

Acetone

SAFETY DATA SHEET (SDS)

Section 1 - Identification of the Preparation and the Company

Product Name: **Acetone**

Other Names: 2-Propanone, Propanone, Dimethyl ketone

This product is classified as hazardous according to the criteria of Safe Work Australia.

Classified as a Dangerous Good according to the Australian Dangerous Goods Code (ADG).

Uses: Industrial solvent and chemical intermediate

Manufacturer: Summit Composites Pty Ltd

Address

Country

Telephone

Facsimile

Website

Poisons Information Centre

Western Australia

22 Port Kembla Drive

Bibra Lake WA 6163

+ 61 8 9418 4555

+ 61 8 9434 1489

<http://summitcomposites.com.au/>

Australia 131 126; New Zealand 0800 764 766

Victoria

51 Stephen Road

Dandenong South Vic 3175

+61 3 9792 2855

+61 3 9792 2866

Section 2 – Hazards Identification

DANGER



Flammable



Harmful, acute

Hazard Statements

Flammable Liquid Category 2

Eye Irritant Category 2

Single Target Organ Toxicity SE 3

H225: Highly flammable liquid and vapour.

H319: Causes serious eye irritation

H336: May cause drowsiness or dizziness

Precautionary Statements

Prevention

P102 Keep out of reach of children

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.

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 person to fresh air and keep 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

P370 + P378 In case of fire: Use carbon dioxide, dry chemical or foam for extinction

Storage

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

Disposal

P501 Dispose of contents/container to approved landfill

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Section 3 - Composition/Information on Ingredients

Ingredient(s)	CAS-number	%wt
Acetone	67-64-1	>99%
Water and other impurities		<1%

Section 4 – First Aid Measures

Ingestion:

NEVER GIVE AN UNCONSCIOUS PERSON ANYTHING TO DRINK NOR ATTEMPT TO INDUCE VOMITING. If the person is conscious, rinse mouth out with water ensuring that mouthwash is not swallowed. Give about 250mL (2 glasses) of water to drink. DO NOT attempt to induce vomiting. Seek URGENT medical attention. For advice, contact a Poisons Information Centre (phone e.g. Australia 131 126; New Zealand 0800 764 766).

Inhalation:

Avoid becoming a casualty. DO NOT enter a hazardous area without adequate breathing protection. Remove to fresh air. Keep warm and at rest. If breathing is laboured, hold in a half upright position (this assists respiration). Apply artificial respiration if breathing has stopped. Seek URGENT medical attention for all but the most minor cases of over-exposure.

Eye Contact:

If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. In all cases of eye contamination it is a sensible precaution to seek medical attention.

Skin Contact:

Remove contaminated clothing and wash thoroughly with soap and water. Use water alone, if soap is unavailable. Apply a moisturising hand cream, if available. Seek medical attention if any soreness or inflammation of the skin persists or develops later. Launder affected clothing before re-use

Additional Information:

First Aid Facilities: Normal washroom facilities are adequate for small volumes of this product. If large volumes are in use an eye wash station should be available. Also consider providing a safety shower if large volumes are being handled.

Advice to Doctor: Treat symptomatically. Because of the risk of aspiration, gastric lavage should only be undertaken after endotracheal intubation.

Entry Route(s): Inhalation, ingestion and skin and eye contact.

Section 5 – Fire Fighting Measures

Highly flammable. Solvent vapours can form explosive mixtures with air in poorly ventilated conditions. Vapour is heavier than air and may travel along the ground, distant ignition is possible. May evolve toxic fumes if heated to decomposition or burned in a fire situation.

In case of fire, evacuate personnel to safe areas. Avoid breathing vapours or fumes. Responders must be made aware of the nature of the hazard and must wear self-contained breathing apparatus and full protective clothing (including helmet, coat trousers, boots and gloves). If safe to do so, move undamaged containers from fire area but DO NOT approach containers suspected of being hot. Undamaged and sealed containers may be kept cool by spraying with water.

Extinguish using carbon dioxide; dry chemical; protein-based foam; or alcohol-resistant foam. Solid water jets are not effective for fire fighting and may spread flames. Prevent, by any means possible, runoff from entering drains or water courses.

Section 6 – Accidental Release Measures

Avoid contact. Evacuate non-emergency personnel from area. Keep upwind of spill. Ventilate area. Use appropriate personal protective equipment (refer to Section 8 - Exposure Controls / Personal Protection).

Contain liquid to prevent contamination of soil, surface water or ground water. Prevent from entering, sewers or drains.

Cover with an absorbent such as earth, sand or a commercial oil absorber. Collect material in containers and remove to a well-ventilated area. Clean up floor areas. Wash area well with water. Test atmosphere for vapours to ensure safe working conditions before other personnel are allowed in the area.

