

*** CHEMICAL IDENTIFICATION ***

RTECS NUMBER : WS5600000
CHEMICAL NAME : Sulfuric acid
CAS REGISTRY NUMBER : 7664-93-9
OTHER CAS REGISTRY NOS. : 119540-51-1
127529-01-5
LAST UPDATED : 199712
DATA ITEMS CITED : 55
MOLECULAR FORMULA : H2-O4-S
MOLECULAR WEIGHT : 98.08
WISWESSER LINE NOTATION : H2 S-O4
COMPOUND DESCRIPTOR : Agricultural Chemical
Tumorigen
Mutagen
Reproductive Effector
Human
Primary Irritant

SYNONYMS/TRADE NAMES :

- * Acide sulfurique
- * Acido solforico
- * Battery acid
- * BOV
- * Dihydrogen sulfate
- * Dipping acid
- * Electrolyte acid
- * Mattling acid
- * Oil of vitriol
- * Schwefelsaeureloesungen
- * Sulfuric acid
- * Sulphuric acid
- * Vitriol Brown Oil
- * Zwavelzuuroplossingen

*** HEALTH HAZARD DATA ***

** SKIN/EYE IRRITATION DATA **

TYPE OF TEST : Standard Draize test
ROUTE OF EXPOSURE : Administration into the eye
SPECIES OBSERVED : Rodent - rabbit
DOSE/DURATION : 250 ug
REACTION SEVERITY : Severe
REFERENCE :

AJOPAA American Journal of Ophthalmology. (Ophthalmic Pub. Co., 435 N.
Michigan Ave., Suite 1415, Chicago, IL 60611) Series 3: V.1- 1918-
Volume(issue)/page/year: 29,1363,1946

TYPE OF TEST : Rinsed with water
ROUTE OF EXPOSURE : Administration into the eye
SPECIES OBSERVED : Rodent - rabbit
DOSE/DURATION : 5 mg/30S
REACTION SEVERITY : Severe
REFERENCE :

TXCYAC Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85,
Limerick, Ireland) V.1- 1973- Volume(issue)/page/year: 23,281,1982

**** ACUTE TOXICITY DATA ****

TYPE OF TEST : TLo - Lowest published toxic concentration

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Human

DOSE/DURATION : 3 mg/m3/24W

TOXIC EFFECTS :

Musculoskeletal - changes in teeth and supporting structures

REFERENCE :

BJMAG British Journal of Industrial Medicine. (British Medical Journal,
Box 560B, Kennebunkport, ME 04046) V.1- 1944- Volume(issue)/page/year:
18,63,1961

TYPE OF TEST : LDLo - Lowest published lethal dose

ROUTE OF EXPOSURE : Unreported

SPECIES OBSERVED : Human - man

DOSE/DURATION : 135 mg/kg

TOXIC EFFECTS :

Details of toxic effects not reported other than lethal dose value

REFERENCE :

85DCAI "Poisoning; Toxicology, Symptoms, Treatments," 2nd ed., Arena, J.M.,
Springfield, IL, C.C. Thomas, 1970 Volume(issue)/page/year: 2,73,1970

TYPE OF TEST : LD50 - Lethal dose, 50 percent kill

ROUTE OF EXPOSURE : Oral

SPECIES OBSERVED : Rodent - rat

DOSE/DURATION : 2140 mg/kg

TOXIC EFFECTS :

Details of toxic effects not reported other than lethal dose value

REFERENCE :

AIHAAP American Industrial Hygiene Association Journal. (AIHA, 475 Wolf
Ledges Pkwy., Akron, OH 44311) V.19- 1958- Volume(issue)/page/year:
30,470,1969

TYPE OF TEST : LC50 - Lethal concentration, 50 percent kill

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Rodent - rat

DOSE/DURATION : 510 mg/m3/2H

TOXIC EFFECTS :

Details of toxic effects not reported other than lethal dose value

REFERENCE :

85GMAT "Toxicometric Parameters of Industrial Toxic Chemicals Under Single
Exposure," Izmerov, N.F., et al., Moscow, Centre of International Projects,
GKNT, 1982 Volume(issue)/page/year: -,107,1982

TYPE OF TEST : LC50 - Lethal concentration, 50 percent kill

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Rodent - mouse

DOSE/DURATION : 320 mg/m3/2H

TOXIC EFFECTS :

Details of toxic effects not reported other than lethal dose value

REFERENCE :

