MATERIAL SAFETY DATA SHEET #159

SULFURIC ACID SOLUTIONS, 5% -93%
SULFURIC ACID SOLUTIONS, 0.02N - 12N

Cat # LC25570, LC25580, LC25590, LC25600, LC25620, LC25640, LC25650, LC25660, LC25670, LC25680, LC25700, LC25720, LC25730, LC25740, LC25770, LC25790, LC25800, LC25830, LC25840, LC25850, LC25870, LC25880

SECTION I

LabChem Inc
200 William Pitt Way
Pittsburgh, PA 15238

revised: 7/2/96
contact: Al Beranek
phone: (412) 826-5230

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

NAME: SULFURIC ACID SOLUTIONS 5-93%, SULFURIC ACID SOLUTIONS 0.02N - 12N FAMILY: inorganic acid

DOT: Sulfuric acid: 8 UN 1830 PGII

COMPONENTS:	CAS:	FORMULA/F.WT.
(1) sulfuric acid, 0.05-80%	7664-93-9	H_2SO_4 / 98.07
(2) water, balance	7732-18-5	H_2O / 18.00

NFPA RATING (0-4): Health-3 Fire-0 Reactivity-2

SECTION III - PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling pt:	Melting pt:	Sp. gravity:	Evaporation rate:	Vapor press:	Vapor density:	pH:
n/a	n/a	1.0 - 1.7	< ether	n/a	n/a	acidic

Appearance/Odor: clear colorless liquid/odorless.

Solubility: water - soluble.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash pt: non-flammable Explosion level-lower(LEL): n/a -upper(UEL): n/a Autoignition: n/a

Extinguishing Media: dry chemical or carbon dioxide. Large fires, use water from a distance.

Firefighting: negligible fire and explosion hazard when exposed to heat or flame. Move containers, cool if possible. Do not use water directly on material. Water spray may be used to knock down corrosive vapors, avoid breathing vapors, keep upwind. May ignite combustible materials on contact. Keep run-off out of sewers and drains. Contact with metals may evolve hydrogen gas.

SECTION V - REACTIVITY DATA

Stability: stable at normal room temperatures and pressures.

Condition to Avoid: violent exothermic reactions with water and organic materials. may ignite finely divided combustible materials. Incompatibilities - explosive or violent reactions with acetone cyanohydrin, acetone and nitric acid or potassium dichromate, acrylonitrile, alcohols, hydrogen peroxide, allyl chloride, bromates and metals, bromine pentafluoride, carbides, all chlorates, chlorine trifluoride, cuprous nitride, ethylene cyanohydrin, fulminates, indane and nitric acid, iron, mercuric nitride, nitric acid and glycerides, p-nitrotoluene, pentasilver

trihydroxydiaminophosphate, perchlorates, phosphorus isocyanate picrates, sliver permanganate, sodium, sodium carbonate, toluene and nitric acid. Dangerous temperatures and pressures occur with other substances, especially organic combinations. Explosive hydrogen gas is evolved from contact with steel, other metals.

Hazardous Decomposition/Byproducts: thermal decomposition byproducts include highly toxic fumes of sulfur oxide Explosive hydrogen gas may be generated in some reactions.

Hazardous Polymerization: not known to occur.

SECTION VI - HEALTH HAZARD DATA

Toxicity: vapor or mist severe eye, mucous membrane, and skin irritant. LD50: 2140mg/Kg Oral-rat. LC50: 18mg/m3/8hr Inh-guinea pig. LCLO mist: 140ppm/3.5hr Inh-mouse; 178ppm/7hr Inh-rat; 1380ug Eye-rabbit; severe irritant.

Carcinogenicity: sulfuric acid mists-- IARC Group 1. Sulfuric acid and solutions not classified by OSHA, IARC, NTP

Exposure Limits:

OSHA-PEL:	ACGIH-TWA:	-STEL:	TLV CEILING:	IDLH:	NIOSH:
1mg/M3	1mg/M3	3mg/M3	n/a	15mg/M3	1mg/M3/ TWA

Acute Health Hazards: at 5mg/M3 concentrations, nose and throat irritation occurs, with headache, cough, increas respiratory rate, impairment of lung to ventilate. Delayed symptoms include tight chest, fluid in lungs, cyanosis (color), hypotension, bronchitis or emphysema. Skin contact may result in severe burns, blistering, pain. Eye con can result in blindness; exposure to mist leads to watering, irritation. Ingestion can cause severe burning and pain mouth, throat, abdomen. Vomiting and diarrhea of dark blood may occur; asphyxia from throat swelling. Stomach esophagus may become perforated.

Chronic Health Hazards: tracheobronchitis, dental erosion/discoloration, pneumonia, gastrointestinal disturbances occur. Skin irritation/dermatitis, conjunctivitis and lacrimation of the eye can occur.

First Aid:

Inhalation: move victim to fresh air, give artificial respiration if necessary. Maintain airway, get medical aid once.

Skin: remove contaminated clothing, wash affected area with soap and water, flush with large amounts of wat (15-20min.) until chemical is gone. Cover burns with dry sterile dressing (secure, not tight). Get medical aid at o

Eyes: flush eyes with large amounts of water, lifting upper/lower lids occasionally until all traces of the chem is gone (15-20min.). For burns apply loose non-medicated sterile bandages. Get medical aid at once.

Ingestion: give conscious victim large quantities of water to dilute acid. Do not induce vomiting. Give one oun (30ml) of milk of magnesia. Get medical aid at once.

SECTION VII - PRECAUTION FOR SAFE HANDLING AND USE

Spills or Leaks: contain if possible. Absorb with suitable inert or non-reactive material such as fly ash, cement powder, fuller's (diatomaceous) earth. May be neutralized with slaked lime, limestone, or sodium bicarbonate to a pH 7. Avoid breathing vapors, wear protective clothing, gloves. Place in labeled plastic containers for disposal, area down with water.

Disposal: dispose in accordance with Federal, State, and local regulations.

Storage and handling: store in labeled non-reactive
substances.

SECTION VIII - CONTROL MEASURES

Respiratory Protection: provide local exhaust to me
GMAGHiEP/HiEPF/SAF/SCBAF. 100mg/M3 - SAF:P
(Respirator Codes: DHEW (NIOSH) PUblication No.

Protective Clothing and Equipment: wear acid prote
shield. Provide an eye-wash fountain in the immedi

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[Note: n/a means "not applicable" or data "not av