Dispose by controlled incineration or to approved land-fill.

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Section 7 – Handling and Storage

Storage:

Store out of direct sunlight in a cool well-ventilated area. Area should be designated no smoking, away from all sources of ignition. Higher temperatures may cause pressure build up inside containers

Keep containers tightly closed when not in use. Protect containers against physical damage.

Do not store in open containers. Damaged or punctured drums should be emptied and disposed of properly.

Do not store with oxidising agents.

Do not store in open containers. Damaged or punctured drums should be emptied and disposed of properly.

Class 3 Flammable Liquids should not be transported or stored with goods of:

Class 1 Explosives

Class 2.1 Flammable Gases (where both flammable liquid and flammable gases are in bulk)

Class 2.3 Poisonous Gases

Class 4.2 Spontaneously Combustible Substances

Class 5.1 Oxidising Agents

Class 5.2 Organic Peroxides

Class 6 Poisonous (toxic) Substances (where the flammable liquid is nitromethane)

Class 7 Radioactive Substances

Flammable liquid according to AS1940 - Storage and Handling of Flammable and Combustible Liquids. Store in accordance with regulations for storage of flammable liquids.

Handling:

Use only with adequate ventilation. Provide general and / or local exhaust ventilation to ensure that the exposure standards are not exceeded. For Personal Protective Equipment (PPE), see Section 8.

Section 8 – Exposure Controls/Personal Protection

Exposure standards: Exposure standards have been allocated for acetone.

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TWA: 500 ppm, 1185mg/m³

STEL: 1000ppm, 2375mg/m³

Exposure standards represent airborne concentrations of individual chemical substances, which according to current knowledge, should neither impair the health nor cause undue discomfort to nearly all workers. Exposure standard may be a time-weighted average (TWA), a short-term exposure limit (STEL) or a peak level.

Engineering Controls:

Ventilation requirements depend on the quantity of product in use and the method of application

Product may generate high vapour levels in confined or poorly ventilated areas.

Ventilation should be sufficient to maintain vapour levels below the appropriate exposure standard. Use only in well ventilated areas unless forced air ventilation is employed, this is due to the fire hazard as well as the risks from inhalation.

Work should be undertaken in a purpose-built spray booth if available.

Ventilation systems should be installed and regularly monitored to ensure exposure to vapour/aerosol is minimised.

Exhaust systems should be designed in accordance with workplace conditions. The air should always be moved away from the source of vapour generation and the person working at this point. The odour and irritancy of this material are inadequate to warn of excessive exposure.

Personal Protection:

Requirements are dependent on working conditions, quantity of product in use and method of application. For minor use: safety goggles and nitrile or butyl rubber gloves may be sufficient. If large quantities are in use: chemical resistant safety goggles, gloves or gauntlets and overalls. A half face respirator with organic vapour filter is required unless the area is well ventilated. In confined or poorly ventilated areas: air supplied breathing apparatus. Select and use respirators in accordance with AS/NZS 1715/1716. N.B. If using an air-purifying respirator, TAKE THE LIMITS OF ABSORPTION CAPACITY INTO ACCOUNT. CHANGE FILTERS REGULARLY.

Section 9 – Physical and Chemical Properties

Appearance: Clear, mobile liquid, characteristic, pungent, sweetish odour

Specific gravity (H2O = 1) 0.79

Boiling Point: 56°C

Melting Point: -94°C

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Solubility in Water: Completely miscible
Vapour Pressure: 180mmHg @ 25°C
Vapour density (Air = 1): Heavier than air.
Flash Point: -17°C (Closed Cup)
Explosive limits (% By Volume in Air): LEL:2.5% UEL:13.0%

Section 10 – Stability and Reactivity

Stability: Stable under recommended storage and handling conditions. Highly flammable. Elevated temperatures may cause pressure build-up inside containers, and containers may explode if heated.
Hazardous Decomposition Products: Burning can produce carbon monoxide and/or carbon dioxide
Hazardous polymerisation: Will not occur.
Incompatibilities: Avoid all sources of ignition such as open flames, sparks, hot surfaces or burning cigarettes. The product may react with strong oxidising agents such as liquid or powdered chlorine, strong alkalis, strong mineral acids and bromine.
Conditions to Avoid: Excessive heat, ignition sources and incompatible materials. May degrade certain plastics

Section 11 – Toxicological Information

Symptoms of Exposure:

INGESTION: Acetone has relatively low oral toxicity but is severely irritating to all mucous membranes. May cause abdominal pain, nausea and diarrhoea as well as symptoms similar to those for inhalation. If vomiting occurs after ingestion, small droplets of the liquid may enter the lungs (aspiration) with the risk of chemical pneumonitis being induced.
EYE: Liquid may cause moderate to severe eye irritation and corneal damage. Most people will experience eye irritation at airborne concentrations of 500-1000ppm.
SKIN: Brief contact may cause mild irritation. Prolonged or repeated contact may cause dryness and cracking of the skin and may contribute to dermatitis. Because of its volatility, skin absorption of acetone is unlikely to occur unless evaporation is prevented.
INHALATION: Vapours are irritating to the eyes, nose and throat at concentrations above approximately 500ppm and concentrations above 1000ppm may have central nervous system effects such as light-headedness, dizziness, loss of coordination and nausea. Higher concentrations may cause unconsciousness and coma.