85GMAT "Toxicometric Parameters of Industrial Toxic Chemicals Under Single Exposure," Izmerov, N.F., et al., Moscow, Centre of International Projects, GKNT, 1982 Volume(issue)/page/year: -,107,1982

TYPE OF TEST : LC50 - Lethal concentration, 50 percent kill

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Rodent - guinea pig

DOSE/DURATION : 18 mg/m³

TOXIC EFFECTS :

Lungs, Thorax, or Respiration - other changes

REFERENCE :

MELAAD Medicina del Lavoro. Industrial Medicine. (Via S. Barnaba, 8, 20122 Milan, Italy) V.16- 1925- Volume(issue)/page/year: 45,590,1954

** OTHER MULTIPLE DOSE TOXICITY DATA **

TYPE OF TEST : TCLo - Lowest published toxic concentration

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Rodent - rat

DOSE/DURATION : 784 ug/m³/24H/84D-C

TOXIC EFFECTS :

Behavioral - muscle contraction or spasticity

Kidney, Ureter, Bladder - other changes in urine composition

Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - true cholinesterase

REFERENCE :

GISAAA Gigena i Sanitariya. For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1936- Volume(issue)/page/year: 38(3),6,1973

TYPE OF TEST : TCLo - Lowest published toxic concentration

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Mammal - dog

DOSE/DURATION : 900 ug/m³/21H/89W-I

TOXIC EFFECTS :

Cardiac - changes in heart weight

Lungs, Thorax, or Respiration - other changes

Lungs, Thorax, or Respiration - changes in lung weight

REFERENCE :

AEHLAU Archives of Environmental Health. (Heldref Pub., 4000 Albemarle St., NW, Washington, DC 20016) V.1- 1960- Volume(issue)/page/year: 26,16,1973

TYPE OF TEST : TCLo - Lowest published toxic concentration

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Primate - monkey

DOSE/DURATION : 2 mg/m³/23H/78W-I

TOXIC EFFECTS :

Lungs, Thorax, or Respiration - other changes

REFERENCE :

AEHLAU Archives of Environmental Health. (Heldref Pub., 4000 Albemarle St., NW, Washington, DC 20016) V.1- 1960- Volume(issue)/page/year: 27,16,1973

TYPE OF TEST : TCLo - Lowest published toxic concentration

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Rodent - guinea pig

DOSE/DURATION : 30 mg/m³/7D-C

TOXIC EFFECTS :

Lungs, Thorax, or Respiration - acute pulmonary edema

Related to Chronic Data - death

REFERENCE :

JTEHD6 Journal of Toxicology and Environmental Health. (Hemisphere Pub.,
1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76-
Volume(issue)/page/year: 3,521,1977

**** REPRODUCTIVE DATA ****

TYPE OF TEST : TCLo - Lowest published toxic concentration

ROUTE OF EXPOSURE : Inhalation

SPECIES OBSERVED : Rodent - rabbit

DOSE : 20 mg/m³/7H

SEX/DURATION : female 6-18 day(s) after conception

TOXIC EFFECTS :

Reproductive - Specific Developmental Abnormalities - musculoskeletal system

REFERENCE :

JEHSDH Journal of Environmental Science and Health, Part C: Environmental
Health Sciences. New York, NY) V.13, 1978-79. Volume(issue)/page/year:
13,251,1979

**** MUTATION DATA ****

TYPE OF TEST : Cytogenetic analysis

TEST SYSTEM : Rodent - hamster Ovary

DOSE/DURATION : 4 mmol/L

REFERENCE :

MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE
Amsterdam, Netherlands) V.1- 1964- Volume(issue)/page/year: 225,55,1989

***** REVIEWS *****

ACGIH TLV-STEL 3 mg/m³

DTLVS* The Threshold Limit Values (TLVs) and Biological Exposure Indices
(BEIs) booklet issues by American Conference of Governmental Industrial
Hygienists (ACGIH), Cincinnati, OH, 1996 Volume(issue)/page/year:
TLV/BEI,1997

ACGIH TLV-TWA 1 mg/m³

DTLVS* The Threshold Limit Values (TLVs) and Biological Exposure Indices
(BEIs) booklet issues by American Conference of Governmental Industrial
Hygienists (ACGIH), Cincinnati, OH, 1996 Volume(issue)/page/year:
TLV/BEI,1997

IARC Cancer Review:Human Sufficient Evidence

IMEMDT IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals
to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210)
V.1- 1972- Volume(issue)/page/year: 54,41,1992

IARC Cancer Review:Group 1

IMEMDT IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210)

