SULPHURIC ACID 98%

Material Safety Data Sheet
Issue Date: 01-Sep-2014

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
SULPHURIC ACID 98%

STATEMENT OF HAZARDOUS NATURE
Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.

PROPER SHIPPING NAME
SULPHURIC ACID

PRODUCT USE
The manufacture of super phosphate fertiliser, inorganic and petro-chemicals, explosives and pigments. Component of heavy duty metal cleaners, pickles. In manufacture of rayon, cellulose film. As battery electrolyte and also in electroplating processes. pH control additive. Used as per manufacturers directions.

SUPPLIER

Company: Jasol
Address:
105 Rutherford Street
Christchurch,
New Zealand
Telephone: +64 3 384 4433
Emergency Tel: 0800 243 622
Fax: +64 3 384 4431
Email: jasolnzorders@gwf.com.au

Company: Jasol
Address:
81 Leonard Road
Penrose
Auckland,
New Zealand
Telephone: +64 9 580 2105
Emergency Tel: 0800 243 622
Fax: +64 9 581 2136

Section 2 - HAZARDS IDENTIFICATION

GHS Classification
Acute Aquatic Hazard Category 3
Acute Toxicity (Inhalation) Category 2
Carcinogen Category 1B
Metal Corrosion Category 1
Serious Eye Damage Category 1
Skin Corrosion/Irritation Category 1B

EMERGENCY OVERVIEW

HAZARD
DANGER
Determined using GHS/HSNO criteria:
6.1B 6.7A 8.1A 8.2B 8.3A 9.1C
Fatal if inhaled
May cause cancer by inhalation
May be corrosive to metals
Causes severe skin burns and eye damage
Causes serious eye damage
Harmful to aquatic life

PRECAUTIONARY STATEMENTS

Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep only in original container.
Do not breathe dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
Wear respiratory protection.

Response
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment is urgent (see MSDS).
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

Storage
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Store in corrosive resistant container or with a resistant inner liner.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sulfuric acid	7664-93-9	98

Section 4 - FIRST AID MEASURES

NEW ZEALAND POISONS INFORMATION CENTRE 0800 POISON (0800 764 766)
NZ EMERGENCY SERVICES: 111

SWALLOWED
• For advice, contact a Poisons Information Centre or a doctor at once.
• Urgent hospital treatment is likely to be needed.
• If swallowed 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.

EYE
■ If this product comes in contact with the eyes:
• Immediately hold eyelids apart and flush the eye continuously with running water.
• Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
• Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
• Transport to hospital or doctor without delay.

SKIN
■ If skin or hair contact occurs:
• Immediately flush body and clothes with large amounts of water, using safety shower if available.
• Quickly remove all contaminated clothing, including footwear.
• Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
• Transport to hospital, or doctor.

INHALED
• If fumes or combustion products are inhaled remove from contaminated area.
• Lay patient down. Keep warm and rested.
• Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
• Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
• Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
• Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
• As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
• Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

NOTES TO PHYSICIAN
■ For acute or short term repeated exposures to strong acids:
• Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
• Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
• Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
• Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the desiccating action of the acid on proteins in specific tissues.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
• Water spray or fog.
• Foam.
• Dry chemical powder.
• BCF (where regulations permit).

FIRE/EXPLOSION HAZARD
• Non combustible.
• Not considered to be a significant fire risk.
• Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
• Heating may cause expansion or decomposition leading to violent rupture of containers.
Decomposition may produce toxic fumes of: sulfur oxides (SOx).

FIRE INCOMPATIBILITY
■ None known.

PERSONAL PROTECTION

Glasses:	Gloves:	Respirator:
Full face- shield.	1.NATURAL RUBBER 2.NEOPRENE	Type E- P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
• Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
• Check regularly for spills and leaks.
• Clean up all spills immediately.
• Avoid breathing vapours and contact with skin and eyes.
• Control personal contact by using protective equipment.
• Contain and absorb spill with sand, earth, inert material or vermiculite.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
• DO NOT allow clothing wet with material to stay in contact with skin.
• Avoid all personal contact, including inhalation.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material.

SUITABLE CONTAINER
• DO NOT use aluminium or galvanised containers.
• Check regularly for spills and leaks.
• Lined metal can, lined metal pail/ can.
• Plastic pail.
• Polyliner drum.
• Packing as recommended by manufacturer.
For low viscosity materials
• Drums and jerricans must be of the non-removable head type.
• Where a can is to be used as an inner package, the can must have a screwed enclosure. <</>.

STORAGE REQUIREMENTS
• Store in original containers.
• Keep containers securely sealed.
• Store in a cool, dry, well-ventilated area.
• Store away from incompatible materials and foodstuff containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA mg/m³	Notes
New Zealand Workplace Exposure Standards (WES)	sulfuric acid (Sulphuric acid)	1	A2 CARCINOGEN

PERSONAL PROTECTION

RESPIRATOR
Type E-P Filter of sufficient capacity

EYE
- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles. Whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.

