



SAFETY DATA SHEET ADIPIIC ACID REVISION 4, DATE 24 APR 21

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	C ₆ H ₁₀ O ₄
Chemical Name	Hexanedioic acid
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox 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.
		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 **6.4A** Substances that are irritating to the eye

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 give a glass of water to drink. Do not induce vomiting. Get immediate medical

advice/attention. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Never give anything by mouth to an unconscious person.

Eye	IF IN EYES: Immediately flush eyes with running 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 it 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	In all cases of doubt, or when symptoms persist, seek medical attention. 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.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction.
Fire and Explosion Hazard	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Hazardous Products of Combustion	Fire may produce irritating and/or toxic gases, including oxides of Carbon, acrid smoke and fumes.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	196 °C
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	>400 °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 generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers for disposal (see SECTION 13). *Use non-sparking tools.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	After cleaning, flush away any residual traces with water.
Environmental Precautionary Measures	Avoid discharge into the environment. If contamination of sewers or waterways has occurred, advise local emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
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. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). WARNING: May form combustible dust concentrations in air! Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use - Check regularly for spills. Protect from moisture/humidity. Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container. *Not suitable: Steel, Aluminium and its alloys.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. 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 classified): TWA = 10 mg/m ³ ; TWA = 3 mg/m ³ (respirable dust).
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: In case of inadequate ventilation, wear respiratory protection. Recommended: Respiratory protective device with a particle filter (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses. - Hand protection: Handle with gloves. Recommended: Impermeable protective gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Protective clothing. Impermeable boots. *Thermal hazards: Wear suitable protective clothing to prevent heat.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands after use. Take off contaminated clothing and wash it before reuse. Remove contaminated clothing and protective equipment before entering eating areas. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

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	>400 °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	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
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.
Reactions That Release Gases or Vapours	Fire/decomposition may produce irritating and/or toxic gases, including oxides of Carbon, acrid smoke and fumes.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	Reacts with alkalis and oxidizing materials. Corrosive to mild steel at room temperature.
Chemical Stability	The substance is stable under normal storage and handling conditions.
Conditions to Avoid	Avoid generating dust. Keep away from heat and ignition sources.
Materials to Avoid	Incompatible/reactive with alkalis and oxidising agents.
Hazardous Decomposition Products	Fire/decomposition may produce irritating and/or toxic gases, including oxides of Carbon, acrid smoke and fumes.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION**General Information**

- Acute toxicity: The chemical is reported to have low acute toxicity via the oral, dermal and inhalation routes. Ingestion of large amounts may cause nausea and vomiting.
- Skin corrosion/irritation: May cause skin irritation. The chemical is reported to be a slight skin irritant in rabbits.
- Eye damage/irritation: Causes serious eye irritation.
- Respiratory/skin sensitisation: The chemical is not a skin sensitiser.
- Germ cell mutagenicity: The chemical is reported to be non-mutagenic.
- Carcinogenicity: The chemical is not carcinogenic.
- Reproductive toxicity: The chemical is not a reproductive or developmental toxicant.
- STOT (single exposure): Breathing in dust may result in respiratory irritation. Due to the acidic character of the substance, a local irritation potential is plausible.
- STOT (repeated exposure): The chemical is of low chronic toxicity via the oral and inhalation routes.
- Aspiration toxicity: No information available.

Acute**Ingestion**

- Acute toxicity (Oral):
- LD50, Rat: 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 (4 h)

Carcinogen Category

None

12. ECOLOGICAL INFORMATION**Ecotoxicity**

- Aquatic toxicity:
- LC50, Crustacea (Daphnia): 46 mg/L (48 h) [OECD 202].

Persistence/Degradability

Inherently biodegradable in water. Readily biodegradable in soil.

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	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
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

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
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

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
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

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
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

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
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

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
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

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)
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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	HSR002503 HSR002761 (Revoked)
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National/Regional Inventories

Australia (AIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined

China (IECSC)	Not Determined
Europe (EINECS)	204-673-3
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, ADACID2250, ADACID2300, ADACID2500, ADACID2600, ADACID3000, ADACID3001, ADACID3002, ADACID3100, ADACID3200, ADACID3300, ADACID3500, ADACID3502, ADACID3600, ADACID3700, ADACID3900, ADACID3905, ADACID3906, ADACID4000, ADACID4001, ADACID4200, ADACID4500, ADACID4600, ADACID4700, ADACID4800, ADACID4900, ADACID5000, ADACID5100, ADACID5500, ADACID5600, ADACID6000, ADACID6500, ADACID7000, ADACID7100, ADACID8000, ADACID8100, ADACID8200, ADACID8300, ADACID8400, ADACID8500, ADACID8600, ADACID9000, ADACID9100, ADACID9200, ADACID9205, ADACID9300, ADACID9305
Revision	4
Revision Date	24 Apr 2021
Key/Legend	<p>< Less Than</p> <p>> Greater Than</p> <p>AICS Australian Inventory of Chemical Substances</p> <p>atm Atmosphere</p> <p>CAS Chemical Abstracts Service (Registry Number)</p> <p>cm² Square Centimetres</p> <p>CO₂ Carbon Dioxide</p> <p>COD Chemical Oxygen Demand</p> <p>deg C (°C) Degrees Celcius</p> <p>EPA (New Zealand) Environmental Protection Authority of New Zealand</p> <p>deg F (°F) Degrees Fahrenheit</p> <p>g Grams</p> <p>g/cm³ Grams per Cubic Centimetre</p> <p>g/l Grams per Litre</p> <p>HSNO Hazardous Substance and New Organism</p> <p>IDLH Immediately Dangerous to Life and Health</p> <p>immiscible Liquids are insoluable in each other.</p> <p>inHg Inch of Mercury</p> <p>inH₂O Inch of Water</p>

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