CYTEC

MATERIAL SAFETY DATA

MSDS No: 0243
Date: 07/01/97
Supersedes: 12/12/96

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Sulfuric Acid,60 degree Be',66 degree Be', 98-100%**

SYNONYMS: Sulfuric acid; oil of vitriol; sulfuric acid, 77%; electrolyte grade; codex food grade; 1.835 sulfuric acid; 93% sulfuric acid; 96% sulfuric acid

CHEMICAL FAMILY: Inorganic acid

MOLECULAR FORMULA: H2S04

MOLECULAR WGT: 98.00

CYTEC INDUSTRIES INC., FIVE GARRET MOUNTAIN PLAZA, WEST PATERSON, NEW JERSEY 07424, USA
For Product Information call 1-800/652-6013. Outside the USA and Canada call 973/357-3193.
EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call CHEMTREC: 1-800/424-9300. Outside the USA and Canada call 703/527-3887.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

COMPONENT	CAS. NO.	%	TWA/CEILING	REFERENCE
Sulfuric Acid	007664-93-9	~80-100	1 mg/M3 3 mg/M3 STEL	OSHA/ACGIH ACGIH

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR: Clear to slightly cloudy, oily liquid; odorless to slightly pungent odor

STATEMENTS OF HAZARD:
DANGER! CAUSES SEVERE BURNS OF EYES AND SKIN

POTENTIAL HEALTH EFFECTS

EFFECTS OF OVEREXPOSURE:
Direct contact with this material may cause severe eye and skin irritation.
Refer to Section 11 for toxicology information on the OSHA regulated components of this product.

4. FIRST AID MEASURES

In case of skin contact, remove contaminated clothing without delay. Wear impervious gloves. Cleanse skin thoroughly with soap and water. Do not omit cleaning hair or under fingernails if contaminated. Do not reuse clothing without laundering. Do not reuse contaminated leatherware.
In case of eye contact, immediately irrigate with plenty of water for 15 minutes. Obtain medical attention without delay.
If vapor of this material is inhaled, remove from exposure. Administer oxygen if there is difficulty in breathing. Give artificial respiration if person is not breathing and continue until normal breathing is established. Obtain medical attention without delay.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Not applicable

FLAMMABLE LIMITS
(% BY VOL): Not applicable

AUTOIGNITION TEMP: Not available

DECOMPOSITION TEMP: Not available

EXTINGUISHING MEDIA AND FIRE FIGHTING INSTRUCTIONS

Sulfuric acid will not burn, but it is capable of igniting finely divided combustible materials on contact. May react violently with organic materials and water with the evolution of heat. Fires involving a small amount of combustibles may be smothered by dry chemical. Use water on combustibles burning in vicinity of acid but use care as water applied to the acid results in severe generation of heat and may cause boiling and splattering. Wear self-contained, positive pressure breathing apparatus and full firefighting protective clothing. See Section 8 (Exposure Controls/Personal Protection) for special protective clothing.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Where exposure level is not known, wear NIOSH approved positive pressure self-contained respirator. Where exposure level is known, wear NIOSH approved respirator suitable for level of exposure. Wear the same protective equipment as in Exposure Control Methods, except acid hood and suit should be worn when spraying or splashing can occur. Dilute spill cautiously with 5 or 6 volumes of water and neutralize gradually with soda ash or lime. Do not allow unneutralized acid to get into sewers containing sulfides, because of the danger of evolving hydrogen sulfide gas.

7. HANDLING AND STORAGE

Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Do not add water to contents while in a container because of violent reaction.

Sulfuric acid attacks many metals, releasing flammable hydrogen gas. Extremely hazardous in contact with many materials, particularly explosives. Hydrogen gas can accumulate in metal tanks containing acid. Do not smoke or have other sources of ignition around open drums or tanks containing acid. When diluting, always add acid to water. Never add water to acid. Protect against physical damage to containers and contact with incompatible materials. Do not strike tank fittings with tools or other hard objects.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure. Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands with soap and water. Prevent eye and skin contact. Wear the special protective equipment specified below for operations where eye or skin contact can occur. Prevent contamination of skin or clothing when removing protective equipment. Provide eyewash fountain and safety shower in close proximity to points of potential exposure. Where exposures are below the PEL, no respiratory protection is required. Where exposures exceed the PEL, use respirator approved by NIOSH or full protective suit with air supply appropriate for the material and level of exposure. See "GUIDE TO INDUSTRIAL RESPIRATORY PROTECTION"(NIOSH).