V.1- 1972- Volume(issue)/page/year: 54,41,1992

TOXICOLOGY REVIEW

EVHPAZ EHP, Environmental Health Perspectives. (U.S. Government Printing Office, Supt of Documents, Washington, DC 20402) No.1- 1972- Volume(issue)/page/year: 10,35,1975

TOXICOLOGY REVIEW

ARTODN Archives of Toxicology. (Springer-Verlag, Heidelberger Pl. 3, D-1000 Berlin 33, Fed. Rep. Ger.) V.32- 1974- Volume(issue)/page/year: 39,299,1978

*** U.S. STANDARDS AND REGULATIONS ***

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION

FEREAC Federal Register. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) V.1- 1936- Volume(issue)/page/year: 54,7740,1989

MSHA STANDARD-air:TWA 1 mg/m³

DTLVS* The Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) booklet issues by American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, OH, 1996 Volume(issue)/page/year: 3,239,1971

OSHA PEL (Gen Indu):8H TWA 1 mg/m³

CFRGBR Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1910.1000,1994

OSHA PEL (Construc):8H TWA 1 mg/m³

CFRGBR Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1926.55,1994

OSHA PEL (Shipyard):8H TWA 1 mg/m³

CFRGBR Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1915.1000,1993

OSHA PEL (Fed Cont):8H TWA 1 mg/m³

CFRGBR Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) Volume(issue)/page/year: 41,50-204.50,1994

*** OCCUPATIONAL EXPOSURE LIMITS ***

OEL-ARAB Republic of Egypt:TWA 1 mg/m³ JAN 1993

OEL-AUSTRALIA:TWA 1 mg/m³ JAN 1993

OEL-BELGIUM:TWA 1 mg/m³;STEL 3 mg/m³ JAN 1993

OEL-DENMARK:TWA 1 mg/m³ JAN 1993

OEL-FINLAND:TWA 1 mg/m³;STEL 3 mg/m³;Skin JAN 1993

OEL-FRANCE:TWA 1 mg/m³;STEL 3 mg/m³ JAN 1993

OEL-GERMANY:TWA 1 mg/m³ JAN 1993

OEL-HUNGARY:STEL 1 mg/m³ JAN 1993

OEL-JAPAN:TWA 1 mg/m³ JAN 1993

OEL-THE NETHERLANDS:TWA 1 mg/m³ JAN 1993

OEL-THE PHILIPPINES:TWA 1 mg/m³ JAN 1993

OEL-POLAND:TWA 1 mg/m³ JAN 1993

OEL-RUSSIA:STEL 1 mg/m³;Skin JAN 1993

OEL-SWEDEN:TWA 1 mg/m³;STEL 3 mg/m³ JAN 1993

OEL-SWITZERLAND:TWA 1 mg/m³;STEL 2 mg/m³ JAN 1993

OEL-THAILAND:TWA 1 mg/m³ JAN 1993

OEL-TURKEY:TWA 1 mg/m³ JAN 1993

OEL-UNITED KINGDOM:TWA 1 mg/m³ JAN 1993

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV

*** NIOSH STANDARDS DEVELOPMENT AND SURVEILLANCE DATA ***

NIOSH RECOMMENDED EXPOSURE LEVEL (REL) :

NIOSH REL TO SULFURIC ACID-air:10H TWA 1 mg/m³

REFERENCE :

NIOSH* National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda.

Volume(issue)/page/year: DHHS #92-100,1992

NIOSH OCCUPATIONAL EXPOSURE SURVEY DATA :

NOHS - National Occupational Hazard Survey (1974)

NOHS Hazard Code - 70870

No. of Facilities: 54746 (estimated)

No. of Industries: 313

No. of Occupations: 143

No. of Employees: 499446 (estimated)

NOES - National Occupational Exposure Survey (1983)

NOES Hazard Code - 70870

No. of Facilities: 54516 (estimated)

No. of Industries: 300

No. of Occupations: 182

No. of Employees: 775587 (estimated)

No. of Female Employees: 173653 (estimated)

*** STATUS IN U.S. ***

EPA TSCA Section 8(b) CHEMICAL INVENTORY

EPA TSCA Section 8(d) unpublished health/safety studies

EPA TSCA Section 8(e) Risk Notification, 8EHQ-0892-9247;8EHQ-0892-9248

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1998

NIOSH Analytical Method, 1994: Acids, inorganic, 7903

OSHA ANALYTICAL METHOD #ID-113

*** END OF RECORD ***