pumping – use explosion proof pump or hand pump – or with a suitable absorbent material
- Recover solid spills by mechanical collection methods; cover and prevent dusts or particles from spreading – consider wetting the product down, without diluting it – and vacuum or sweep up
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations
- See “First Aid Measures” and “Stability and Reactivity”

#### **Major water spill**

- Eliminate any sources of ignition
- Warn occupants and shipping in downwind areas of possible fire/explosion or toxicity hazard
- Notify the port or relevant authority and keep the public away from the area
- Shut off the source of the spill if possible and safe to do so
- Confine the spill if possible
- Remove the product from the surface by skimming or with suitable absorbent material
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations
- See “First Aid Measures” and “Stability and Reactivity”.

## 7. HANDLING AND STORAGE

#### Precautions for safe handling

This product is highly flammable. Do not open near open flame, sources of heat or ignition. No smoking. Keep container closed. Handle containers with care. Open slowly to control possible pressure release. Use grounding leads to avoid discharge (electrical spark). Use explosion-proof equipment.

#### Conditions for safe storage

Store in tightly closed original container in a dry, cool and well-ventilated place.

#### Storage compatibility

Natural, neoprene or nitrile rubbers, aluminium, plastics, strong oxidising agents.

See also: Section 10 – Stability and Reactivity for further information on incompatible materials

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### Exposure Standards

**New Zealand:** *Workplace Exposure Standards and Biological Exposure Indices, Edition 13: April 2022*

TWA: 44 mg/m<sup>3</sup> (150 ppm)

STEL: 890 mg/m<sup>3</sup> (300 ppm)

Advisory information None

**Australia:** *Workplace Exposure Standards for Airborne Contaminants, 16 December 2019*

TWA: Not determined

STEL: Not determined

Advisory information Not determined

#### **International:**

Singapore PELs (2006): TWA 590 mg/m<sup>3</sup> (200 ppm); STEL 885 mg/m<sup>3</sup> (300 ppm)

The time weighted average (TWA) exposure standard is the highest allowable average airborne concentration of a particular substance when calculated over an eight-hour working day.

The short-term exposure limit (STEL) exposure standard is the maximum allowable exposure concentration for a substance during any 15-minute period in the working day.

Products may be identified as carcinogens, respiratory or skin sensitisers, ototoxins, or easily absorbed to the skin according to the below notations.

**6.7A/Carcinogen Category 1:** Known or presumed human carcinogen

**6.7B/Carcinogen Category 2:** Suspected human carcinogen

**Carc 1A:** Known to have carcinogenic potential for humans

**Carc. 1B:** Presumed to have carcinogenic potential for humans

**Carc. 2:** Suspected human carcinogen

**Skin/Sk:** Substance is considered to have potential for significant skin absorption, risking overexposure

**Oto:** Substance can cause hearing loss. This may be in conjunction with noise exposure or without concurrent noise exposure. Risk may be via inhalation or skin absorption.

**Sen:** Substance is identified as having potential to cause respiratory and/or dermal sensitisation – an allergic reaction or hypersensitivity affecting skin (dsen) or respiratory system (rsen). High exposure may hasten the onset of the allergy, but once developed in an individual, very low exposures can provoke a significant reaction.

### Biological Limit Values

2 mg/L MEK in urine at end of shift

### Engineering Controls

Provide sufficient air exchange and/or exhaust in work rooms.

### Personal Protective Equipment

**Respiratory protection:** Where concentrations in air may exceed the limits described in the National Exposure Standards, it is recommended to use a half-face or full-face filter mask to protect from overexposure by inhalation.

**Recommended filter type:** Type A filter (organic vapour)

Refer to AS/NZS 1715: *Selection, Use and Maintenance of Respiratory Equipment* and AS/NZS 1716: *Respiratory Protective Devices* for further details on the use of respiratory protective equipment.

**Eye protection:** Wear safety glasses with side shields.

**Skin/ body protection:** Always wear long sleeves and long trousers or coveralls, and enclosed footwear or safety boots when handling this product. Wear chemical resistant gloves suitable for permanent contact. Recommended glove material: butyl rubber; break through time: 4 h; material thickness: 0.5 mm

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of measurement	Typical value
Appearance	-	Clear, colourless liquid
Odour	-	Characteristic
Odour threshold	ppm	Not available
Melting Point/Freezing Point	°C	-86.3
Boiling Point/ Range	°C	79.6
Flash Point	°C	-6
Flammability	-	Highly flammable
Explosive Limits (LEL – UEL)	%	1.4 – 11.4
Vapour Pressure @25°C	hPa	121.323
Vapour Density (Air = 1)	-	1.15
Density	g/mL	0.805
Autoignition Temperature	°C	404
Decomposition Temperature	°C	Not available
pH	-	Not available
Kinematic Viscosity	mm <sup>2</sup> /s	0.51
Solubility with Water	% w/w	Partly miscible
Other Solubility	% w/w	Not available
Partition Coefficient: n-octanol/water	-	Not available
Particle Characteristics	-	Not available
Percent Volatiles	%	100
Other Information	-	Dynamic viscosity: 0.41 mPa.s

The values listed are indicative of this product's physical and chemical properties. For a full product specification, please consult the Product Data Sheet.

