Material Safety Data Sheet
Nitric Acid 65-70%

1. IDENTIFICATION

Product Name	**Nitric Acid 65-70%**
Other Names	Nitric Acid 65-70%
Uses	Explosives, Decolorizer, Synthesis fibre, Nitro cellulose, DNT, MNB, Medecines
Chemical Family	No Data Available
Chemical Formula	HNO3
Chemical Name	Nitric Acid 65-70%
Product Description	No Data Available

Contact Information

Organisation	Location	Telephone	Ask For
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000	MSDS Officer
	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222	
Poisons Information Centre	Westmead NSW	1800-251525 131126	
Chemcall	Australia New Zealand	1800-127406 0800-243622 +64-4-9179888	
National Poisons Centre	New Zealand	0800-764766	

2. HAZARD IDENTIFICATION

ADG Code	Dangerous Goods according to the criteria of the Australian Dangerous Goods Code (ADG Code).	
ASCC Hazard Classification	Hazardous according to the criteria of ASCC [NOHSC:1008(2004)]	
Categories	**O**	Oxidising
	C	Corrosive
Risk Phrases	**R8**	Contact with combustible material may cause fire.
	R35	Causes severe burns.
Safety Phrases	**S23**	Do not breathe fumes/vapour.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S36	Wear suitable protective clothing.
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
HSNO Hazard Classification	6.1D; 6.9B; 8.1A; 8.2B; 8.3A; 5.1.1C	
Poisons Schedule (Aust)	6	

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The EPA (New Zealand) web site should be consulted for a full list of triggered controls and cited regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Nitric Acid	No Data Available	7697-37-2	65.00 - 70.00 %
Water	No Data Available	7732-18-5	Balance %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.

Eye Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Take care not to rinse contaminated water into the non-affected eye. Seek immediate medical attention.

Skin Remove contaminated clothing. Immediately flush affected area with plenty of water for at least 15 minutes. Seek immediate medical attention. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.

Inhaled Remove victim from exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth to mouth method. Induce artificial respiration with the aid of a pocket mask equipped with a one way valve or other proper respiratory medical device. Seek medical attention immediately.

Advice to Doctor Treat symptomatically based on judgement of doctor and individual reactions of patient.
Causes severe burns.
Material is destructive to tissues of the mucous membranes and upper respiratory tract, eyes and skin.
Inhalation may provoke the following symptoms: spasm, inflammation and edema of the bronchi.
Symptoms and signs of poisoning are: burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, pulmonary edema.
Effects may be delayed.
Large doses may cause conversion of hemoglobin to methemoglobin, producing cyanosis, marked fall in blood pressure leading to collapse, coma and possibly death.

Medical Conditions Aggravated by Exposure No Data Available

5. FIRE FIGHTING MEASURES

General Measures Clear fire area of all non-emergency personnel.
Stay upwind.
Keep out of low areas.
Eliminate ignition sources.
Move fire exposed containers from fire area if it can be done without risk.

Flammability Conditions Product is a non-flammable liquid.

Extinguishing Media Water spray, alcohol resistant foam, dry chemical or carbon dioxide. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out.

Fire and Explosion Hazard OXIDIZING! Contact with combustible material may cause fire. These substances will accelerate burning when involved in a fire.
Some will react explosively with hydrocarbons (fuels).
Some may decompose explosively when heated or involved in a fire.
Runoff may create fire or explosion hazard.

Hazardous Products of Combustion Fire may produce irritating, corrosive and/or toxic gases.

Special Fire Fighting Instructions Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.

Personal Protective Equipment Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit.

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 2R

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Eliminate all sources of ignition. Avoid accidents, clean up immediately. Increase ventilation. Ventilate closed spaces before entering them. Avoid walking through spilled product as it is slippery when spilled. Use clean, non-sparking tools and equipment. Keep upwind. Keep out of low areas. Keep combustibles (wood, paper, oil, etc.) away from spilled material.
Clean Up Procedures	Dike far ahead of spill for later disposal. Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated, collect the material and transfer to a suitable, labelled chemical waste container and dispose of promptly as hazardous waste. Never return spills to original containers for re-use.
Containment	Stop leak if safe to do so.
Decontamination	Neutralize spill area and washings with soda ash or lime.
Environmental Precautionary Measures	Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the clean up should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Keep away from clothing and other combustible materials. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use caution when combining with water; DO NOT add water to acid, ALWAYS add acid to water while stirring to prevent release of heat, steam and fumes.
Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Keep away from heat and sources of ignition. Do not store near combustible materials. This product has a UN classification of 2031, Dangerous Goods Class 8 (Corrosive), and Subsidiary Risk 5.1 (Oxidiser) according to the Australian Code for the Transport of Dangerous Goods By Road by Road and Rail.
Container	Store in original packaging as approved by manufacturer. Do not store in metal containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	The following exposure standard has been established by The Australian Safety and Compensation Council (ASCC); Product Name: Nitric Acid. CAS number: 7697-37-2 TWA = 2ppm (5.2mg/m3) STEL = 4ppm (10mg/m3) NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Peak limitation is a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes. These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.
Exposure Limits	No Data Available
Biological Limits	No information available on biological limit values for this product.

