

1. IDENTIFICATION

Product Name	Adipic acid
Other Names	1,4-Butanedicarboxylic acid; 1,6-Hexanedioic acid
Uses	Buffering and masking agent, Fragrance ingredient, pH adjuster in cosmetic products; Adhesives, binding agents; Cleaning and washing agents; Paints, lacquers and varnishes; Solvents and softeners; pH and process regulation agents; Construction materials and flux agents for casting or joining materials; Leather tanning, dye, finishing, impregnation and care products; Oil and gas extraction, in products such as flocculants, precipitants and neutralisation agents; Intermediate in the production of lubricating oil additives and polymer preparations.
Chemical Family	No Data Available
Chemical Formula	C6H10O4
Chemical Name	Hexanedioic acid
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories Serious Eye Damage/Irritation - Category 2A

Pictograms



Signal Word Warning

Hazard Statements **H319** Causes serious eye irritation.

Precautionary Statements Prevention **P280** Wear eye protection/face protection.

P264 Wash hands thoroughly after handling.

Response **P337 + P313** If eye irritation persists: Get medical advice/attention.

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

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	6.1D	Substances that are acutely toxic - Harmful
		6.4A	Substances that are irritating to the eye
	Environmental Hazards	9.1D	Substances that are slightly harmful to the aquatic environment or are otherwise designed for biocidal action
		9.2D	Substances that are slightly harmful in the soil environment
		9.3C	Substances that are harmful to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Adipic acid	C6H10O4	124-04-9	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed

IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Get medical advice/attention. Never give anything by mouth to an unconscious person.

Eye	IF IN EYES: Rinse cautiously with water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention. - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention.
Advice to Doctor	Treat symptomatically.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Combustible solid - May burn but does not ignite readily.
Extinguishing Media	Use dry chemical, Carbon dioxide, foam or water spray for extinction.
Fire and Explosion Hazard	May form flammable dust clouds in air.
Hazardous Products of Combustion	Fire may produce irritating and/or toxic fumes, including oxides of Carbon.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (fire kit).
Flash Point	196 °C
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	422 °C
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). Do not touch or walk through spilled material - Slippery when spilt. Avoid accidents, clean up immediately. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Use clean, non-sparking tools to collect material and place it into suitable containers for later disposal (see SECTION 13); if appropriate, moisten first to prevent dusting.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	Wash away remainder with plenty of water.
Environmental Precautionary Measures	Collect spillage. Decontamination runoff may be washed to drains with large quantities of water; Due care must still be exercised to avoid unnecessary pollution of watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away; Keep upwind.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation/dispersion. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8). Dust explosion hazard: Keep away from heat and ignition sources - No
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smoking. Take precautionary measures against static discharges.

Storage	Store in a cool, dry and well-ventilated place. Keep container tightly closed when not in use - Check regularly for spills. Protect from moisture. Keep away from heat and ignition sources. Keep away from incompatible materials (oxidising agents, alkalis).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	Australian: No specific exposure standards are available for this product. International: TWA = 5 mg/m ³ (Canada, Denmark, Indonesia, Iceland, Ireland, Poland, Malaysia, Singapore, Spain, USA); STEL = 10 mg/m ³ (Canada, Poland). For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m ³ (measured as inhalable dust). - New Zealand WES (Particulates not otherwise regulated): TWA = 10 mg/m ³ (total); TWA = 3 mg/m ³ (respirable).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	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. Ensure ventilation is adequate to maintain air concentrations below workplace exposure standards.
Personal Protection Equipment	Respiratory protection: If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Eye/face protection: Wear eye protection/face protection. Recommended: Safety glasses with side-shields; Chemical goggles. Use equipment for eye protection tested and approved under appropriate government standards. Hand protection: Handle with gloves. Recommended (full/splash contact): Impervious gloves, e.g. Nitrile rubber (Minimum layer thickness: 0.11 mm; Break through time: 480 min). Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes. The type of protective equipment must be selected according to the concentration and amount of the hazardous substance(s) at the specific workplace.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of workday. Take off contaminated clothing and wash before storage or reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Crystalline powder
Odour	Odourless
Colour	Colourless - white
pH	No Data Available
Vapour Pressure	10 Pa (@ 18.5 °C)
Relative Vapour Density	5.04 Air = 1
Boiling Point	338 °C
Melting Point	152 °C
Freezing Point	No Data Available
Solubility	1.4 g/100 mL water - Moderate 15°C
Specific Gravity	No Data Available
Flash Point	196 °C
Auto Ignition Temp	422 °C
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	230 °C

Density	1.36 g/mL
Specific Heat	No Data Available
Molecular Weight	146.141 g/mol
Net Propellant Weight	No Data Available
Octanol Water Coefficient	logPow = 0.08
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	The substance is a weak acid.
Potential for Dust Explosion	Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Combustible solid - May burn but does not ignite readily.
Reactions That Release Gases or Vapours	The substance decomposes on heating producing toxic and corrosive fumes of valeric acid and other substances. Fire may produce irritating and/or toxic fumes, including oxides of Carbon.
Release of Invisible Flammable Vapours and Gases	May ignite or explode in contact with strong oxidisers.

