

SULFURIC ACID ELECTROLYTE GRADE P18

REVISION OF: 01-06-90

LDC - HJH# 80-102, 80-105

HJH CORPORATION

P.O. BOX 410107

KCMO 64141

REQUESTED FOR:

17007963
MIDLAND METALS
ATTN: PURCHASING AGENT
DIV HJ HODES & CO
1219 LYDIA AVE
KANSAS CITY MO 64106

ORDER NO:
PROD NO: 04004036

VAN WATERS & ROGERS INC., SUBSIDIARY OF UNIVAR
1600 NORTON BLDG. SEATTLE, WA 98104-1564 (408) 435-8700

-----EMERGENCY ASSISTANCE-----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL CHEMTREC (800) 424-9300

-----FOR PRODUCT AND SALES INFORMATION-----

CONTACT YOUR LOCAL VAN WATERS & ROGERS BRANCH OFFICE

-----PRODUCT IDENTIFICATION-----

PRODUCT NAME: SULFURIC ACID
COMMON NAMES/SYNONYMS: SULFURIC ACID;
OIL OF VITRIOL; SULFURIC ACID > 93%;
SULFURIC ACID > 66 DEG BE;
SULFURIC ACID > 1.83 SPECIFIC GRAVITY

CAS NO.: 7664-93-9
VWR CODE: P1361

FORMULA: H₂SO₄
HAZARD RATING (NFPA 49)
HEALTH: 3
FIRE: 0
REACTIVITY: 2
SPECIAL: NO WATER

DATE ISSUED: 02/90
SUPERCEDES: 08/89
HAZARD RATING SCALE:
0=MINIMAL 3=SERIOUS
1=SLIGHT 4=SEVERE
2=MODERATE

-----HAZARDOUS INGREDIENTS-----

COMPONENT	CAS NO.	%	EXPOSURE LIMITS, MG/M3			HAZARD
			OSHA PEL	ACGIH TLV	OTHER LIMIT	
SULFURIC ACID	7664-93-9	>93	1	1	1 (DUPONT)	CORROSIVE

-----PHYSICAL PROPERTIES-----

BOILING POINT, DEG F: A = 529; B = 590; VAPOR PRESSURE, MM HG/20 DEG C: A, B = NIL
FREEZING POINT, DEG F: A = -20; B = 30; VAPOR DENSITY (AIR=1): N/A
SPECIFIC GRAVITY (WATER=1): A = 1.835; B = 1.84; WATER SOLUBILITY, %: COMPLETE
APPEARANCE AND ODOR: COLORLESS TO PALE YELLOW, OILY LIQUID. ODORLESS.
EVAPORATION RATE (BUTYL ACETATE=1): <1

A = 93% OR 66 DEG BE SULFURIC ACID; B = 99% SULFURIC ACID

-----FIRST AID MEASURES-----

INHALED: REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GET IMMEDIATE MEDICAL ATTENTION.

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IN CASE OF EYE CONTACT: IMMEDIATELY FLUSH EYES WITH LOTS OF RUNNING WATER FOR 30 MINUTES, LIFTING THE UPPER AND LOWER EYELIDS OCCASIONALLY. GET IMMEDIATE MEDICAL ATTENTION.

IN CASE OF SKIN CONTACT: IMMEDIATELY FLUSH SKIN WITH LOTS OF RUNNING WATER FOR 30 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES; WASH BEFORE REUSE. GET IMMEDIATE MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING. IF CONSCIOUS, GIVE LOTS OF WATER OR MILK. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

-----HEALTH HAZARD INFORMATION-----

PRIMARY ROUTES OF EXPOSURE: SKIN OR EYE CONTACT

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: VAPORS AND MISTS ARE EXTREMELY CORROSIVE TO THE NOSE, THROAT, AND MUCOUS MEMBRANES. BRONCHITIS, PULMONARY EDEMA, AND CHEMICAL PNEUMONITIS MAY OCCUR. IRRITATION, COUGHING, CHEST PAIN, AND DIFFICULTY IN BREATHING MAY OCCUR WITH BRIEF EXPOSURE, WHILE PROLONGED EXPOSURE MAY RESULT IN MORE SEVERE IRRITATION AND TISSUE DAMAGE. BREATHING HIGH CONCENTRATIONS MAY RESULT IN DEATH.