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. Adequate ventilation should be provided so that exposure limits are not exceeded.
Personal Protection Equipment	RESPIRATOR: Where risk shows air purifying respirators are appropriate, use a full face respirator with multi purpose type ABEK respirator cartridges (AS1715/1716). EYES: Tightly fitting safety goggles with face shield. (AS1336/1337). HANDS: Elbow length impervious gloves (AS2161). CLOTHING: Chemical-resistant coveralls, splash apron and safety footwear (AS3765/2210).
Work Hygienic Practices	Provide eyewash station and safety shower. Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Launder contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Irritating
Colour	Colourless or light yellow
pH	< 1 @ 20 deg C
Vapour Pressure	1.68mmHg, 2/2 hPa (as 65%) (@ 20 °C)
Relative Vapour Density	2.2
Boiling/Melting Point	120 (as 67%) °C
Solubility	Completely Soluble
Freezing Point	-33.5 (as 67%) °C
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	1.40 g/cm3 (as 67%)
Specific Heat	No Data Available
Molecular Weight	63.01
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	0.746 cP (@ 25 °C)
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	Odour threshold: 0.29ppm Melting / freezing point: -29.1 as 65%; -35.9 as 68%; -41.0 as 70% Initial boiling point range: 119.6 as 65%; 120.05 as 68%; 119.9 as 70% Vapour Pressue: 3.0mmHG, 4.0hPa, as 70%
Potential for Dust Explosion	Product is a liquid.
Fast or Intensely Burning Characteristics	OXIDIZING! Contact with combustible material may cause fire. These substances will accelerate burning when involved in a fire.

	Some will react explosively with hydrocarbons (fuels). Some may decompose explosively when heated or involved in a fire. Runoff may create fire or explosion hazard.
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	No Data Available
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

General Information	Strong oxidider. Non Flammable liquid.
Chemical Stability	Decomposes on heating. Material is stable under normal conditions.
Conditions to Avoid	Reacts violently with strong alkaline substances. This product may react with reducing agents. Do not mix with other chemicals. Avoid heat. Exposure to light.
Materials to Avoid	Incompatible with bases. Alcohols. Combustible material. This product may react with reducing agents. May be corrosive to metals. On contact with water an exothermic reaction may occur emitting steam, heat and toxic fumes.
Hazardous Decomposition Products	Nitrogen oxides (NOx). May decompose upon heating to produce corrosive and/or toxic fumes.
Hazardous Polymerisation	Hazardous polymerization does not occur

11. TOXICOLOGICAL INFORMATION

General Information	Inhalation LC50 Rat 4 hrs: 67 ppm Acute Inhalation LC50 Rat: 65 mg/l 4.00 Hoursd Acute Inhalation LC50 Rat: 96.3 mg/l estimated Acute effects: Strongly corrosive. May cause deep tissue damage. Vapors are corrosive. After some hours, injured persons may develop serious shortness of breath and lung edema. Symptoms and signs of poisoning are: burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, pulmonary edema. Large doses may cause conversion of hemoglobin to methemoglobin, producing cyanosis, marked fall in blood pressure leading to collapse, coma and possibly death. Symptoms may be delayed.
EyeIrritant	Causes severe burns. Material is destructive to tissues of the eyes and skin.
Ingestion	Causes severe burns. Material is destructive to tissues of the mucous membranes. Symptoms and signs of poisoning are: burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, pulmonary edema.
Inhalation	Causes severe burns. Material is destructive to tissues of the mucous membranes and upper respiratory tract. Inhalation may provoke the following symptoms: spasm, inflammation and edema of the bronchi.
SkinIrritant	Causes severe burns. Material is destructive to skin.
Carcinogen Category	0

