

MATERIAL SAFETY DATA SHEET INFORMATION

For further information, please refer to the Material Safety Data Sheet which follows

Issued: December 2010

Product: Acetone

Other names: None.

Uses: Industrial solvent; chemical intermediate.

UN Number: 1090, ACETONE
ADG Classification: Class 3: Flammable liquids.
Subsidiary Risk: None allocated
Packaging Group: II
Hazchem Code: •2YE
Poison Schedule: S5

Hazardous Nature: Xn, Harmful. Xi, Irritating. F+, Highly Flammable. Hazardous according to the criteria of SWA. Dangerous according to the Australian Dangerous Goods (ADG) Code.

Physical Characteristics (Typical)

See Section 9 of MSDS

Appearance: Clear, colourless liquid.
Boiling Point: 56°C at 100kPa
Flash Point: -20°C
Specific Gravity: 0.80 at 15°C
pH: No data.
Chemical Stability: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.
Reactivity: strong oxidising agents. Reacts with chloroform and bromoform under basic conditions. Can form explosive peroxides on contact with strong oxidants such as acetic acid, nitric acid, hydrogen peroxide.

Ingredients:

See Section 3 of MSDS

Ingredients	CAS No	Conc, %	TWA (mg/m ³)	STEL (mg/m ³)
Acetone	67-64-1	min 99	1185	2375

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

Risk Phrases:

See Section 2 of MSDS

R11, R36, R66, R67. Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.

DEFINITIONS:

Dangerous Goods Products that are regulated for transport by Road and Rail under the national guide are Dangerous Goods. Products can be classed as Dangerous Goods if they have a flash point below 60.5°C, a pH below 3 or above 11, are explosives or toxic. These goods will be allocated a UN No., Packing Group, Hazchem Code, and possibly a subsidiary risk.

Hazardous Substances Hazardous Substances are those products that are intrinsically hazardous by nature, rather than by misuse. These include mutagens, teratogens, carcinogens, products that are toxic (but not sufficiently toxic to be classed as Dangerous Goods or carry a subsidiary risk), and products that pose environmental risks.

Poisons Poisons are products that are regulated by the dose or exposure, often having physical and chemical effects at certain concentrations particular to the nature of the product. For example, in small doses, some products are harmless, but with increased concentration or exposure these products can be extremely harmful. The classification indicates First Aid, etc.

1 - Identification of The Material and Supplier

Product Name: Acetone
Chemical nature: Aliphatic ketone.
Product Uses: Industrial solvent; chemical intermediate.

Univar Australia Pty Ltd ABN 99 114 669 091
14 Williamson Road
Ingleburn, NSW 2565
Phone: 02 9618 1588 (business hours)
Emergency Phone: Chemcall: 1800 127 406
Fax: 02 9618 1505

UN Number: 1090, ACETONE
ADG Classification: Class 3: Flammable liquids.
Subsidiary Risk: None allocated
Packaging Group: II
Hazchem Code: •2YE
Poison Schedule: S5

Creation Date: December, 2010
This version issued: October, 2011 and is valid for 5 years from this date.

2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Xn, Harmful. Xi, Irritating. F+, Highly Flammable. Hazardous according to the criteria of SWA.

Dangerous according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R11, R36, R66, R67. Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.

Safety Phrases: S2, S9, S16, S26, S28, S29, S33, S36, S46, S24/25. Keep out of reach of children. Keep container in a well ventilated place. Keep away from sources of ignition - No smoking. In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. After contact with skin, wash immediately with plenty of soap and water. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing. If swallowed, contact a doctor or Poisons Information Centre immediately and show this MSDS or label. Avoid contact with skin and eyes.

Emergency Overview

Physical Description & Colour: Clear, colourless liquid.

Odour: Characteristic (slightly irritating) odour.

Major Health Hazards: Exposure can cause respiratory tract and throat irritation, headaches, shortness of breath and symptoms similar to intoxication. Overexposure can produce severe central nervous system depression, coma and respiratory failure. Eye irritant, repeated exposure may cause skin dryness or cracking, vapours may cause drowsiness and dizziness.

Potential Health Effects

Inhalation:

Short Term Exposure: Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: Vapours may cause drowsiness and dizziness.

Skin Contact:

Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product may be irritating, but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: Repeated exposure may cause skin dryness or cracking.

Eye Contact:

Short Term Exposure: This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

Long Term Exposure: No data for health effects associated with long term eye exposure.

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Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. However, this product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m ³)	STEL (mg/m ³)
Acetone	67-64-1	min 99	1185	2375

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Inhalation: No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

Skin Contact: Gently blot away excess liquid. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 5 minutes or until chemical is removed.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

5 - Fire Fighting Measures

Fire and Explosion Hazards: This product is classified as highly flammable. There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should take care and appropriate precautions. Any explosion will likely spread the fire to surrounding materials. Water spray may be used to cool drums involved in a fire, reducing the chances of an explosion. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Suitable extinguishing media are carbon dioxide, dry chemical, foam. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray can be used. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is a danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.

Flash point: -20°C

Upper Flammability Limit: 13%

Lower Flammability Limit: 2.2%

Autoignition temperature: 465°C

Flammability Class: Highly flammable

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6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Immediately call the Fire Brigade. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include butyl rubber, Teflon, PE/EVAL, Responder. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type AX cartridge, suitable for low boiling point organic compounds. See manufacturer's specifications for detailed specifications. Otherwise, not normally necessary.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Avoid using sawdust or other combustible material. Any electrical equipment should be non-sparking. Any equipment capable of building an electrostatic charge should be electrically grounded. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area, and make sure that surrounding electrical devices and switches are suitable. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination and possible evaporation. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 2500kg or L of Dangerous Goods of Packaging Group II, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits

TWA (mg/m³)

STEL (mg/m³)

Acetone

1185

2375

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

Skin Protection: You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: butyl rubber, Teflon, PE/EVAL, Responder.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

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9 - Physical and Chemical Properties:

Physical Description & colour:	Clear, colourless liquid.
Odour:	Characteristic (slightly irritating) odour.
Boiling Point:	56°C at 100kPa
Freezing/Melting Point:	-95°C
Volatiles:	Completely volatile at 100°C.
Vapour Pressure:	24kPa at 20°C
Vapour Density:	2.0
Specific Gravity:	0.80 at 15°C
Water Solubility:	Miscible.
pH:	No data.
Volatility:	No data.
Odour Threshold:	200-450ppm
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	-0.24 (log P octanol/water)
Viscosity:	0.426mm ² /sec (temperature not given)
Autoignition temp:	465°C

10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C, away from direct sunlight. Keep containers tightly closed. Keep containers and surrounding areas well ventilated. Keep away from sources of sparks or ignition. Handle and open containers carefully. Any electrical equipment in the area of this product should be flame proofed.

Incompatibilities: strong oxidising agents. Reacts with chloroform and bromoform under basic conditions. Can form explosive peroxides on contact with strong oxidants such as acetic acid, nitric acid, hydrogen peroxide.

Fire Decomposition: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and smoke. Water is also formed. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

11 - Toxicological Information

Toxicity: LD₅₀ Oral, Rat 5800mg/kg

LD₅₀ Oral, Mouse = 3000mg/kg

LD₅₀ Oral, Rabbit = 5340mg/kg

LD₅₀ Dermal, Guinea Pig = >9400mg/kg

In Delayed (Chronic and subchronic) studies, an 8 week inhalation study in rats showed no significant effects at 19,000ppm 5 days/week, and a 90 day oral toxicity in rats showed a no-observed-effects-level of 100mg/kg/day and a low-observed-effects-level of 500mg/kg/day based on increased liver and kidney weights and nephrotoxicity.

Ames Assay (S. typhimmium): Negative

Chromosome Aberrations and Sister Chromatid Exchange Assays: Negative

Point Mutation in Mouse Lymphoma Cells: Negative

DNA Cell-binding Assay: Negative

Slight developmental toxicity (decrease of embryo weight) has been reported in rat high concentration exposure studies (20 mg/L) as well as decrease of embryo weight and the increase of late embryo absorption rate in mouse high concentration exposure (15.6 mg/L) [GHS Category 2]

There is no data to hand indicating any particular target organs.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Acetone	Conc>=20%: Xi; R36
Acetone: LD ₅₀ Oral, Rat >5000mg/kg	LD ₅₀ Dermal, Rabbit = >5000mg/kg
LC ₅₀ Inhalation, Rat = 75.8mg/L/4hr	
A likely aspiration hazard due to low viscosity.	

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12 - Ecological Information

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

BOD: 1.22g O₂/g (5 days)

Fish: LC₅₀ rainbow trout: 5540mg/L

LC₅₀ bluegill sunfish: 8300mg/L

Daphnia: EC₅₀ 10mg/L (24-48 hour)

Bioconcentration factor is 1, suggesting bioconcentration in aquatic organisms is low. This was calculated using an experimental Log Kow value of -0.24

Octanol/water partition coefficient: 0.58

Biodegradability: 84% in 20 days

Fish: LC₅₀ fathead minnow (*Pimephales promelas*): 100mg/L

13 - Disposal Considerations

Disposal: This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. If neither of these options is suitable, consider controlled incineration, or landfill.

14 - Transport Information

ADG Code: 1090, ACETONE

Hazchem Code: •2YE

Special Provisions: None allocated

Limited quantities: ADG 7 specifies a Limited Quantity value of 1 L for this class of product.

Dangerous Goods Class: Class 3: Flammable liquids.

Packaging Group: II

Packaging Method: P001, IBC02

Class 3 Flammable Liquids shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 2.1 (Flammable Gases where flammable liquids and flammable gases are both in bulk), 2.3 (Toxic Gases), 4.2 (Spontaneously Combustible Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances, except Flammable Liquid is nitromethane), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases except where the Flammable Liquids and Flammable Gases are in bulk), 2.2 (Non-Flammable Non-Toxic Gases), 4.1 (Flammable Solids), 4.3 (Dangerous When Wet Substances), 6 (Toxic Substances, except where Flammable Liquid is nitromethane), 8 (Corrosive Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs or foodstuff empties.

15 - Regulatory Information

AICS: This product is compliant with NICNAS regulations.

The following ingredient: Acetone, is mentioned in the SUSMP.

16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS MSDS SUMMARISES 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 MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

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IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. 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.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the SWA document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]
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