



SECTION I : MATERIAL IDENTIFICATION & USE : SULFURIC ACID 98.5%

Material : SULFURIC ACID 98.5%

Name/Identifier : H_2SO_4 - MOLECULAR WEIGHT 98.08

Manufacturer's Name:	CENTURY RAYON	Supplier's Name:	CENTURY RAYON
Street Address	MURBAD ROAD	Street Address	MURBAD ROAD
City	SHAHAD (Dist Thane)	City	SHAHAD (Dist Thane)
State	MAHARASHTRA	State	MAHARASHTRA
Postal Code	421 103	Postal Code	421 10
Emergency Tel No	0251-2733670-79	Emergency Tel No	0251-2733670-79
	Ulhasnagar		Ulhasnagar
Chemical Name	SULFURIC ACID	Chemical Name	H_2SO_4
Trade Name & Synonyms	SULFURIC ACID Oil of Vitriol Dipping Acid	Product Use :-	In Rayon Manufacture. Basic acid for many industries, electro-Plating.

SECTION II : HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Approximate Conc. %	C.A.S. or UN Number	L.D. 50 (Specify Species & route)	LC 50 (specify Species & Route)
Corrosive	98.5%	UN Number 1830	Through skin & Vapour inhalation	

SECTION III : PHYSICAL DATA FOR MATERIAL

Physical State Gas/Liquid/Solid LIQUID	Odour & appearance Sharp penetrating odour oily dense liquid	Odour Threshold (ppm) $1 \text{ mg/m}^3 = 0.2 \text{ ppm (TWA)}$
Specific Gravity 1.834	Vapour Pressure (mm) at $145.8^\circ\text{C} = 1\text{mm}$	Freezing Density (Air -1) 2.07
Evaporation Rate :-	Boiling Point ($^\circ\text{C}$) 330°C	Freezing Point ($^\circ\text{C}$) -
Solubility in water (20°C) - Miscible with water in all Proportions	PH 7	Density (g/ml) 1.834

Coefficient of Water/
Oil DistributionMelting Point 10.49°C

SECTION IV : FIRE AND EXPLOSION HAZARD OF MATERIAL

Flammability Yes/No - NO	Means of Extinction Not applicable	Special Procedures -
Flash Point (°C) & Method :-	Upper Explosive Limit (% by vol)	Lower Explosive Limit (% by vol)
Auto-ignition temp (°C) :-	TDG flammability Class 8 (corrosive)	Hazardous combustion Product - Violent Splattering occurs if water is added
Explosion Data - Sensitivity to Chemical Impact Forms explosion when react with metals due to hydrogen		Sensitivity to Static Discharge : NIL

SECTION V : REACTIVITY DATA

Chemical Stability - Yes/No Info, under what condition	Yes
Incompatibility with other substances - Yes/NO. If Yes, which ones	Incompatible with all metals. Concentrated H_2SO_4 is a powerful oxidising agent. It is HYGROSCOPIC
Reactivity and under what conditions	Reactivity with all metals, hygroscopic strong oxidising agent
Hazardous Decomposition Products	SO_2 during heating
Material Name/Identifier	SULFURIC ACID 98.5% H_2SO_4

SECTION VI : TOXICOLOGICAL PROPERTIES OF MATERIAL

Skin Contact INJURY/BURNS	Skin Absorption CAUSES BURNS	Eye Contact Irritation - needs flushing with water for 15-20 Mts.
Inhalation Acute Breathing problem	Inhalation-Chronic Breathing Problem	Ingestion Unconsciousness

EFFECTS OF ACUTE EXPOSURE TO MATERIAL

Damages dental enamel. Inhalation of H_2SO_4 fumes causes irritation to nose and throat. Damages mucous membrane. Bleeding from nose, conjunctivities of eyes, over exposure gives pulmonary edema, dermatitis

<u>Effects of Chronic Exposure to Material</u>	<u>Exposure limit (s)</u>	<u>Irritancy of material</u>
Damage to dental enamel breathing problem, causes Necrosis of Teeth Pulmonary Fibrosis	1 mg/m ³ of air	Damages mucous membrane Pulmonary odema Tooth Necrosis

SENSITIZATION TO MATERIAL

(Carcinogenically, Reproductive effects, Tetratogenically, Mutagenicity)

CARCINOGENOUS TO LUNGS**SYNERGISTIC MATERIALS**

Necrosis, damage to teeth enamel and mucous membrane and tissue damage

SECTION VII : PREVENTIVE MEASURES

- 1 Use Personal protective equipments, showers and eye fountains
- 2 Plenty of water connections to wash spillage and body burns
- 3 When water is added onto acid surface, exothermic reaction causes splatter which can burn face or hands of persons adding the water; hence protective face shield gloves apron (rubber/PVC) must be used.

PERSONAL PROTECTIVE EQUIPMENT

Gloves (Specify)	Rubber/Neoprene/PVC
Respiratory (Specify)	Air hose line apparatus with mask
Eyes (Specify)	face shield acrylic, covering full face
Footwear (Specify)	Gumboots, rubber or PVC
Clothing (Specify)	Cotton
Others (Specify)	-

ENGINEERING CONTROLS (e.g., Ventilation, enclosed processed etc) pl. specify

<u>Leak & SPILL PROCEDURES</u> Cover spillage with sand. Neutralise with calcium hydroxide or soda ash or calcium carbonate. Wash with copious amount of water carefully. Do not neutralise with caustic soda as reaction is exothermic	<u>WASTE DISPOSAL</u>
<u>HANDLING PROCEDURES & EQUIPMENT</u> Handling in carboys, drums, bottles and through pipelines inside the plant	<u>STORAGE REQUIREMENTS</u> Concentrated sulfuric acid can be stored in MS Tanks

SPECIAL SHIPPING INFORMATION

TGD Class 8 - Corrosive, HAZCHEM SYMBOL : 2 P, SYMBOL (Liquids, spilling from two glass vessels and attacking a hand and a metal) Black, BACKGROUND: Upper half white, Lower Half Black with white border.

SECTION VIII : FIRST AID MEASURES**FIRST AID MEASURES**

- 1 Skin contact - wash with water for atleast 15 minutes
- 2 Eye contact - wash with eye fountains for atleast 15 minutes
- 3 Inhalation - remove patient to FRESH AIR. If breathing ceased, give artificial respiration - transfer patient to hospital
- 4 Ingestion - (a) If conscious, give large quantity of water to dilute the acid - give milk if available, keep patient warm, (b) If unconscious get medical attention.

SOURCES USED

- 1 Fire Safety Data Sheet No FS 09 LPA
- 2 Safety Code for Sulfuric Acid - IS 4262 - 1967
- 3 Dangerous properties of Industrial Materials by N Irving Sax

ADDITIONAL INFORMATION

- 1 Do Not neutralise acid spillage on skin with alkali
- 2 No ointment should be applied
- 3 No EYE ointment should be used

SECTION IX : DATE OF PREPARATION OF MATERIAL SAFETY DATA SHEET

Prepared by Safety Deptt, CENTURY RAYON, SHAHAD - Phone No: Ulhasnagar

date:

0251-2733670-79

NOTES

- 1 CAS or UN Number - Chemical Abstract Service or United Nations (UN) Number
- 2 LD-50 - Lethal Dose 50 (LD 50 - Specify species and route)
- 3 LC-50 - Lethal concentration 50% (LC-50 specify species & route)
- 4 TDG flammability - Transport of Dangerous Goods Flammability Classification by United Nations.