12. ECOLOGICAL INFORMATION

Ecotoxicity	Fish: LC50 48hr: Asterias rubens / Starfish: 100 ~ 300 mg/L The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Persistence/Degradability	log Kow - 2.3 (25 deg C) Expected to be readily biodegradable
Mobility	No Data Available
Environmental Fate	Do NOT let product reach waterways, drains and sewers.
Bioaccumulation Potential	No Data Available
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice. Incinerate at an approved site following all local regulations. Waste codes D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

14. TRANSPORT INFORMATION

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

Air

IATA

Proper Shipping Name	NITRIC ACID other than red fuming, with at least 65% but not more than 70% nitric acid
Class	8 Corrosive Substances
Subsidiary Risk(s)	5.1 Oxidising Substances
UN Number	2031
Hazchem	2R
Pack Group	II
Special Provision	A1

Land

Australia: ADG

Proper Shipping Name	NITRIC ACID other than red fuming, with at least 65% but not more than 70% nitric acid
Class	8 Corrosive Substances
Subsidiary Risk(s)	5.1 Oxidising Substances
EPG	40 Toxic And/Or Corrosive Substances Non-Combustible - Water Reactive
UN Number	2031
Hazchem	2R
Pack Group	II
Special Provision	No Data Available

New Zealand: NZS5433

Proper Shipping Name	NITRIC ACID other than red fuming, with at least 65% but not more than 70% nitric acid
Class	8 Corrosive Substances
Subsidiary Risk(s)	5.1 Oxidising Substances
EPG	40 Toxic And/Or Corrosive Substances Non-Combustible - Water Reactive
UN Number	2031
Hazchem	2R
Pack Group	II
Special Provision	No Data Available

United States of America: US DOT

Proper Shipping Name	NITRIC ACID other than red fuming, with at least 65% but not more than 70% nitric acid
Class	8 Corrosive Substances
Subsidiary Risk(s)	5.1 Oxidising Substances
ERG	157 Substances - Toxic and/or Corrosive (Non-Combustible / Water-Sensitive)
UN Number	2031
Hazchem	2R
Pack Group	II
Special Provision	No Data Available

Sea

IMDG

Proper Shipping Name	NITRIC ACID other than red fuming, with at least 65% but not more than 70% nitric acid
Class	8 Corrosive Substances
Subsidiary Risk(s)	5.1 Oxidising Substances
UN Number	2031
Hazchem	2R
Pack Group	II
Special Provision	No Data Available
EMS	FA,SQ
Marine Pollutant	No

15. REGULATORY INFORMATION

General Information No Data Available

EPA (New Zealand)

Hazardous Substances and New Organisms Act (HSNO)

Approval Code: HSR100763

Poisons Schedule (Aust) 6

AICS Name Nitric Acid

16. OTHER INFORMATION

Related Product Codes NIACIB2000, NIACIB6500, NIACIB9800, NIACID0100, NIACID0200, NIACID0500, NIACID0700, NIACID1000, NIACID1001, NIACID1002, NIACID1003, NIACID1004, NIACID1005, NIACID1006, NIACID1007, NIACID1008, NIACID1009, NIACID1010, NIACID1011, NIACID1012, NIACID1013, NIACID1014, NIACID1015, NIACID1016, NIACID1017, NIACID1018, NIACID1019, NIACID1020, NIACID1021, NIACID1022, NIACID1023, NIACID1100,

NIACID1101, NIACID1200, NIACID1400, NIACID2000, NIACID2001, NIACID5000, NIACID5500, NIACID6100, NIACID6300, NIACID6400, NIACID6500, NIACID6600, NIACID6700, NIACID7000, NIACID7100, NIACID7200, NIACID7500, NIACID7700, NIACID7800, NIACID8000, NIACID8100, NIACID8200, NIACID8500, NIACID8900, NIACID9000, NIACID9100, NIACID9200, NIACID9300, NIACID9400, NIACID9500, NIACID9501, NIACID9600, NIACID9700, NIACID9800, NIACID9900, NIACID9801, NIACID1111, NIACID9802, NIACID6801, NIACID1828, NIACID6828, NIACID0101, NIACID0128, NIACID1110, NIACID6511, NIACID1150, NIACID6501, NIACID5501, NIACID0129, NIACID6510, NIACID7001, NIACID1151, NIACID6512, NIACID9810, NIACID6513, NIACID5502, NIACID6514, NIACID1152, NIACID5513, NIACID5510, NIACID1153, NIACID5550, NIACID5512, NIACID5514, NIACID5503, NIACID9701

Revision 2

Revision Date 15 Feb 2012

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
torr Millimetre of Mercury
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight