1. IDENTIFICATION

Product Name	**Ammonium Sulphate**
Other Names	Ammonium sulfate (2:1); Diammonium sulfate; Diammonium sulphate
Uses	Fertiliser uses; Laboratory use; Food additive; Manufacture of substances.
Chemical Family	Inorganic salt
Chemical Formula	(NH4)2SO4
Chemical Name	Sulfuric acid, diammonium salt
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	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Signal Word	None

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Ammonium sulphate	(NH4)2SO4	7783-20-2	<=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 unless directed to do so by medical personnel. Get medical advice/attention if large amounts are ingested or if you feel unwell. 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.
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. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
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	Non-combustible; Product itself does not burn.
Extinguishing Media	If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and Explosion Hazard	Flammable ammonia gas may be released in a fire.

Hazardous Products of Combustion	Fire may produce irritating and/or toxic gases, including Ammonia, Nitrogen oxides (NOx), Sulphur oxides (SOx).
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	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Sweep/shovel up and place it into suitable containers for later disposal (see SECTION 13). *Vacuuming or wet sweeping may be used to avoid dust dispersal.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	Rinse away residues with water.
Environmental Precautionary Measures	Prevent entry into drains and waterways.
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. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Protect against physical damage. Protect against moisture. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container. *Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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/m3 (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3 (total); TWA = 3 mg/m3 (respirable). - OSHA PEL (Particulates not otherwise regulated): TWA = 15 mg/m3 (total); TWA = 5 mg/m3 (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.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation or with high concentrations, wear respiratory protection. Recommended: Dust mask/particulate respirator. For emergencies or instances where the exposure levels are not

	known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen deficient atmospheres. Use respirators and components tested and approved under appropriate government standards (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side-shields. Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Use equipment for eye protection tested and approved under appropriate government standards. - Hand protection: Handle with gloves. Recommended: Wear impervious gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Wear impervious protective clothing, incl. boots, lab coat, apron or coveralls, as appropriate. 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 Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder, flake, crystalline, granular
Odour	Odourless
Colour	White
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	>280 °C (decomposes)
Freezing Point	No Data Available
Solubility	Soluble in water
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1.77 g/cm3
Specific Heat	No Data Available
Molecular Weight	132.14 g/mol
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
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	No information available.
Potential for Dust Explosion	No information available.
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	Non-combustible; Product itself does not burn.
Reactions That Release Gases or Vapours	Fire may produce irritating and/or toxic gases, including Ammonia, Nitrogen oxides (NOx), Sulphur oxides (SOx).
Release of Invisible Flammable Vapours and Gases	Flammable ammonia gas may be released in a fire.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Stable under recommended storage conditions.
Conditions to Avoid	Avoid dust formation.
Materials to Avoid	Incompatible/reactive with strong bases, strong oxidising agents.
Hazardous Decomposition Products	Fire or heat will produce irritating and/or toxic fumes, including Ammonia, Nitrogen oxides (NOx), Sulphur oxides (SOx).
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	Information on possible routes of exposure: - Ingestion: Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhoea. It presents little toxicity unless large amounts are ingested, in which case, vomiting and diarrhoea are likely. - Eye contact: May cause eye irritation, redness, and pain. - Skin contact: May cause skin irritation. Symptoms include redness, itching, and pain. - Inhalation: May cause irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. Chronic effects: No information available.
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rat: 4,250 mg/kg [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	Due to the inorganic nature of the substance standard biodegradation testing systems are not applicable. In aqueous solution, ammonium sulfate is completely dissociated into the ammonium ion (NH_4^+) and the sulfate anion (SO_4^{2-}). Hydrolysis of ammonium sulfate does not occur.
Mobility	No information available.
Environmental Fate	Prevent entry into drains and waterways.
Bioaccumulation Potential	Based on the high water solubility and the ionic nature, ammonium sulfate is not expected to adsorb or bioaccumulate to a significant extent.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

Dispose of contents/container in accordance with local/regional/national regulations.

General Information

Special Precautions for Land Fill Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	Ammonium Sulphate
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	Ammonium Sulphate
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	Ammonium Sulphate
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	Ammonium Sulphate
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	Ammonium Sulphate
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	Ammonium Sulphate
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)

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 HSR002770 (Revoked)

