Safety Data Sheet

METHYL ISOBUTYL KETONE

Infosafe No.	ACODL	Version No.	2.0	ISSUED Date	30/08/2013	Status	ISSUED by NUPLEXIN

1. Identification

GHS Product Identifier
METHYL ISOBUTYL KETONE

Product Code
87013

Company Name
Nuplex Industries (Aust) Pty Ltd (ABN 25 000 045 572)

Address
49 - 61 Stephen Road, Botany, NSW 2019
New Zealand: Nuplex Industries Ltd., Level 3 Millennium Centre, 602C Great South Road Ellerslie 1051
NEW ZEALAND

Telephone/Fax Number
Telephone: Australia: +61 (02) 9839 4000(BH); New Zealand: +64 (09) 583 6500(BH) Fax number: Australia: +61 (02) 9674 6225; New Zealand: +64 (09) 525 3709

Emergency phone number
Australia: 1800 022 037 (24H); New Zealand: 0800 154 666 (24H)

E-mail Address
compliance@nuplex.com.au

Recommended use of the chemical and restrictions on use
Solvents for industrial application

2. Hazard Identification

GHS classification of the substance/mixture
Classified as Hazardous according to the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001, New Zealand.
Classified as Dangerous Goods for transport according to the New Zealand Standard NZS 5433:2012 Transport of Dangerous Goods on Land.
3.1B Flammable liquid: high hazard
6.1D (Oral) - Substance that is acutely toxic
6.3B Substance that is mildly irritating to the skin
6.4A Substance that is irritating to the eyes
9.3B Substance that is ecotoxic to terrestrial vertebrates

Signal Word (s)
Danger

Hazard Statement (s)

H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H316 Causes mild skin irritation.

H319 Causes serious eye irritation.
H432 Toxic to terrestrial vertebrates.

Pictogram (s)
Flame, Exclamation mark, Environment

Precautionary statement - 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/ventilating/lighting//equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash contaminated skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement - Response
GENERAL
P101 If medical advice is needed, have product container or label at hand.
P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391 Collect spillage.
EYES
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.
SKIN
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332+P313 If skin irritation occurs: Get medical advice/attention.
INGESTION
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.
P331 Do NOT induce vomiting.

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

Precautionary statement - Disposal
P501 In the case of a substance that is in compliance with a HSNO approval other than a Part 6A (Group Standards) approval, a label must provide a description of one or more appropriate and achievable methods for the disposal of a substance in accordance with the Hazardous Substances (Disposal) Regulations 2001. This may also include any method of disposal that must be avoided.

3. Composition/information on ingredients

Ingredients

Name	CAS	EINECS	Proportion
Methyl isobutyl ketone	108-10-1	203-550-1	100 %

Preparation Description
Methyl isobutyl ketone

4. First-aid measures

Inhalation
If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop seek medical attention.

Ingestion
Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

Skin
Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek medical attention.

Eye contact
If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for several minutes until all contaminants are washed out completely. Seek medical attention.

First Aid Facilities
Eyewash, safety shower and normal washroom facilities.

Advice to Doctor
Treat symptomatically.

Other Information
For advice in an emergency, contact a Poisons Information Centre or a doctor at once. 0800 764 766

5. Fire-fighting measures

Suitable extinguishing media
Carbon dioxide, dry chemical or foam. Alcohol resistant foam is preferred. If not available normal foam can be used.

Unsuitable Extinguishing Media
Do not use water jet.

Hazards from Combustion Products
Under fire conditions this product may emit toxic and/or irritating fumes and gases including oxides of nitrogen, carbon monoxide and carbon dioxide.

Specific hazards arising from the chemical
Highly flammable liquid and vapour. Vapour/air mixtures may ignite explosively. Flashback along the vapour trail may occur. Runoff to sewer may create fire or explosion hazard.

Decomposition Temperature
Not available

Precautions in connection with Fire
Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Keep reduction valves free from grease and oil. Use water spray to disperse vapours. This product should be prevented from entering drains and watercourses.

6. Accidental release measures

Emergency Procedures
Wear appropriate personal protective equipment and clothing to prevent exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill. Place inert absorbent, non-combustible material onto spillage. Use clean non-sparking tools to

collect the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. Handling and storage

Precautions for Safe Handling
Avoid contact with skin and eyes. Wear overalls, impervious gloves and safety glasses. Use in designated areas with local exhaust ventilation, away from sparks, flames and other ignition sources. Use approved flammable liquid storage containers in the work area. Prevent release of vapours and mists into workplace air. Keep containers tightly closed. Take precautionary measures against static discharges. Do not empty into drains. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands before eating, drinking, smoking or using the toilet facilities.

Conditions for safe storage, including any incompatabilities
Store in a cool, dry, well-ventilated area away from sources of ignition, oxidising agents, strong acids, foodstuffs, and clothing. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Take precautions against static electricity discharges. Use proper grounding procedures. Ensure that storage conditions comply with applicable local and national regulations.
For information on the design of the storeroom, reference should be made to Australian Standard AS1940 - The storage and handling of flammable and combustible liquids. Reference should also be made to all applicable local and national regulations.

8. Exposure controls/personal protection

Occupational exposure limit values

Substance	Regulations	Exposure Duration	Exposure Limit	Units	Notes
Methyl isobutyl ketone	NZ OELs List	TWA	50	ppm	
	NZ OELs List	TWA	205	mg/m3	
	NZ OELs List	STEL	75	ppm	
	NZ OELs List	STEL	307	mg/m3	

Biological Limit Values
Name: Methyl isobutyl ketone
Determinant: methyl isobutyl ketone
Specimen: urine
Value: 1mg/L
Sampling time: End of shift.
Source: American Conference of Industrial Hygienists (ACGIH)

Appropriate engineering controls

This substance is hazardous and should be used with a local exhaust ventilation system, drawing vapours away from workers' breathing zone. A flame-proof exhaust ventilation system is required. If the engineering controls are not sufficient to maintain

concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn. Refer to relevant regulations for further information concerning ventilation requirements.
Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS/NZS 60079.10.1:2009 Explosive atmospheres - Classification of areas - Explosive gas atmospheres, for further information concerning ventilation requirements.

Respiratory Protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection
Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection
Wear gloves of impervious material such as laminated film. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.
Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. Physical and chemical properties

Appearance
Water white liquid

Colour
Water white

Odour
Ketones odour

Decomposition Temperature
Not available

Melting Point
-80°C

Boiling Point
116°C

Solubility in Water
2g/100 mL

Specific Gravity
0.80 (20°C)

pH
Not available

Vapour Pressure

19hPa @ 20°C

Vapour Density (Air=1)
4.2

Evaporation Rate
1.6 (n-Butyl acetate=1)

Odour Threshold
Not available

Viscosity
Not available

Volatile Component
100%

Partition Coefficient: n-octanol/water
Not available

Density
Not available

Flash Point
14°C

Flammability
Highly flammable liquid and vapour.

Auto-Ignition Temperature
449°C

Flammable Limits - Lower
1.3% v/v

Flammable Limits - Upper
8.0% v/v

Explosion Properties
Not available

Oxidising Properties
Not available

Kinematic Viscosity
Not available

Dynamic Viscosity
Not available

10. Stability and reactivity

Reactivity
Refer to Section 10: Possibility of hazardous reactions

Chemical Stability
Stable under normal conditions of storage and handling.

Conditions to Avoid
Heat, open flames and other sources of ignition

Incompatible Materials
Strong oxidising agents.

Hazardous Decomposition Products
Thermal decomposition may result in the release of toxic and/or irritating fumes, smoke and gases including carbon monoxide, carbon dioxide and oxides of nitrogen.

Possibility of hazardous reactions
Reacts with incompatible materials.

Hazardous Polymerization
Will not occur.

11. Toxicological Information

Toxicology Information
Toxicity data for material given below.

Acute Toxicity - Oral
LD50 (rat):2080 mg/kg

As published by EPA (Environmental Protection Authority) New Zealand:
LD50 (guinea pig):1600mg/kg

Ingestion
Harmful if swallowed. Ingestion of this product may irritate the gastric tract causing nausea and vomiting. Ingestion may cause CNS depression with symptoms including drowsiness, dizziness, fatigue, confusion and possible unconsciousness. If ingested, material may be aspirated into the lungs and cause chemical pneumonitis.

Inhalation
Inhalation of product vapours can cause irritation of the nose, throat and respiratory system. May cause drowsiness, dizziness, loss of coordination and unconsciousness.

Skin
Causes mild skin irritation. Skin contact will cause redness, itching and swelling.
Skin Irritation, rabbit (500mg/24h): Mildly irritating

Eye
Causes serious eye irritation. On eye contact this product will cause tearing, stinging, blurred vision, and redness.
Eye Irritation, rabbit (40 mg): Severe eye irritation

Respiratory sensitisation
Not expected to be a respiratory sensitiser.

Skin Sensitisation
Not expected to be a skin sensitiser.

Germ cell mutagenicity
Not considered to be a mutagenic hazard.

Carcinogenicity
Methyl isobutyl ketone is listed as a Group 2B: Possibly carcinogenic to humans according to International Agency for Research on Cancer (IARC).

Reproductive Toxicity
Not considered to be toxic to reproduction.

STOT-single exposure
Not expected to cause toxicity to a specific target organ.

STOT-repeated exposure

Not expected to cause toxicity to a specific target organ.