EYE CONTACT: VAPORS, LIQUID, AND MISTS ARE EXTREMELY CORROSIVE TO THE EYES. BRIEF CONTACT OF THE VAPORS WILL BE SEVERELY IRRITATING. BRIEF CONTACT OF THE LIQUID OR MISTS WILL SEVERELY DAMAGE THE EYES AND PROLONGED CONTACT MAY CAUSE PERMANENT EYE INJURY WHICH MAY BE FOLLOWED BY BLINDNESS.

SKIN CONTACT: VAPORS, MISTS, AND LIQUID ARE EXTREMELY CORROSIVE TO THE SKIN. VAPORS WILL SEVERELY IRRITATE THE SKIN AND LIQUID AND MISTS WILL SEVERELY BURN THE SKIN. PROLONGED LIQUID CONTACT WILL BURN OR DESTROY SURROUNDING TISSUE AND DEATH MAY ACCOMPANY BURNS WHICH EXTEND OVER LARGE PORTIONS OF THE BODY.

SWALLOWED: VAPORS, MISTS, AND LIQUID ARE EXTREMELY CORROSIVE TO THE MOUTH AND THROAT. SWALLOWING THE LIQUID BURNS THE TISSUES, CAUSES SEVERE ABDOMINAL PAIN, NAUSEA, VOMITING, AND COLLAPSE. SWALLOWING LARGE QUANTITIES CAN CAUSE DEATH.

CHRONIC EFFECTS OF EXPOSURE: MAY CAUSE EROSION OF THE TEETH, LESIONS ON THE SKIN, BRONCHIAL IRRITATION, COUGHING, AND PNEUMONIA.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: ACUTE AND CHRONIC RESPIRATORY DISEASES.

-----TOXICITY DATA-----

ORAL: RAT LD50 = 2,140 MG/KG

DERMAL: NO DATA FOUND

INHALATION: GUINEA PIG LC50 = 18 MG/M3

CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM, THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

OTHER DATA: ALTHOUGH ONE LIMITED STUDY OF REFINERY WORKERS DID SUGGEST A POSSIBLE LINK BETWEEN SULFURIC ACID EXPOSURE AND LARYNGEAL CANCER, THE STUDY WAS LIMITED BECAUSE OF THE SMALL NUMBER OF WORKERS AND THE MIXED EXPOSURES TO SEVERAL OTHER MATERIALS INCLUDING DIETHYL SULFATE, AN IARC AND NTP CARCINOGEN. BASED ON THE OVERALL WEIGHT OF EVIDENCE FROM ALL ANIMAL TOXICITY AND HUMAN EPIDEMIOLOGICAL STUDIES, NO CAUSE-AND-EFFECT RELATIONSHIP BETWEEN CANCER AND SULFURIC ACID EXPOSURE HAS BEEN SHOWN. INDIVIDUALS WITH PREEXISTING DISEASE OF THE LUNGS MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF EXCESSIVE EXPOSURES.

-----PERSONAL PROTECTION-----

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UTILIZATION: LOCAL MECHANICAL EXHAUST VENTILATION CAPABLE OF MAIN-
TAINING EMISSIONS AT THE POINT OF USE BELOW THE PEL.

RESPIRATORY PROTECTION: WEAR A NIOSH-APPROVED RESPIRATOR APPROPRIATE
FOR THE VAPOR OR MIST CONCENTRATION AT THE POINT OF USE. APPROPRIATE
RESPIRATORS MAY BE A FULL FACEPIECE AIR-PURIFYING CARTRIDGE
RESPIRATOR EQUIPPED FOR ACID GASES/MISTS, A SELF-CONTAINED
BREATHING APPARATUS IN THE PRESSURE DEMAND MODE, OR A SUPPLIED-AIR
RESPIRATOR.

