**Material Safety Data Sheet**

**SECTION 1.** - - - - - - - CHEMICAL IDENTIFICATION - - - - - - -

**PRODUCT #: 51526**

**NAME: Sulfuric Acid ACS Reagent**

**CAS #: 7664-93-9**

**MF #: H2SO4**

**SYNONYMS:**

- ACIDE SULFURIQUE (FRENCH)
- ACIDO SOLEFOSSICO (ITALIAN)
- BATTERY ACID
- BOV DIHYDROGEN SULFATE
- DISSOLVING ACID
- ELECTROLYTE ACID
- MATLING ACID
- OIL OF VITRIOL
- SCHWEFELSÆUREGESUNGEN (GERMAN)
- SULFURIC ACID, SPENT (UN1832) (DOT)
- SULPHURIC ACID, UN1830 (DOT)
- UN1832 (DOT)
- VITRIOL BROWN OIL
- ZWAVELZUURLOSINGEN (DUTCH)

**SECTION 2.** - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -

**LABEL PRECAUTIONARY STATEMENTS:**

- **OXIDIZING**
- **HIGHLY TOXIC (USA DEFINITION)**
- **TOXIC (EUROPEAN DEFINITION)**
- **CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. MAY CAUSE CANCER BY INHALATION. CAUSES BURNS. TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED. REACTS VIOLENTLY WITH WATER. KEEP AWAY FROM COMBUSTIBLE MATERIAL. IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE). WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYES/FACE PROTECTION. DO NOT BREATHE VAPOR.**

**SECTION 3.** - - - - - - - HAZARDS IDENTIFICATION - - - - - - -

**SECTION 4.** - - - - - - - FIRST-AID MEASURES - - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Assure adequate flushing of the eyes by separating the eyelids with fingers. IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN IMMEDIATELY.

CONTINUED ON NEXT PAGE
WASH CONTAMINATED CLOTHING BEFORE REUSE.
DISCARD CONTAMINATED SHOES.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
NONCONDUCTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
DO NOT USE WATER.

SPECIAL FIRE FIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.
STRONG OXIDIZER.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS.
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.

SECTION 6. ACCIDENTAL RELEASE MEASURES

EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
COVER WITH DRY-LIME, SAND, OR SODA ASH. PLACE IN COVERED CONTAINERS USING NONSPARKING TOOLS AND TRANSPORT OUTDOORS.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.
AVOID INHALATION.

SECTION 7. HANDLING AND STORAGE

REFER TO SECTION 8.

ADDITIONAL INFORMATION
INCOMPATIBLE WITH CARBIDES, CHLORATES, FULMINATES, NITRATES, PICRATES,
CYANIDES, ALKALI HALIDES, ZINC IODIDE, PERMANGANATES, HYDROGEN PEROXIDE,
AZIDES, PERCHLORATES, NITROMETHANE, PHOSPHORUS, NITRITES. VIOLENT REACTION WITH:
CYCLOPENTADIENE, CYCLOPENTANONE OXIME, NITROARYL AMINES,
HEXALUMINIUM OXOSILICATE, PHOSPHORUS (III) OXIDE.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTINUED ON NEXT PAGE
PRODUCT #: S1526
NAME: SULFURIC ACID ACS REAGENT
MF #: H2SO4

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
FACE SHIELD (8-INCH MINIMUM).
DO NOT BREATHE VAPOR.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
CARCINOGEN.
POISON.
CORROSIVE.
KEEP TIGHTLY CLOSED.
DO NOT STORE NEAR OR ALLOW CONTACT WITH CLOTHING AND OTHER COMBUSTIBLE MATERIAL.
DO NOT ALLOW CONTACT WITH WATER.
STORE IN A COOL DRY PLACE.

SECTION 9. --- --- --- --- PHYSICAL AND CHEMICAL PROPERTIES --- --- --- ---

APPEARANCE AND ODOR
CLEAR, COLORLESS LIQUID (ACS)
FLASHPOINT: N/A
VAPOR PRESSURE: 1MM 145.3° C
VAPOR DENSITY: <3 @ 25° C
SPECIFIC GRAVITY: 1.840

SECTION 10. --- --- --- --- STABILITY AND REACTIVITY --- --- --- ---

INCOMPATIBILITIES
BASES
HALIDES
ORGANIC MATERIALS
FINELY POWDERED METALS
PROTECT FROM MOISTURE.
DO NOT ALLOW WATER TO ENTER CONTAINER BECAUSE OF VIOLENT REACTION.
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
SULFUR OXIDES

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

PRODUCT #: 51526  NAME: SULFURIC ACID ACS REAGENT
MF: H2SO4

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS
MAY BE FATAL IF SWALLOWED.
HARMFUL IF INHALED OR ABSORBED THROUGH SKIN.
MATERIAL IS EXTREMELY Destructive TO TISSUE OF THE MUCOUS MEMBRANES
AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
INHALATION MAY BE FATAL AS A RESULT OF SPASM, INFLAMMATION AND EDEMA
OF THE LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND
VOMITING.

CHRONIC EFFECTS
Carcinogen.
The International Agency for Research on Cancer (IARC) has determined
that occupational exposure to strong-inorganic-acid mists containing
SULFURIC ACID is carcinogenic to humans (GROUP 1).

