

MAY 26 1995

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DATE: 05/17/95
 CUST#: 2-097-94816
 PO#: UNE53917

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 1

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

PRODUCT #: S1526 NAME: SULFURIC ACID ACS REAGENT

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

CAS #: 7664-93-9
 MF: H2O4S

SYNONYMS

ACIDE SULFURIQUE (FRENCH) * ACIDO SOLFORICO (ITALIAN) * BATTERY ACID *
 BOV * DIHYDROGEN SULFATE * DIPPING ACID * ELECTROLYTE ACID *
 MATTLING ACID * OIL OF VITRIOL * SCHWEFELSAEURELOESUNGEN (GERMAN) *
 SULFURIC ACID, SPENT (UN1832) (DOT) * SULPHURIC ACID * UN1830 (DOT) *
 UN1832 (DOT) * VITRIOL BROWN OIL * ZWAVELZUROPLOSSINGEN (DUTCH) *

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

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 EYE/FACE
 PROTECTION.
 DO NOT BREATHE VAPOR.

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

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WASH CONTAMINATED CLOTHING BEFORE REUSE.
 DISCARD CONTAMINATED SHOES.

SECTION 5. ----- FIRE FIGHTING MEASURES -----

EXTINGUISHING MEDIA
 NONCOMBUSTIBLE.
 USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
 DO NOT USE WATER.
 SPECIAL FIREFIGHTING 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 NON-SPARKING 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, PHOSPHOROUS, NITRITES. VIOLENT
 REACTION WITH: CYCLOPENTADIENE, CYCLOPENTANONE OXIME, NITROARYL AMINES,
 HEXALITHIUM DISILICIDE, PHOSPHOROUS (III) OXIDE.

SECTION 8. ----- EXPOSURE CONTROL S/PERSONAL PROTECTION -----

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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. FACESHIELD (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, NOR ALLOW CONTACT WITH, CLOTHING AND OTHER COMBUSTIBLE MATERIAL. DO NOT ALLOW CONTACT WITH WATER. VERY HYGROSCOPIC. STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR
 CLEAR, COLORLESS LIQUID (ACS)
 FLASHPOINT NONE
 VAPOR PRESSURE: 1MM 145.8 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

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M A T E R I A L S A F E T Y D A T A S H E E T P A G E 4

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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 (GRUP 1).

RTECS NO: W5500000

SULFURIC ACID (ACGIH, DOT, OSHA)

IRRITATION DATA

EYE-RBT 250 UG SEV	AJOPAA 29,1363,46
EYE-RBT 5 MG/30S RINSE SEV	TXCYAC 23,281,82

TOXICITY DATA

UNR-MAN LDLO:135 MG/KG	85DCAI 2,73,70
ORL-RAT LD50:2140 MG/KG	AIHAAP 30,470,69
IHL-RAT LC50:510 MG/M3/2H	85GMAT -,107,82
IHL-MUS LC50:320 MG/M3/2H	85GMAT -,107,82
IHL-GPG LC50:18 MG/M3	MELAAD 45,590,54

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: CAUTIOUSLY 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

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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 65INAB 6,1461,91
 IARC CANCER REVIEW:HUMAN SUFFICIENT EVIDENCE IMEMDT 54,41,92
 IARC CANCER REVIEW:GROUP 1 IMEMDT 54,41,92
 EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
 FEREAC 54,7740,89
 MSHA STANDARD-AIR:TWA 1 MG/M3
 DTLVS* 3,239,71
 OSHA PEL (GEN INDU):8H TWA 1 MG/M3
 CFRGBR 29,1910.1000,93
 OSHA PEL (CONSTRUC):8H TWA 1 MG/M3
 CFRGBR 29,1926.55,94
 OSHA PEL (SHIPYARD):8H TWA 1 MG/M3
 CFRGBR 29,1915.1000,93
 OSHA PEL (FED CONT):8H TWA 1 MG/M3
 CFRGBR 41,50-204.50,94
 OEL-ARAB REPUBLIC OF EGYPT:TWA 1 MG/M3 JAN93
 OEL-AUSTRALIA:TWA 1 MG/M3 JAN93
 OEL-BELGIUM:TWA 1 MG/M3;STEL 3 MG/M3 JAN93
 OEL-CZECHOSLOVAKIA:TWA 1 MG/M3;STEL 2 MG/M3 JAN93
 OEL-DENMARK:TWA 1 MG/M3 JAN93
 OEL-FINLAND:TWA 1 MG/M3;STEL 3 MG/M3;SKIN JAN93
 OEL-FRANCE:TWA 1 MG/M3;STEL 3 MG/M3 JAN93
 OEL-GERMANY:TWA 1 MG/M3 JAN93
 OEL-HUNGARY:STEL 1 MG/M3 JAN93
 OEL-JAPAN:TWA 1 MG/M3 JAN93
 OEL-THE NETHERLANDS:TWA 1 MG/M3 JAN93
 OEL-THE PHILIPPINES:TWA 1 MG/M3 JAN93
 OEL-POLAND:TWA 1 MG/M3 JAN93
 OEL-RUSSIA:STEL 1 MG/M3;SKIN JAN93
 OEL-SWEDEN:TWA 1 MG/M3;STEL 3 MG/M3 JAN93
 OEL-SWITZERLAND:TWA 1 MG/M3;STEL 2 MG/M3 JAN93

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NAME: SULFURIC ACID ACS REAGENT

DEL-THAILAND:TWA 1 MG/M3 JAN93
 DEL-TURKEY:TWA 1 MG/M3 JAN93
 DEL-UNITED KINGDOM:TWA 1 MG/M3 JAN93
 DEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
 DEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
 NIOSH REL TO SULFURIC ACID-AIR:10H TWA 1 MG/M3
 NIOSH* DHHS #92-100,92
 NIOSH 1974: HZD 70870; NIS 313; TNF 54746; NDS 143; TNE 499446
 NIOSH 1983: HZD 70870; NIS 296; TNF 50203; NDS 180; TNE 733167; TFE
 160080
 EPA TSCA CHEMICAL INVENTORY, JUNE 1993
 EPA TSCA SECTION 8(E) STATUS REPORT BEHQ-0985-0566
 EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JULY 1994
 NIOSH ANALYTICAL METHOD, 1994: ACIDS, INORGANIC, 7903
 OSHA ANALYTICAL METHOD #ID-113
 THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

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