Special protective equipment - To prevent skin contact wear skin protection, such as impervious gloves, apron, workpants, long sleeve workshirt, or disposable coveralls. To prevent eye contact wear eye protection such as chemical splash proof goggles or face shield.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Clear to slightly cloudy, oily liquid; odorless to slightly pungent odor

BOILING POINT: 640 F; 338 C; Not applicable

MELTING POINT: 37-51 F; 3-11 C; (values for sulfuric acid 98% and 100%, respectively)

VAPOR PRESSURE: Variable function of temperature and concentration

SPECIFIC GRAVITY: 1.4-1.8

VAPOR DENSITY: Not available

% VOLATILE (BY WT): 0-20; (water)

pH: 2.1; 0.01 N; 0.10 N=1.2; 1.0 N=0.3

SATURATION IN AIR (% BY VOL): Not available

EVAPORATION RATE: Not available

SOLUBILITY IN WATER: Complete

10. STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: None known

POLYMERIZATION: Will Not Occur
CONDITIONS TO AVOID: None known

INCOMPATIBLE MATERIALS: Water, many metals, and strong alkali materials. Contact with carbides, chlorates, fulminates, nitrates, or picrates may cause violent reaction/explosion or form unstable compounds. Contact with organic materials, particularly with organic acids, acetates and anhydrides may result in highly exothermic reaction. Contact with metal may release explosive hydrogen gas. Contact with finely divided organic material may cause fire.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce sulfur trioxide and/or sulfur dioxide. Toxic and explosive hydrogen sulfide may be formed under certain conditions.

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION. Toxicological information on the OSHA regulated components of this product is as follows:

The acute oral (rat) LD50 and acute 1-hour inhalation (rat) for sulfuric acid are 2,140 mg/kg and 347 ppm (0.348 mg/L/4hr), respectively. Sulfuric acid is corrosive to the skin and eyes. Concentrated sulfuric acid can also be corrosive to the nose, muscous membranes, respiratory tract and gastrointestinal tract. Inhalation of the vapors or mist can cause pulmonary edema, emphysema or permanent changes in pulmonary function. Chronic exposure has been reported to be associated with dermatitis, chronic bronchitis, gastritis, erosion of dental enamel, conjunctivitis, increased frequency of respiratory tract infections and cancer of the larynx, lungs and upper respiratory tract.

12. ECOLOGICAL INFORMATION

No aquatic LC50, BOD, or COD data available.

OCTANOL/H_2O PARTITION COEF.: Not applicable

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the Cytec product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicated if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristic. There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 5 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For

Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. Cytec encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. Cytec recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. Cytec has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

	D.O.T. SHIPPING INFORMATION	**IMO SHIPPING INFORMATION**
SHIPPING NAME:	SULFURIC ACID	SULPHURIC ACID
HAZARD CLASS/ PACKING GROUP:	8 II	8 II
UN NUMBER:	UN1830	1830
IMDG PAGE:	Not Applicable	8230
D.O.T. HAZARDOUS SUBSTANCES:	(PRODUCT REPORTABLE QUANTITY) SULFURIC ACID (1,073 lbs.)	Not Applicable
TRANSPORT LABEL REQUIRED:	Corrosive	Corrosive

	ICAO/IATA	**TRANSPORT CANADA**
SHIPPING NAME:	SULPHURIC ACID	SULPHURIC ACID
HAZARD CLASS:	8	8
SUBSIDIARY CLASS:	—	9.2
UN / ID NUMBER:	1830	1830
PACKING GROUP:	II	II
TRANSPORT LABEL REQUIRED:	Corrosive	Corrosive
PACKING INSTR:	PASSENGER 809 CARGO 813	Not Applicable
MAX NET QTY:	PASSENGER 1L CARGO 30L	Not Applicable

ADDITIONAL TRANSPORT INFORMATION

TECHNICAL NAME (N.O.S.):	Not Applicable

15. REGULATORY INFORMATION

INVENTORY INFORMATION

US TSCA: This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.

CANADA DSL: Components of this product have been reported to Environment Canada in accordance with subsection 25 of the Canadian Environmental Protection Act and are included on the Domestic Substances List.

EEC EINECS: All components of this product are included in the European Inventory of Existing Chemical Substances (EINECS) in compliance with Council Directive 67/548/EEC and its amendments.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

COMPONENT	CAS. NO.	%	TPQ(lbs)	RQ(lbs)	S313	TSCA 12B
Sulfuric Acid	007664-93-9	~80-100	1000	1000	YES	NO

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA				
ACUTE (Y)	CHRONIC (N)	FIRE (N)	REACTIVE (Y)	PRESSURE (N)

16. OTHER INFORMATION

NFPA HAZARD RATING (National Fire Protection Association)

Fire 0
Health 3 2 Reactivity
~~W~~
Special

FIRE: Materials that will not burn.

HEALTH: Materials which on short exposure could cause serious temporary or residual injury even though prompt medical treatment were given.

REACTIVITY: Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Also materials which may react violently with water or which may form potentially explosive mixtures with water.

REASON FOR ISSUE:

Area Code Change

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