## 10. STABILITY AND REACTIVITY

### Reactivity

No reactivity hazards identified

### Chemical Stability

Stable at room temperature and pressure

### Conditions to Avoid

Heat, flames and sparks

### Incompatible materials

Strong oxidising agents, acids, halogenated compounds

### Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and other organic complexes on incomplete burning or oxidation.

### Hazardous Reactions

None identified

### Hazardous Polymerisation

Will not occur

## 11. TOXICOLOGICAL INFORMATION

### Acute Effects

#### **Ingestion**

May be harmful if swallowed. Ingestion of large amounts of product will result in central nervous system depression with symptoms such as headaches, dizziness, hallucinations, euphoria, tingling of the extremities, vomiting and possible loss of consciousness. Aspiration to the lungs may cause chemical pneumonitis which may be fatal.

#### **Inhalation**

May be irritating to respiratory system. Inhalation of high concentrations may result in nervous system depression which can lead to dizziness, headaches, nausea, vomiting and loss of appetite.

#### **Skin Contact**

This product is irritating to the skin and prolonged or repeated exposure may result in dryness and cracking of skin.

#### **Eye Contact**

The liquid and vapour is irritating to eyes and may cause inflammation. Repeated or prolonged exposure may produce conjunctivitis.

### Chronic Effects

Repeated or prolonged ingestion of this product could result in liver or kidney damage.

Causes slight foetotoxicity but effects are seen only at high doses.

### Other Health Effects Information

The effects of this product in combination with n-hexane are potentiated (greatly increased). This means that the effects suffered by ingestion or inhalation will be increase or experienced more quickly.

### Toxicological Information

**Acute Toxicity - Oral:** Not classified as acutely toxic by ingestion

LD<sub>50</sub> (oral, rat): 2,737 mg/kg

**Acute Toxicity – Dermal:** Not classified as acutely toxic by skin contact

LD<sub>50</sub>: >2000 mg/kg (rabbit)

**Acute Toxicity – Inhalation:** Not classified as acutely toxic by inhalation

LC<sub>50</sub>: No data available

**Skin Corrosion/Irritation:** Not classified

**Serious Eye damage/irritation:** Causes serious eye irritation

**Respiratory or Skin Sensitisation:** Not classified

**Germ cell mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (STOT) – Single Exposure:** Not classified

**Specific Target Organ Toxicity (STOT) – Repeated Exposure:** May cause damage to organs through prolonged or repeated exposure

**Aspiration Hazard:** Not classified

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### **Aquatic Toxicity**

Not classified as hazardous to the aquatic environment.

Fish toxicity: LC<sub>50</sub> (Leuciscus idus) > 100mg/L/48 h

Crustacean toxicity: EC<sub>50</sub> (daphnia magna) >100 mg/L/48 h

Algae toxicity: EC<sub>50</sub> (Desmodesmus subspicatus) > 100 mg/L/7 d

#### **Terrestrial Ecotoxicity**

Not classified as hazardous to the terrestrial environment

#### **Persistence/Degradability**

Oxidises rapidly by photo-chemical reactions in air.

Aerobic: 98 %; 28 d; readily biodegradable

#### **Bioaccumulative Potential**

No information available

#### **Mobility in Soil**

This product is highly volatile and will rapidly evaporate to the air if released into the water. Product is soluble in water.

#### **Other adverse effects**

No additional adverse effects identified

## 13. DISPOSAL CONSIDERATIONS

### Disposal Methods

Disposal of hazardous waste must be carried out in compliance with all applicable regional and national regulations. This product is NOT suitable for disposal by domestic landfill or via municipal sewers, drains, natural streams or rivers. It must be disposed as chemical waste in accordance with the local authority.

Ensure that disposal of this product and its packaging is in accordance with the Hazardous Substances (Disposal) Notice 2017.

Refer to Section 8 of this SDS for precautions before carrying out disposal or recycling activities.

#### **Product Disposal**

Dispose of product as chemical waste via a licenced service provider.

#### **Packaging Disposal**

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain harmful residue and/or fumes and vapours that are flammable. Ensure that empty packaging is allowed to dry

## 14. TRANSPORT INFORMATION

Road and Rail Transport (NZS 5433)		Marine Transport (IMDG)		Air Transport (IATA)	
UN No.	1193	UN No.	1193	UN No.	1193
Proper Shipping Name	METHYL ETHYL KETONE	Proper Shipping Name	METHYL ETHYL KETONE	Proper Shipping Name	METHYL ETHYL KETONE
DG Class	3	DG Class	3	DG Class	3
Sub. Risk	None	Sub. Risk	None	Sub. Risk	None
Packing Group	II	Packing Group	II	Packing Group	II

### Dangerous Goods Segregation

This product is classified as Dangerous Goods Class 3, packing group II.