Chronic Health Effects

Inhalation, ingestion and skin contact are the routes of entry into the body. The liquid defats the skin and prolonged or repeated contact may contribute to dermatitis.

Toxicological Information

Acute Toxicity Data:

TCLo (inhaled, man): 10mg/m³/6H;
TDLo (oral, man): 2857mg/Kg;
LD50 (oral, rat): 5800mg/Kg.

Teratogenicity: No relevant information found.

Reproductive Toxicity: Acetone is not considered to be genotoxic or mutagenic. In a study of pregnant rats and mice exposed to acetone vapour during days 6-19 of gestation, slight developmental toxicity was observed. Reports of other reproductive effects of acetone include observations of testicular effects and changes of sperm quality in rats. Experimental animal data characterizing the effects of long term oral or inhalation exposure to acetone are not available, due probably to its low toxicity and its endogenous characteristics. Pre-treatment of rodents with acetone enhances the hepatotoxic effects of a number of compounds, notably halogenated alkanes. Acetone has been used extensively as a solvent vehicle in skin carcinogenicity studies and is not considered carcinogenic when applied to the skin.

Section 12 – Ecological Information

Ecotoxicity: Do not allow to contaminate waterways, sewers, soil or vegetation. Acetone breaks down rapidly in the environment.

WATER: In water, acetone is not expected to adsorb to suspended solids or sediment based upon its estimated Koc value. Volatilization from water surfaces is expected to be an important environmental fate process given its estimated Henry's Law constant. Estimated half-lives for a model river and model lake are 38 and 333 hours, respectively. Experimentally determined volatilization half-lives in a shallow stream were measured in the range of 8-18 hours. Bio concentration in aquatic organisms is considered low based upon an estimated Bio concentration factor (BCF) value of 1

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SOIL: Acetone is expected to have very high mobility in soils based upon an estimated Koc value of 1. Volatilization from dry soil surfaces is expected based upon the vapour pressure of this compound. Volatilization from moist soil surfaces is also expected based upon the measured Henry's Law constant of 1.87×10^{-5} atm-cu m/mol. This compound is expected to biodegrade under aerobic and anaerobic conditions.

ATMOSPHERE: Based on an experimental vapour pressure of 231 mm Hg at 25 deg C, acetone is expected to exist solely as a vapour in the ambient atmosphere. Vapour-phase acetone is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with an estimated atmospheric half-life of 71 days. Acetone also undergoes photodecomposition by sunlight with an estimated half-life of about 80 days.

No data available.

Section 13 – Disposal Considerations

Do not allow into any sewers, drains, on the ground or into any body of water. Any disposal must be accordance with applicable State, Territory and/or Local government regulations. Dispose by controlled incineration or to approved land-fill. Product and container must be disposed as hazardous waste.

Section 14 – Transport Information

This product is a Class 3 Flammable Liquid according to the Australian Code for the Transportation of Dangerous Goods by Road and Rail (ADG Code).

UN Number:	1090
Proper shipping name:	ACETONE
DG Class:	3
Hazchem code:	2YE
Packing group:	II

Section 15 – Regulatory Information

Product is a Scheduled 5 (S5) Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

All ingredients are listed on the Australian Inventory of Chemical Substances (AICS).

Section 16 – Other Information

REFERENCES

1. List of Designated Hazardous Substances [NOHSC: 10005(1999)]
2. Safe Work Australia Code of Practice: Preparation of Safety Data Sheets for Hazardous Chemicals, 2016
3. Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC: 1003(1995)] and subsequent amendments
4. AS/NZS 1715 - Selection, use and maintenance of respiratory protective devices.
5. AS/NZS 1716 - Respiratory protective devices.
6. Australian Code for the Transportation of Dangerous Goods by Road and Rail (ADG Code), Edition, 7.4.
7. International Maritime Dangerous Goods Code (IMDG), and current amendments
8. Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) No. 15, November 2016

ABBREVIATIONS

LC50	Lethal dose for 50% of test population, by inhalation.
LDLo	Lowest documented lethal dose
LD50	Lethal dose for 50% of test population, by ingestion or skin contact
TDLo	Lowest published toxic dose



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User should verify applicability of this data sheet if more than 5 years old.

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