MATERIAL SAFETY DATA SHEET
SDS/MSDS

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
SULPHURIC ACID 0.05 MOL/L (0.1N) FOR 500ML SOLUTION.

OTHER NAMES
"laboratory reagent"

PROPER SHIPPING NAME
CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(contains sulfuric acid)

PRODUCT USE
Laboratory reagent.

SUPPLIER
Bio-Chem Chemicals
5455 NicholsonRoad, Science Market
Ambala Cantt, 133001 - Haryana
+91 82952 41953
info@biofinechemical.com - www.biofinechemical.com

Section 2 - HAZARDS IDENTIFICATION

GHS Classification
Metal Corrosion Category 1

EMERGENCY OVERVIEW

HAZARD
WARNING

Determined by using GHS criteria

H290	May be corrosive to metals.

PRECAUTIONARY STATEMENTS

Prevention

Code	Phrase
P234	Keep only in original container.

Response

Code	Phrase
P390	Absorb spillage to prevent material damage.

Storage

Code	Phrase

P406	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	2.4
water	7732-18-5	>97

Section 4 - FIRST AID MEASURES

SWALLOWED
■ If poisoning occurs, contact a doctor or Poisons Information Centre.
• 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.
• Observe the patient carefully.
• Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

EYE
■ If this product comes in contact with the eyes:
• Wash out immediately with fresh 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.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN
■ If skin contact occurs:
• Immediately remove all contaminated clothing, including footwear.
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.

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.

NOTES TO PHYSICIAN
■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
• Use extinguishing media suitable for surrounding area.

FIRE FIGHTING
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves in the event of a fire.
• Prevent, by any means available, spillage from entering drains or water courses.
• Use fire fighting procedures suitable for surrounding area.

FIRE/EXPLOSION HAZARD
■ Non combustible liquid.
Heating may cause expansion or decomposition leading to violent rupture of containers.
• Reacts with metals producing flammable / explosive hydrogen gas.
Decomposes on heating and produces acrid and toxic fumes of: sulfuric acid (H2SO4) and sulfur oxides (SOx).

FIRE INCOMPATIBILITY
■ Avoid reaction with cyanides and alkalies.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
• Clean up all spills immediately.
• Avoid breathing vapours and contact with skin and eyes.
• Control personal contact with the substance, by using protective equipment.
• Contain and absorb spill with sand, earth, inert material or vermiculite.

MAJOR SPILLS
■ Minor hazard.
• Clear area of personnel.
• Alert Fire Brigade and tell them location and nature of hazard.
• Control personal contact with the substance, by using protective equipment as required.
• Prevent spillage from entering drains or water ways.

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
• Limit all unnecessary personal contact.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Avoid contact with incompatible materials.

SUITABLE CONTAINER
• Glass container is suitable for laboratory quantities.
• Polyethylene or polypropylene container.
• Packing as recommended by manufacturer.
• Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY
• Segregate from alkalies, oxidising agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.

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
India Permissible Levels of Certain Chemical Substances in Work Environment	sulfuric acid 0.5N solution (Sulphuric Acid)	1

The following materials had no OELs on our records
• water: CAS:7732- 18- 5

MATERIAL DATA
SULFURIC ACID 0.5N SOLUTION:
■ None assigned. Refer to individual constituents.

SULFURIC ACID:
■ Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat.
Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations.
NOTE: Detector tubes for sulfuric acid, measuring in excess of 1 mg/m3, are commercially available.
Based on controlled inhalation studies the TLV-TWA is thought to be protective against the significant risk of pulmonary irritation and incorporates a margin of safety so as to prevent injury to the skin and teeth seen in battery workers acclimatised to workplace concentrations of 16 mg/m3.

WATER:
■ No exposure limits set by NOHSC or ACGIH.

PERSONAL PROTECTION

RESPIRATOR
•Type E-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE
• Safety glasses with side shields; or as required,
• Chemical goggles.
• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent].

HANDS/FEET
■ Wear chemical protective gloves, e.g. PVC.
Wear safety footwear.

OTHER
• Overalls.
• Barrier cream
• Eyewash unit.

ENGINEERING CONTROLS
■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Colourless odourless acidic liquid; mixes with water.

PHYSICAL PROPERTIES
Liquid.

Mixes with water.
Corrosive.

State	Liquid	Molecular Weight	Not applicable
Melting Range (°C)	Not available	Viscosity	Not Available
Boiling Range (°C)	Not available	Solubility in water (g/L)	Miscible
Flash Point (°C)	Not applicable	pH (1% solution)	Not available
Decomposition Temp (°C)	Not available.	pH (as supplied)	Not Available
Autoignition Temp (°C)	Not available	Vapour Pressure (kPa)	Not available
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	1.05
Lower Explosive Limit (%)	Not applicable	Relative Vapour Density (air=1)	Not available
Volatile Component (%vol)	100	Evaporation Rate	Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY
• Presence of incompatible materials.
• Product is considered stable.
• Hazardous polymerisation will not occur.
For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

Health hazard summary table:

Acute toxicity	Not applicable
Skin corrosion/irritation	Not applicable
Serious eye damage/irritation	Not applicable
Respiratory or skin sensitization	Not applicable
Germ cell mutagenicity	Not applicable
Carcinogenicity	Not applicable
Reproductive toxicity	Not applicable
STOT- single exposure	Not applicable
STOT- repeated exposure	Not applicable
Aspiration hazard	Not applicable

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ Considered an unlikely route of entry in commercial/industrial environments.
■ Ingestion may result in nausea, abdominal irritation, pain and vomiting.

INHALED
■ Not normally a hazard due to non-volatile nature of product.

CHRONIC HEALTH EFFECTS
■ Principal routes of exposure are usually by skin contact and eye contact.
As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

TOXICITY AND IRRITATION
■ Not available. Refer to individual constituents.

CARCINOGEN

sulfuric acid	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	1	Carcinogenic to humans

SKIN

sulfuric acid	GESAMP/EHS Composite List - GESAMP Hazard Profiles	D1: skin irritation/corrosion	3C

Section 12 - ECOLOGICAL INFORMATION

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

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
sulfuric acid	No Data Available	No Data Available	LOW	No Data Available

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Treat and neutralise at an effluent treatment plant.
- Use soda ash or slaked lime to neutralise.

Section 14 - TRANSPORTATION INFORMATION

Labels Required: CORROSIVE

HAZCHEM:
2X

Land Transport UNDG:

Class or division:	8	Subsidiary risk:	None
UN No.:	3264	UN packing group:	III

Shipping Name:CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (contains sulfuric acid)

Air Transport IATA:

ICAO/IATA Class:	8	ICAO/IATA Subrisk:	None
UN/ID Number:	3264	Packing Group:	III
Special provisions:	A3A803		

Shipping name:CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(contains sulfuric acid)

Maritime Transport IMDG:

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	3264	Packing Group:	III
EMS Number:	F- A, S- B	Special provisions:	223 274
Limited Quantities:	5 L		

Shipping name:CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(contains sulfuric acid)

Section 15 - REGULATORY INFORMATION

REGULATIONS

Regulations for ingredients

No data for sulfuric acid 0.1N solution (CW: 4580-43)