EYE PROTECTION: CHEMICAL GOGGLES AND FULL FACESHIELD UNLESS A FULL
FACEPIECE RESPIRATOR IS ALSO WORN. IT IS GENERALLY RECOGNIZED THAT
CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH CHEMICALS BECAUSE
CONTACT LENSES MAY CONTRIBUTE TO THE SEVERITY OF AN EYE INJURY.

PROTECTIVE CLOTHING: ACID-RESISTANT SLICKER SUIT WITH RUBBER APRON,
RUBBER BOOTS WITH PANTS OUTSIDE, AND RUBBER GLOVES WITH GAUNTLETS.

OTHER PROTECTIVE MEASURES: AN EYEWASH AND SAFETY SHOWER SHOULD BE
NEARBY AND READY FOR USE.

-----FIRE AND EXPLOSION INFORMATION-----

FLASH POINT, DEG F: NONE FLAMMABLE LIMITS IN AIR, %
METHOD USED: N/A LOWER: N/A UPPER: N/A
EXTINGUISHING MEDIA: THIS MATERIAL IS NOT COMBUSTIBLE. USE EXIN-
GUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

SPECIAL FIRE FIGHTING PROCEDURES: FIRE FIGHTERS SHOULD WEAR SELF-
CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. USE WATER
SPRAY TO COOL NEARBY CONTAINERS AND STRUCTURES EXPOSED TO FIRE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: EXTINGUISH ALL NEARBY SOURCES OF
IGNITION SINCE FLAMMABLE HYDROGEN GAS WILL BE LIBERATED FROM CONTACT
WITH SOME METALS. KEEP WATER OUT OF CONTAINERS.

-----HAZARDOUS REACTIVITY-----

STABILITY: STABLE POLYMERIZATION: WILL NOT OCCUR
CONDITIONS TO AVOID: NONE

MATERIALS TO AVOID: ALKALIS, OXIDIZING OR REDUCING MATERIALS, CYANIDES,
SULFIDES, OR COMBUSTIBLE MATERIALS. REACTS WITH MANY METALS. CON-
CENTRATED ACID REACTS VIOLENTLY WITH WATER.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY LIBERATE CARBON MONOXIDE, CARBON
DIOXIDE, AND OXIDES OF SULFUR.

-----SPILL, LEAK, AND DISPOSAL PROCEDURES-----

ACTION TO TAKE FOR SPILLS OR LEAKS: WEAR ACID-RESISTANT SLICKER SUIT
AND COMPLETE PROTECTIVE EQUIPMENT INCLUDING RUBBER GLOVES, RUBBER BOOTS,
AND A SELF-CONTAINED BREATHING APPARATUS IN THE PRESSURE DEMAND MODE OR
A SUPPLIED-AIR RESPIRATOR. IF THE SPILL OR LEAK IS SMALL, A FULL FACE-
PIECE AIR-PURIFYING CARTRIDGE RESPIRATOR EQUIPPED FOR ACID GASES MAY BE
SATISFACTORY. IN ANY EVENT, ALWAYS WEAR EYE PROTECTION. REMOVE ALL
SOURCES OF IGNITION. FOR SMALL SPILLS OR DRIPS, MOP OR WIPE UP AND DIS-
POSE OF IN DOT-APPROVED WASTE CONTAINERS. FOR LARGE SPILLS, CONTAIN BY
MIXING WITH SOIL OR OTHER NON-COMBUSTIBLE ABSORBENT MATERIAL AND CARE-
FULLY NEUTRALIZE WITH SODA ASH OR LIME. IF SODA ASH IS USED, PROVIDE
ADEQUATE VENTILATION TO DISSIPATE THE CARBON DIOXIDE GAS. KEEP NON-
NEUTRALIZED MATERIAL OUT OF SEWERS, STORM DRAINS, SURFACE WATERS, AND
SOIL.
COMPLY WITH ALL APPLICABLE GOVERNMENTAL REGULATIONS ON SPILL REPORTING,
AND HANDLING AND DISPOSAL OF WASTE.