RTECS NO: W592600000 SULFURIC ACID (AGG1H, DOT, USHA)

IRRITATION DATA
EYE-ROT 250 UG SEV.
EYE-ROT 5 MG/30S RINSE SEV.

TOXICITY DATA
UNR-MAN LD50: 1135 MG/KG
LD50-RAT LC50: 2140 MG/KG
IHL-RAT LC50: 510 MG/M3/2H
IHL-MUS LC50: 320 MG/M3/2H
IHL-GPO LC50: 18 MG/M3

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES
(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR
COMPLETE INFORMATION.

SECTION 12. ECOLOGICAL INFORMATION

DATA NOT YET AVAILABLE.

SECTION 13. DISPOSAL CONSIDERATIONS

FOR SMALL QUANTITIES: CAUTION: ADD TO A LARGE STIRRED EXCESS OF
WATER. ADJUST THE PH TO NEUTRAL, SEPARATE ANY INSOLUBLE SOLIDS OR
LIQUIDS AND PACKAGE THEM FOR HAZARDOUS-WASTE DISPOSAL. FLUSH THE
AQUEOUS SOLUTION DOWN THE DRAIN WITH PLENTY OF WATER. THE HYDROLYSIS

CONTINUED ON NEXT PAGE.
MATERIAL SAFETY DATA SHEET

PRODUCT #: 51526
NAME: SULFURIC ACID ACS REAGENT
MF#: H2SO4

AND NEUTRALIZATION REACTIONS MAY GENERATE HEAT AND FUMES WHICH CAN BE
CONTROLLED BY THE RATE OF ADDITION.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14 - TRANSPORT INFORMATION

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15 - REGULATORY INFORMATION

REVIEWS, STANDARDS, AND REGULATIONS:
ACGIH TLV-TWA 1 MG/M3; STEL 3 MG/M3
IARC CANCER REVIEW: HUMAN SUFFICIENT EVIDENCE (IEMMDT 54,41,92)
IARC CANCER REVIEW: GROUP 1
EPA FIFRA 1983 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FERAC 54,7740,89
MHA STANDARD: AIR TWA 1 MG/M3
DTSV: 3,23971
OSH ACT (INDUSTRY): 48 TWA 1 MG/M3
OSH ACT (CONSTRUCTION): 48 TWA 1 MG/M3
OSH ACT (SHIP YARD): 48 TWA 1 MG/M3
OSH ACT (FED CONT): 48 TWA 1 MG/M3
OSH ACT (ARAB REPUBLIC OF EGYPT): TWA 1 MG/M3 JAN93
OSH ACT (AUSTRALIA): TWA 1 MG/M3 JAN93
OSH ACT (BELGIUM): TWA 1 MG/M3; STEL 3 MG/M3 JAN93
OSH ACT (CZECHOSLOVAKIA): TWA 1 MG/M3; STEL 2 MG/M3 JAN93
OSH ACT (DENMARK): TWA 1 MG/M3 JAN93
OSH ACT (FINLAND): TWA 1 MG/M3; STEL 3 MG/M3; SKIN JAN93
OSH ACT (FRANCE): TWA 1 MG/M3; STEL 3 MG/M3 JAN93
OSH ACT (GERMANY): TWA 1 MG/M3 JAN93
OSH ACT (HUNGARY): STEL 1 MG/M3 JAN93
OSH ACT (JAPAN): TWA 1 MG/M3 JAN93
OSH ACT (NEDERLAND): TWA 1 MG/M3 JAN93
OSH ACT (PHILIPPINES): TWA 1 MG/M3 JAN93
OSH ACT (POLAND): TWA 1 MG/M3 JAN93
OSH ACT (RUSSIA): STEL 1 MG/M3; SKIN JAN93
OSH ACT (SWEDEN): TWA 1 MG/M3; STEL 3 MG/M3 JAN93
OSH ACT (SWITZERLAND): TWA 1 MG/M3; STEL 2 MG/M3 JAN93

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET  PAGE 6

PRODUCT #: S 1520  NAME: SULFURIC ACID ACS REAGENT
MF: H 2SO 4

DEL-THAILAND: TWA 1 MG/M 3 JAN 93
DEL-TURKEY: TWA 1 MG/M 3 JAN 93
DEL-UNITED KINGDOM: TWA 1 MG/M 3 JAN 93
DEL IN BULGARIA, COLOMBIA, JORDAN, KOREA, CHECK ACGIH TLV
DEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO SULFURIC ACID- AIR: IUN TWA 1 MG/M 3
NIOSH # 92-100. 92
NESH 1974: HDG 70870; NIS 313; TNE 499446
NESH 1983; HDG 80708; NIS 296; TNE 50203; NOS 180; TNE 733167; TFE
1600600
EPA TSCA CHEMICAL INVENTORY, JUNE 1993
EPA TSCA SECTION 8(E) STATUS REPORT BEHQ-0985-0566
EPA TSCA TEST SUBMISSION (TCATS) DATA BASE, JULY 1994
NIOSH ANALYTICAL METHOD, 1994: ACIDS, INORGANIC, 7903
OSHA ANALYTICAL METHOD #10-113
THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

SECTION 16. OTHER INFORMATION

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO
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