Aspiration Hazard
Not expected to be an aspiration hazard.

Other Information
Prolonged or repeated skin contact may cause defatting leading to dermatitis. Exposure to vapours may cause injury to the lungs, liver and kidneys. May aggravate asthma and inflammatory or fibrotic pulmonary disease.

12. Ecological information

Ecotoxicity
Toxic to terrestrial vertebrates.

Persistence and degradability
Not available

Mobility
Not available

Bioaccumulative Potential
Not available

Other Adverse Effects
Not available

Environmental Protection
Do not discharge this material into waterways, drains and sewers.

13. Disposal considerations

Disposal Considerations

Dispose of waste according to applicable local and national regulations.Labels should not be removed from containers until they have been cleaned. Do not cut, puncture or weld on or near containers. Empty containers may contain flammable residues. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers. Advise flammable nature. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Controlled incineration is recommended.
Product Disposal:
Product wastes are controlled wastes and should be disposed of in accordance with all applicable local and national regulations. In this specific case the product is a solvent-based, flammable substance and therefore can be sent to an approved high temperature incineration plant for disposal. Large volumes may be re-distilled by solvent recovery contractors. Personal protective clothing and equipment as specified in Section 8 of this SDS must be worn during handling and disposal of this product. The ventilation requirements as specified in the same section must also be followed, and the precautions given in Section 7 of this SDS regarding handling must also be followed. Do not dispose into the sewerage system. Explosive gas-air vapour mixtures may form. In New Zealand, the disposal agency or contractor must comply with the New Zealand Hazardous Substances (Disposal) Regulations 2001. Further details regarding disposal can be obtained on the EPA New Zealand website under specific group standards.

Container Disposal:
The container or packaging must be cleaned and rendered incapable of holding any substance. It can then be disposed of in a manner consistent with that of the substance it contained. In this instance the packaging can be disposed through a commercial waste collection service. Alternatively, the container or packaging can be recycled if the hazardous residues have been thoroughly cleaned or rendered non-hazardous. In New Zealand, the packaging (that may or may not hold any residual substance) that is lawfully disposed of by householders or other consumers through a public or commercial waste collection service is a means of compliance with regulations.

14. Transport information

Transport Information
This material is classified as a Class 3 - Flammable Liquid
Must not be loaded in the same freight container or on the same vehicle with:
Class 1: Explosives
Division 2.1: Flammable gases
Division 2.3: Toxic gases
Division 4.2: Spontaneously combustible substances
Division 5.1: Oxidising substances
Division 5.2: Organic peroxides
Class 7: Radioactive materials unless specifically exempted

Must not be loaded in the same freight container; and on the same vehicle must be separated horizontally by at least 3 metres unless all but one are packed in separate freight containers with:
Division 4.3: Dangerous when wet substances
Goods of packing group II or III may be loaded in the same freight container or on the same vehicle if transported in segregation devices with:
Division 4.2: Spontaneously combustible substances
Division 4.3: Dangerous when wet substances
Division 5.1: Oxidising substances
Division 5.2: Organic peroxides

Special Precautions for User
Not available

U.N. Number
1245

UN proper shipping name
METHYL ISOBUTYL KETONE

Transport hazard class(es)
3

Packing Group
II

Hazchem Code
•3YE

UN Number (Air Transport, ICAO)
1245

IATA/ICAO Proper Shipping Name
METHYL ISOBUTYL KETONE

IATA/ICAO Hazard Class
3

IATA/ICAO Packing Group
II

IATA/ICAO Symbol
Flammable liquid.

IMDG UN No
1245

IMDG Proper Shipping Name
METHYL ISOBUTYL KETONE

IMDG Hazard Class
3

IMDG Pack. Group
II

IMDG Marine Pollutant
No

IMDG EMS
F-E,S-D

Transport in Bulk
Not available

15. Regulatory information

Regulatory Information
Classified as Hazardous according to the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001, New Zealand.
HSNO (CCID) Name: Methyl isobutyl ketone

HSNO Approval Number
HSR001194

16. Other Information

Date of preparation or last revision of SDS
SDS Reviewed: August 2013, Supersedes: September 2008

Literature References
Workplace Exposure Standards and Biological Exposure Indices, Department of Labour, Health & Safety.
Transport of Dangerous goods on land NZS 5433.
Preparation of Safety Data Sheets - Approved Code of Practice Under the HSNO Act 1996 (HSNO CoP 8-1 09-06).
Assigning a hazardous substance to a group standard.
American Conference of Industrial Hygienists (ACGIH)

Contact Person/Point

IMPORTANT ADVICE: This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including its use in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact the supplier listed in section 1 of the SDS. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

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Technical Contact Numbers
For further information ask for: For specialist advice in emergencies: 0800 154 666

End of SDS

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