DISPOSAL METHODS: DISPOSE OF CONTAMINATED PRODUCT AND MATERIALS USED
CLEANING UP SPILLS OR LEAKS IN A MANNER APPROVED FOR THIS MATERIAL.
CONSULT APPROPRIATE FEDERAL, STATE AND LOCAL REGULATORY AGENCIES TO
ASCERTAIN PROPER DISPOSAL PROCEDURES.

NOTE: EMPTY CONTAINERS CAN HAVE RESIDUES, GASES AND MISTS AND ARE SUBJECT TO PROPER WASTE DISPOSAL, AS ABOVE.

-----SPECIAL PRECAUTIONS-----

STORAGE AND HANDLING PRECAUTIONS: STORE IN A COOL, DRY, WELL-VENTILATED PLACE AWAY FROM INCOMPATIBLE MATERIALS. VENT CONTAINER CAREFULLY, AS NEEDED, TO RELIEVE PRESSURE. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. DO NOT USE PRESSURE TO EMPTY CONTAINER. WASH THOROUGHLY AFTER HANDLING. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.

REPAIR AND MAINTENANCE PRECAUTIONS: DO NOT CUT, GRIND, WELD, OR DRILL ON OR NEAR THIS CONTAINER.

OTHER PRECAUTIONS: CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, WILL RETAIN PRODUCT RESIDUE AND VAPORS. ALWAYS OBEY HAZARD WARNINGS AND HANDLE EMPTY CONTAINERS AS IF THEY WERE FULL.

-----FOR ADDITIONAL INFORMATION-----

CONTACT MSDS COORDINATOR, VAN WATERS & ROGERS INC.
DURING BUSINESS HOURS, PACIFIC TIME (408)435-8700

-----OTHER REGULATORY INFORMATION-----

DO NOT DETACH THIS SECTION FROM THE MSDS AND BE SURE TO INCLUDE THIS SECTION WHEN COPYING THE MSDS.

THE COMPONENTS OF THIS PRODUCT ARE ON THE TSCA INVENTORY OF CHEMICAL SUBSTANCES.

THIS PRODUCT IS A TOXIC CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) CONSIDERED BY THE STATE OF CALIFORNIA'S SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65) AS CAUSING CANCER OR REPRODUCTIVE TOXICITY AND FOR WHICH WARNINGS ARE NOW REQUIRED:

CHEMICAL	CAS NO.	% WT
ARSENIC	7440-38-2	<0.4 PPM
CADMIUM	7440-48-9	<2.0 PPM
LEAD	7439-92-1	<0.01 PPM

UNDER MASSACHUSETTES RIGHT-TO-KNOW LAW, HAZARDOUS SUBSTANCE AND EXTRAORDINARILY HAZARDOUS SUBSTANCES COMPONENTS PRESENT IN THIS PRODUCT WHICH REQUIRES REPORTING ARE:

EXTRAORDINARILY HAZARDOUS SUBSTANCES CHEMICAL	CAS NO.	CONCENTRATION (=> 0.0001%)
SULFURIC ACID	7664-93-9	>93

UNDER THE PENNSYLVANIA RIGHT-TO-KNOW LAW, HAZARDOUS SUBSTANCES AND SPECIAL HAZARDOUS SUBSTANCES COMPONENTS PRESENT IN THIS PRODUCT WHICH REQUIRE REPORTING ARE:

SPECIAL HAZARDOUS SUBSTANCES CHEMICAL	CAS NO.	CONCENTRATION (=> 0.01)
SULFURIC ACID	7664-93-9	>93

-----NOTICE-----

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INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE
FACTORY AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMAT-
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SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF
THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICA-
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INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT
RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER
PROCESS.

-----REVISION-----

02/90: ADDED HHIS HAZARD RATING, AUTOIGNITION TEMP., PH, % VOLATILE,
ECOLOGICAL INFO., OTHER REGULATORY INFO. (MASS. AND PENN.
RIGHT-TO-KNOW LAW, TSCA STATEMENT).
DELETED WATER % WT, PEL, TLV, LIMIT AND HAZARD FROM HAZARDOUS
INGREDIENTS COMPONENT LIST.

**** E N D O F M S D S ****

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