HANDS/FEET
- Elbow length PVC gloves.
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity.

OTHER
- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.

ENGINEERING CONTROLS
■ Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Colourless, oily, dense, HIGHLYCORROSIVE liquid. Faint acid odour. Material is a powerful oxidising and dehydrating agent causing rapid human tissue destruction on contact. Concentrated acid is very exothermic (generates heat) when mixed with water. DANGER: Adding water to acid will cause violent steam explosion, scattering corrosive acid. Always add acid slowly to water. Mixes with water and alcohol in all proportions. Available in technical, pure and analytical grades

PHYSICAL PROPERTIES
Liquid.
Mixes with water.
Corrosive.
Acid.
Toxic or noxious vapours/gas.

State	Liquid	Molecular Weight	98.07
Melting Range (℃)	3- 10	Viscosity	Not Available
Boiling Range (℃)	315- 338	Solubility in water (g/L)	Miscible
Flash Point (℃)	Not Applicable	pH (1% solution)	1
Decomposition Temp (℃)	Not Available	pH (as supplied)	0.9
Auto-ignition Temp (℃)	Not applicable	Vapour Pressure (kPa)	0.133 @ 146C
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	1.6- 1.84 @ 15
Lower Explosive Limit (%)	Not applicable	Relative Vapour Density (air=1)	3.40
Volatile Component (%vol)	Not available.	Evaporation Rate	Non Vol. @ 38C

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY
- Contact with alkaline material liberates heat.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.
■ The material can produce severe chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.

EYE
■ When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
■ Direct eye contact with acid corrosives may produce pain, lachrymation, photophobia and burns. Mild burns of the epithelia generally recover rapidly and completely.

SKIN
■ The material can produce severe chemical burns following direct contact with the skin.

CHRONIC HEALTH EFFECTS
■ Repeated or prolonged exposure to acids may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.
Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Occupational exposure to strong inorganic acid mists containing sulfuric acid is designated by IARC to be carcinogenic, increased risk of laryngeal cancer being seen with chronic exposures. Repeated minor exposures to mists can cause erosion of teeth and inflammation of the upper respiratory tract leading to chronic bronchitis.

TOXICITY AND IRRITATION
■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.
WARNING: For inhalation exposure ONLY: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS
The International Agency for Research on Cancer (IARC) has classified occupational exposures to respirable (<5 um) crystalline silica as being carcinogenic to humans . This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite.

Section 12 - ECOLOGICAL INFORMATION

sulfuric acid 48 hr EC50 (42.5) mg/L Aesop shrimp Crustacea Source:

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
sulfuric acid			LOW	

Section 13 - DISPOSAL CONSIDERATIONS

• Recycle where possible
Otherwise ensure that:
• licenced contractors dispose of the product and its container.
• disposal occurs at a licenced facility.

Section 14 - TRANSPORTATION INFORMATION

Labels Required: CORROSIVE

HAZCHEM:
2P

Land Transport UNDG:

Class or division:	8	Subsidiary risk:	None
UN No.:	1830	UN packing group:	II

Shipping Name: SULPHURIC ACID with more than 51% acid

Air Transport IATA:

ICAO/IATA Class:	8	ICAO/IATA Subrisk:	None
UN/ID Number:	1830	Packing Group:	II
Special provisions:	None		

Shipping Name: SULPHURIC ACID

Maritime Transport IMDG:

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	1830	Packing Group:	II
EMS Number:	F- A , S- B	Special provisions:	None
Limited Quantities:	1 L		

Shipping Name: SULPHURIC ACID with more than 51% acid

Section 15 - REGULATORY INFORMATION

REGULATIONS
Regulations for ingredients

sulfuric acid (CAS: 7664-93-9) is found on the following regulatory lists;
"GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","International Air Transport Association (IATA) Dangerous Goods Regulations","International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List","International Council of Chemical Associations (ICCA) - High Production Volume List","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data","New Zealand Hazardous Substances and New Organisms (HSNO) Act - Scheduled Toxic Substances","New Zealand Inventory of Chemicals (NZIoC)","New Zealand Workplace Exposure Standards (WES)","OECD Representative List of High Production Volume (HPV) Chemicals","United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II",
"United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control - Table II"

No data for Sulphuric Acid 98%

Specific advice on controls required for materials used in New Zealand can be found at http://www.ermanz.govt.nz/search/registers.html

Section 16 - OTHER INFORMATION

NEW ZEALAND POISONS INFORMATION CENTRE: 0800 POISON (0800 764 766)
NZ EMERGENCYSERVICES:111
Emergency response Number 0800 243 622
Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the SDS Classification committee using a valuable literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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