National/Regional Inventories

Australia (AIIC)	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

AMSULB0005, AMSULB0017, AMSULB0400, AMSULB0500, AMSULB0600, AMSULB1000, AMSULB1001, AMSULB1002, AMSULB1003, AMSULB1004, AMSULB1800, AMSULB2020, AMSULB3100, AMSULB3101, AMSULB4500, AMSULB4501, AMSULB7300, AMSULB8000, AMSULB9000, AMSULG0001, AMSULG0003, AMSULG0005, AMSULG0007, AMSULG0010, AMSULG0015, AMSULG0016, AMSULG0017, AMSULG0018, AMSULG0020, AMSULG0030, AMSULG0050, AMSULG0098, AMSULG0400, AMSULG0600, AMSULG0700, AMSULG0701, AMSULG0702, AMSULG0720, AMSULG0721, AMSULG1000, AMSULG1001, AMSULG1002, AMSULG1003, AMSULG1004, AMSULG1005, AMSULG1017, AMSULG1020, AMSULG1023, AMSULG1042, AMSULG1044, AMSULG1046, AMSULG1062, AMSULG2010, AMSULG2020, AMSULG2021, AMSULG2022, AMSULG2600, AMSULG2605, AMSULG2800, AMSULG3200, AMSULG3300, AMSULG3400, AMSULG3405, AMSULG3600, AMSULG5300, AMSULG5400, AMSULG6000, AMSULG6001, AMSULG6015, AMSULG9000, AMSULP0001, AMSULP0003, AMSULP0005, AMSULP0007, AMSULP0008, AMSULP0010, AMSULP0012, AMSULP0013, AMSULP0020, AMSULP0042, AMSULP0050, AMSULP0071, AMSULP0075, AMSULP0076, AMSULP0085, AMSULP0087, AMSULP0088, AMSULP0090, AMSULP0093, AMSULP0094, AMSULP0095, AMSULP0096, AMSULP0098, AMSULP0099, AMSULP0142, AMSULP0400, AMSULP0500, AMSULP0595, AMSULP0599, AMSULP0600, AMSULP0601, AMSULP0604, AMSULP0605, AMSULP0606, AMSULP0607, AMSULP0700, AMSULP0800, AMSULP0900, AMSULP0901, AMSULP1000, AMSULP1001, AMSULP1002, AMSULP1003, AMSULP1004, AMSULP1005, AMSULP1006, AMSULP1007, AMSULP1008, AMSULP1009, AMSULP1010, AMSULP1011, AMSULP1013, AMSULP1014, AMSULP1015, AMSULP1016, AMSULP1017, AMSULP1018, AMSULP1019, AMSULP1020, AMSULP1021, AMSULP1022, AMSULP1023, AMSULP1024, AMSULP1025, AMSULP1026, AMSULP1027, AMSULP1028, AMSULP1029, AMSULP1030, AMSULP1031, AMSULP1032, AMSULP1033, AMSULP1034, AMSULP1035, AMSULP1036, AMSULP1037, AMSULP1038, AMSULP1039, AMSULP1040, AMSULP1041, AMSULP1042, AMSULP1043, AMSULP1044, AMSULP1045, AMSULP1046, AMSULP1047, AMSULP1048, AMSULP1049, AMSULP1050, AMSULP1051, AMSULP1052, AMSULP1053, AMSULP1054, AMSULP1055, AMSULP1060, AMSULP1062, AMSULP1075, AMSULP1095, AMSULP1099, AMSULP1100, AMSULP1101, AMSULP1102, AMSULP1103, AMSULP1104, AMSULP1105, AMSULP1107, AMSULP1109, AMSULP1110, AMSULP1111, AMSULP1113, AMSULP1114, AMSULP1115, AMSULP1117, AMSULP1118, AMSULP1119, AMSULP1120, AMSULP1124, AMSULP1125, AMSULP1126, AMSULP1127, AMSULP1128, AMSULP1129, AMSULP1132, AMSULP1140, AMSULP1142, AMSULP1144, AMSULP1146, AMSULP1147, AMSULP1148, AMSULP1149, AMSULP1150, AMSULP1151, AMSULP1153,

AMSULP1155, AMSULP1156, AMSULP1159, AMSULP1169, AMSULP1170, AMSULP1200, AMSULP1201, AMSULP1250, AMSULP1253, AMSULP1256, AMSULP1300, AMSULP1301, AMSULP1400, AMSULP1401, AMSULP1500, AMSULP1600, AMSULP1601, AMSULP1700, AMSULP1701, AMSULP1800, AMSULP1801, AMSULP1802, AMSULP1803, AMSULP1804, AMSULP1805, AMSULP1806, AMSULP1807, AMSULP1808, AMSULP1809, AMSULP1810, AMSULP1811, AMSULP1812, AMSULP1813, AMSULP1814, AMSULP1815, AMSULP1816, AMSULP1817, AMSULP1818, AMSULP1819, AMSULP1820, AMSULP1830, AMSULP1900, AMSULP2000, AMSULP2001, AMSULP2005, AMSULP2010, AMSULP2011, AMSULP2012, AMSULP2013, AMSULP2015, AMSULP2018, AMSULP2019, AMSULP2020, AMSULP2021, AMSULP2022, AMSULP2025, AMSULP2026, AMSULP2030, AMSULP2035, AMSULP2100, AMSULP2101, AMSULP2200, AMSULP2201, AMSULP2300, AMSULP2400, AMSULP2500, AMSULP2501, AMSULP2600, AMSULP2601, AMSULP2602, AMSULP2700, AMSULP2701, AMSULP2702, AMSULP2800, AMSULP2801, AMSULP2802, AMSULP2900, AMSULP3000, AMSULP3001, AMSULP3002, AMSULP3003, AMSULP3004, AMSULP3100, AMSULP3101, AMSULP3200, AMSULP3300, AMSULP3400, AMSULP3405, AMSULP3500, AMSULP3501, AMSULP3504, AMSULP3505, AMSULP3506, AMSULP3507, AMSULP3508, AMSULP3509, AMSULP3510, AMSULP3515, AMSULP3517, AMSULP3525, AMSULP3900, AMSULP4000, AMSULP4500, AMSULP4501, AMSULP4600, AMSULP4700, AMSULP4800, AMSULP5000, AMSULP5100, AMSULP5200, AMSULP5300, AMSULP5400, AMSULP6000, AMSULP6001, AMSULP6100, AMSULP6300, AMSULP6500, AMSULP6600, AMSULP6800, AMSULP6900, AMSULP7000, AMSULP7200, AMSULP7300, AMSULP7400, AMSULP7500, AMSULP7501, AMSULP7505, AMSULP7600, AMSULP7700, AMSULP7701, AMSULP7800, AMSULP8000, AMSULP8001, AMSULP8100, AMSULP8500, AMSULP8600, AMSULP8700, AMSULP9000, AMSULP9500, AMSULP9501, AMSULP9502, AMSULP9503, AMSULP9600, AMSULP9700, AMSULP9800, AMSULP9900

Revision 4

Revision Date 20 Jul 2020

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 Heath 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