Please consult the *New Zealand Standard for Transport of Dangerous Goods on Land* (NZS 5433:2020) for further information.

**Environmental Hazards**

Marine Pollutant: No

**Special Precautions**

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**Additional Information**

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Hazchem Code: 2YE

**Marpol 73/78 Convention – Annex II**

Product Name: Methyl ethyl ketone

Ship Type: 3

Pollution: Z

**15. REGULATORY INFORMATION**

Country/ Region: New Zealand

**Inventory:** New Zealand Inventory of Chemicals (NZIoC)

Status: Listed in NZIoC

**HSNO Approval:**

HSR001190: 2-Butanone

**Classification****GHS classification:** Flammable liquids, Cat. 2; Eye irritation, Cat. 2; Specific target organ toxicity - repeated exposure, Cat. 2**Equivalent HSNO classification:** 3.1B, 6.4A, 6.9B**HSNO/HSWA Controls:**Refer to the above Group Standard, Health and Safety at Work Act 2015, [www.epa.govt.nz](http://www.epa.govt.nz) and [www.worksafe.govt.nz](http://www.worksafe.govt.nz) for further information on controls**Certified Handler:** Not required**Tracking:** Not required**Restriction to workplace:** Not applicable**Signage:** Threshold quantity: 250 L**Fire extinguishers:** Threshold quantity: 250 L**Emergency Response Plan:** Threshold quantity: 1,000 L**Secondary containment:** Threshold quantity: 1,000 L**Hazardous Substance Location requirements:****Other:** Hazardous Substance Location and Transit Depot requirements: 100 L (closed containers greater than 5 L); 250 L (closed containers up to and including 5 L); 50 L (open containers)**Agricultural Compounds and Veterinary Medicines Act 1997 (ACVM)**

Not applicable

**International Agreements****Montreal Protocol on Substances that Deplete the Ozone Layer:** Not applicable**Stockholm Convention:** Not applicable**Rotterdam Convention:** Not applicable**Basel Convention:** Not applicable



**International Inventory Status:**

**Australian Inventory of Industrial Chemicals:** Listed in AICIS Inventory

**International Inventories:**

Listed in: USA TSCA Inventory; Canadian Domestic Substances List (DSL); Jap. Inv. of Exist. & New Chemicals (ENCS); Japan. Industrial Safety & Health Law (ISHL); Korea. Existing Chemicals Inventory (KECI); Philippines Inventory of Chemicals and Chemical Substances (PICCS); China Inv. Existing Chemical Substances (IECSC)

**16. OTHER INFORMATION****SDS Version Number:** 2.0

**Reasons for Issue:** Information review and update to GHS format. HSNO Approval number amended

**Replaces SDS dated:** 18 January 2019

**New SDS issue date:** 27 June 2022

**Abbreviations:**

ACGIH: American Conference of Governmental Industrial Hygienists

AS/NZS: Standards Australia & Standards New Zealand

BCF: Bioconcentration Factor

BEI: Biological Exposure Index

CAS: Chemical Abstracts Service

CCID: Chemical Classification and Information Database

EC<sub>50</sub>: Effective Concentration, 50 per cent

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

GHS 7: Globally Harmonised System of Classification and Labelling of Chemicals, 7th revised edition, 2017, published by the United Nations

HSNO: Hazardous Substances and New Organisms Act 1996

HSWA: Health and Safety at Work Act 2015

IARC: International Agency for Research on Cancer

IC<sub>50</sub>: Half Maximal Inhibitory Concentration

LC<sub>50</sub>: Lethal Concentration, 50 per cent

LD<sub>50</sub>: Lethal Dose, 50 per cent

LEL: Lower Explosive Limit

LOAEL: Lowest-observed-adverse-effect level

N/R: Not Regulated

NOAEL: No-observed-adverse-effect-level

NOEC: No Observed Effect Concentration

NZIoC: New Zealand Inventory of Chemicals

NZS 5433 New Zealand Standard Transport of Dangerous Goods on Land

OECD: Organisation for Economic Co-operation and Development

STEL: Short-Term-Exposure Limit

TLV: Threshold Limit Value

TWA: Time-Weighted Average

UEL: Upper Explosive Limit

**References:**

- Supplier Safety Data Sheets
- EPA CCID <https://www.epa.govt.nz/database-search/chemical-classification-and-information-database-ccid/>
- Workplace Exposure Standards and Biological Exposure Indices. 12th Edition, published by WorkSafe New Zealand November 2020. <https://worksafe.govt.nz/topic-and-industry/work-related-health/monitoring/exposure-standards-and-biological-exposure-indices>
- US NLM ChemIDPlus: <https://chem.nlm.nih.gov/chemidplus/>
- OECD eChemPortal Substance Search <https://www.echemportal.org/echemportal/>

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses, but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the

use and storage of this type of product. For further information, please contact ASCC Limited.