MATERIAL SAFETY DATA SHEET

THIS MSDS IS FOR A COMPONENT OF CATALOG #: 661-11

SECTION 1. - - - - - - CHEMICAL IDENTIFICATION - - - - - -
CATALOG #: 680-2
NAME: SULFURIC ACID SOLUTION 2/3N

SECTION 2. - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -
CAS #: 7664-93-9
EC NO: 231-639-5

SYNONYMS
ACIDE SULFURIQUE (FRENCH) * ACIDO SOLFORICO (ITALIAN) * BATTERY ACID *
BOV * DIHYDROGEN SULFATE * DIPPING ACID * ELECTROLYTE ACID *
MATTLING ACID * OIL OF VITRIOL * SCHWEFELSÄURELOSUNGEN (GERMAN) *
SULFURIC ACID (ACGIH:DOT:OSHA) * SULFURIC ACID, SPENT (UN1832) (DOT) *
SULPHURIC ACID * UN1830 (DOT) * UN1832 (DOT) * VITRIOL BROWN OIL *
ZWAVELZUUROPLOSSINGEN (DUTCH) *

SECTION 3. - - - - - - HAZARDS IDENTIFICATION - - - - - -
LABEL PRECAUTIONARY STATEMENTS
TOXIC
MAY CAUSE CANCER BY INHALATION.
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
CAUSES BURNS.
DO NOT BREATHE VAPOR.
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.
KEEP CONTAINER TIGHTLY CLOSED IN A COOL WELL-VENTILATED PLACE.

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 BREATHEING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN IMMEDIATELY.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
DISCARD CONTAMINATED SHOES.

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

EXTINGUISHING MEDIA

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

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WATER SPRAY. CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

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.

SECTION 7. HANDLING AND STORAGE

REFER TO SECTION 8.

ADDITIONAL INFORMATION INCOMPATIBLE WITH CARBIDES, CHLORATES, FULMINATES, NITRATES, PICRATES, CYANIDES, ALKALI HALIDES, ZINC IODIDE, PERNICANATES, HYDROGEN PEROXIDE, AZIDES, PERCHLORATES, NITROMETHANE, PHOSPHOROUS, NITRITES. VIOLENT REACTION WITH: CYCLOPENTADIENE, CYCLOPENTANONE 0XIME, NITROARYL AMINES, HEXALIUM DIISOCYCLE, PHOSPHOROUS (III) OXIDE.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING. MECHANICAL EXHAUST REQUIRED. SAFETY SHOWER AND EYE BATH. FACESHIELD (8-INCH MINIMUM). DO NOT BREATHE VAPOR. DO NOT GET IN EYES, ON SKIN, ON CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE. WASH THOROUGHLY AFTER HANDLING. CARCINOGEN. TOXIC. CORROSIVE. KEEP TIGHTLY CLOSED. STORE IN A COOL DRY PLACE.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR LIQUID.

PHYSICAL PROPERTIES CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

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FLASHPOINT
SPECIFIC GRAVITY: 1.010

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

INCOMPATIBILITIES
BASES
HALIDES
AVOID CONTACT WITH METALS.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
SULFUR OXIDES

SECTION 11. - - - - - - TOXICOLOGICAL INFORMATION - - - - - - -

ACUTE EFFECTS
HARMFUL IF SWALLOWED, 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).

RITECS #: WS5600000
SULFURIC ACID

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

TOXICITY DATA
UNR-MAN LDLO:135 MG/KG
ORL-RAT LD50:2140 MG/KG
IRL-RAT LC50:510 MG/M3/2H
IRL-MUS LC50:520 MG/M3/2H
IRL-GOP LC50:18 MG/M3

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

SECTION 12. - - - - - - ECOLOGICAL INFORMATION - - - - - - -

DATA NOT YET AVAILABLE.

SECTION 13. - - - - - - - DISPOSAL CONSIDERATIONS - - - - - - -

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

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CATALOG #: 680-2
NAME: SULFURIC ACID SOLUTION 2/3N

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 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

SECTION 15. REGULATORY INFORMATION

EUROPEAN INFORMATION
EC INDEX NO.: 016-020-00-8
TOXIC R 36/38
IRRITATING TO EYES AND SKIN.
S 26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S 35
WEAR SUITABLE PROTECTIVE CLOTHING.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
ACGIH TLV-TWA 1 MG/M3; STEL 3 MG/M3 85INA 5,1461,91
IARC CANCER REVIEW: HUMAN SUFFICIENT EVIDENCE IMEMDT 54,41,92
IARC CANCER REVIEW: GROUP 1 IMEMDT 54,41,92
EPA FIFRA 1998 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FERTEC 54,7740,89
MSHA STANDARD- AIR: TWA 1 MG/M3
DTHL*: 1,29,71
OSHA PEL (GEN LUNG): 8H TWA 1 MG/M3
OSHA PEL (CONSTRUCT): 8H TWA 1 MG/M3
OSHA PEL (SHIPYARD): 8H TWA 1 MG/M3
OSHA PEL (FED): 8H TWA 1 MG/M3
OSHA PEL (CONSTR): 8H TWA 1 MG/M3
OSHA PEL (CONSTR): 8H TWA 1 MG/M3
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

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THIS MSDS IS FOR A COMPONENT OF CATALOG #: 661-11

CATALOG #: 660-2
NAME: SULFURIC ACID SOLUTION 2/3N

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
OEL-THAILAND; TWA 1 MG/M3 JAN93
OEL-TURKEY; TWA 1 MG/M3 JAN93
OEL-UNITED KINGDOM; TWA 1 MG/M3 JAN93
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK AGCHIL TVL
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK AGCHIL TVL
NIOSH REL TO SULFURIC ACID-AIR: 10H TWA 1 MG/M3
NIOSH* DHEHS *92-100,92
NOHS 1974: HZD 70870; NIS 313; TNE 54746; NOS 143; TNE 499446
NOES 1983: HZD 70870; NIS 313; TNE 54516; NOS 182; TNE 775587; TFE 173653
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA SECTION 8(E) RISK NOTIFICATION, SEHQ-0892-9247; SEHQ-0892-9248
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, OCTOBER 1995
NIOSH ANALYTICAL METHOD, 1994; ACIDS, INORGANIC, 7903
OSHA ANALYTICAL METHOD #ID-113

U.S. INFORMATION
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 BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.

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