10. STABILITY AND REACTIVITY

General Information	Reacts with alkalis and oxidizing materials.
Chemical Stability	Stable under normal conditions of use.
Conditions to Avoid	Avoid dust formation/dispersion. Keep away from heat and ignition sources.
Materials to Avoid	Incompatible/reactive with alkalis and oxidising agents.
Hazardous Decomposition Products	The substance decomposes on heating producing toxic and corrosive fumes of valeric acid and other substances. Fire may produce irritating and/or toxic fumes, including oxides of Carbon.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Acute toxicity: The chemical is reported to have low acute toxicity via the oral, dermal and inhalation routes; However, ingestion of large amounts may cause nausea and vomiting.</p> <p>Skin corrosion/irritation: May cause skin irritation.</p> <p>Eye damage/irritation: Causes serious eye irritation.</p> <p>Respiratory/skin sensitisation: Not a skin sensitiser.</p> <p>Germ cell mutagenicity: The chemical is reported to be non-mutagenic.</p> <p>Carcinogenicity: The chemical is not carcinogenic.</p> <p>Reproductive toxicity: The chemical is not a reproductive or developmental toxicant.</p> <p>STOT - single exposure: May cause respiratory (mucosal) irritation.</p> <p>STOT - repeated exposure: The chemical is of low chronic toxicity via the oral and inhalation routes.</p> <p>Aspiration toxicity: No information available.</p>
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Acute

Ingestion	Acute toxicity (Oral): - LD50, Rats: 5,560 mg/kg bw - LD50, Mice: 1,900 mg/kg bw
Other	Acute toxicity (Dermal): - LD50: >2,000 mg/kg bw
Inhalation	Acute toxicity (Inhalation): - LC50, Rats: >7.7 mg/L
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.
Mobility	No information available.
Environmental Fate	Prevent entry into drains and waterways.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company; Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Special Precautions for Land Fill	Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	ADIPIIC ACID
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	ADIPIIC ACID
Class	No Data Available
Subsidiary Risk(s)	No Data Available

	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	ADIPIC ACID
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	ADIPIC ACID
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	ADIPIC ACID
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No

Air Transport

IATA DGR

Proper Shipping Name	ADIPIC ACID
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information

No Data Available

Poisons Schedule (Aust)

Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code

HSR002761

National/Regional Inventories

Australia (AICS)

Listed

Canada (DSL)

Not Determined

Canada (NDSL)

Not Determined

China (IECSC)

Not Determined

Europe (EINECS)

Not Determined

Europe (REACH)

Not Determined

Japan (ENCS/METI)

Not Determined

Korea (KECI)

Not Determined

Malaysia (EHS Register)

Not Determined

New Zealand (NZIoC)

Listed

Philippines (PICCS)

Not Determined

Switzerland (Giftliste 1)

Not Determined

Switzerland (Inventory of Notified Substances)

Not Determined

Taiwan (NCSR)

Not Determined

USA (TSCA)

Not Determined

16. OTHER INFORMATION

Related Product Codes

ADACID1000, ADACID1001, ADACID1002, ADACID1003, ADACID1004, ADACID1005, ADACID1006, ADACID1007, ADACID1008, ADACID1009, ADACID1010, ADACID1011, ADACID1012, ADACID1013, ADACID1014, ADACID1015, ADACID1016, ADACID1017, ADACID1018, ADACID1019, ADACID1020, ADACID1021, ADACID1022, ADACID1023, ADACID1024, ADACID1025, ADACID1026, ADACID1027, ADACID1028, ADACID1029, ADACID1030, ADACID1031,

ADACID1032, ADACID1033, ADACID1034, ADACID1035, ADACID1036, ADACID1037, ADACID1038, ADACID1039, ADACID1050, ADACID1500, ADACID1501, ADACID1502, ADACID1600, ADACID1601, ADACID1800, ADACID2000, ADACID2100, ADACID2101, ADACID2200, ADACID2300, ADACID2500, ADACID3000, ADACID3001, ADACID3002, ADACID3100, ADACID3200, ADACID3300, ADACID3500, ADACID3502, ADACID3600, ADACID3700, ADACID3900, ADACID3905, ADACID4000, ADACID4001, ADACID4200, ADACID4500, ADACID4600, ADACID4700, ADACID4800, ADACID4900, ADACID5000, ADACID5500, ADACID5600, ADACID6000, ADACID6500, ADACID7000, ADACID7100, ADACID8000, ADACID8100, ADACID8200, ADACID8300, ADACID8400, ADACID9000, ADACID9100

Revision

3

Revision Date

21 Jan 2018

Key/Legend

< Less Than

> Greater Than

AICS Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square Centimetres

CO₂ Carbon Dioxide

COD Chemical Oxygen Demand

deg C (°C) Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Farenheit

g Grams

g/cm³ Grams per Cubic Centimetre

g/l Grams per Litre

HSNO Hazardous Substance and New Organism

IDLH Immediately Dangerous to Life and Health

immiscible Liquids are insoluable in each other.

inHg Inch of Mercury

inH₂O Inch of Water

K Kelvin

kg Kilogram

kg/m³ Kilograms per Cubic Metre

lb Pound

LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

ltr or **L** Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH₂O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight