

4-13-06



**SIGMA-ALDRICH**

SIGMA CHEMICAL COMPANY  
POST OFFICE BOX 14508  
SAINT LOUIS, MISSOURI 63178, USA

ATTN: SAFETY DIRECTOR

EMERGENCY PHONE 1-314-771-5765

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WHITEWATER WI 53190-1705

DATE 11/19/98  
CUST#: 2-097-94816  
PO#:

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

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

CATALOG #: 920-1  
NAME: HYDROCHLORIC ACID SOLUTION 1.0N

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

CAS #: 7647-01-0  
EC NO: 231-595-7

SYNONYMS

ACIDE CHLORHYDRIQUE (FRENCH) \* ACIDO CLORIDRICO (ITALIAN) \* ANHYDROUS  
HYDROCHLORIC ACID \* CHLOORWATERSTOF (DUTCH) \* CHLOROHYDRIC ACID \*  
CHLOROWODOR (POLISH) \* CHLORWASSERSTOFF (GERMAN) \* HYDROCHLORIDE \*  
HYDROGEN CHLORIDE (ACGIH:OSHA) \* MURIATIC ACID \* SPIRITS OF SALT \*

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

LABEL PRECAUTIONARY STATEMENTS

CORROSIVE  
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.  
CAUSES BURNS.  
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF  
WATER AND SEEK MEDICAL ADVICE.  
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.  
WASH CONTAMINATED CLOTHING BEFORE REUSE.  
DISCARD CONTAMINATED SHOES.

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

EXTINGUISHING MEDIA  
NONCOMBUSTIBLE.

USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

SPECIAL FIREFIGHTING PROCEDURES

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CATALOG #: 920-1  
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WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.  
USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS.

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.

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION - - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.  
SAFETY SHOWER AND EYE BATH.  
USE ONLY IN A CHEMICAL FUME HOOD.  
DO NOT BREATHE VAPOR.  
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.  
AVOID PROLONGED OR REPEATED EXPOSURE.  
WASH THOROUGHLY AFTER HANDLING.  
CORROSIVE.  
TOXIC.  
KEEP TIGHTLY CLOSED.  
STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR  
CLEAR COLORLESS LIQUID

PHYSICAL PROPERTIES  
VAPOR PRESSURE: 190MM 25 C  
SPECIFIC GRAVITY: 1.017

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

INCOMPATIBILITIES  
BASES  
AMINES  
ALKALI METALS  
COPPER, COPPER ALLOYS  
ALUMINUM  
CORRODES STEEL

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS  
TOXIC FUMES OF:

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CATALOG #: 920-1  
NAME: HYDROCHLORIC ACID SOLUTION 1.0N

HYDROGEN CHLORIDE GAS

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

ACUTE EFFECTS

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.  
CAUSES BURNS.  
MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES AND SKIN.  
INHALATION MAY RESULT IN 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.

RTECS #: MW4025000  
HYDROCHLORIC ACID

IRRITATION DATA

EYE-RBT 5 MG/30S RINSE MLD TXCYAC 23,281,1982

TOXICITY DATA

IHL-HMN LCLO:1300 PPM/30M	29ZWAE - ,207,1968
IHL-HMN LCLO:3000 PPM/5M	TABIA2 3,231,1933
UNR-MAN LDLO:81 MG/KG	85DCAI 2,73,1970
IHL-RAT LC50:3124 PPM/1H	AMRL** TR-74-78,1974
IHL-MUS LC50:1108 PPM/1H	JCTODH 3,61,1976
IPR-MUS LD50:40142 UG/KG	COREAF 256,1043,1963
ORL-RBT LD50:900 MG/KG	BIZEA2 134,437,1923

TARGET ORGAN DATA

SENSE ORGANS AND SPECIAL SENSES (OTHER EYE EFFECTS)  
LUNGS, THORAX OR RESPIRATION (RESPIRATORY STIMULATION)  
SKIN AND APPENDAGES (AFTER SYSTEMIC EXPOSURE: DERMATITIS, OTHER)  
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 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 - - - - -

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CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

EC INDEX NO: 017-002-00-2

CORROSIVE

R 23/24/25

TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.

R 34

CAUSES BURNS.

S 26

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.

S 45

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

S 36/37/39

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

S 23

DO NOT BREATHE VAPOR.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-CL 7.5 MG/M3 (5 PPM)

DTLVS\* TLV/BEI 1997

IARC CANCER REVIEW:HUMAN INADEQUATE EVIDENCE IMEMDT 54,189,1992

IARC CANCER REVIEW:ANIMAL INADEQUATE EVIDENCE IMEMDT 54,189,1992

IARC CANCER REVIEW:GROUP 3 IMEMDT 54,189,1992

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION

FEREAC 54,7740,1989

MSHA STANDARD:AIR-CL 5 PPM (7 MG/M3)

DTLVS\* 3,129,1971

OSHA PEL (GEN INDU):CL 5 PPM (7 MG/M3)

CFRGBR 29,1910.1000,1994

OSHA PEL (CONSTRUC):CL 5 PPM (7 MG/M3)

CFRGBR 29,1926.55,1994

OSHA PEL (SHIPYARD):CL 5 PPM (7 MG/M3)

CFRGBR 29,1915.1000,1993

OSHA PEL (FED CONT):CL 5 PPM (7 MG/M3)

CFRGBR 41,50-204.50,1994

OEL-AUSTRALIA:TWA 5 PPM (7 MG/M3) JAN 1993

OEL-AUSTRIA:TWA 5 PPM (7 MG/M3) JAN 1993

OEL-BELGIUM:STEL 5 PPM (7.7 MG/M3) JAN 1993

OEL-DENMARK:STEL 5 PPM (7 MG/M3) JAN 1993

OEL-FINLAND:STEL 5 PPM (7 MG/M3);SKIN JAN 1993

OEL-FRANCE:STEL 5 PPM (7.5 MG/M3) JAN 1993

OEL-GERMANY:TWA 5 PPM (7 MG/M3) JAN 1993

OEL-HUNGARY:STEL 5 MG/M3 JAN 1993

OEL-JAPAN:STEL 5 PPM (7.5 MG/M3) JAN 1993

OEL-THE NETHERLANDS:TWA 5 PPM (7 MG/M3) JAN 1993

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OEL-THE PHILIPPINES:TWA 5 PPM (7 MG/M3) JAN 1993  
 OEL-POLAND:TWA 5 MG/M3 JAN 1993  
 OEL-RUSSIA:STEL 5 PPM (5 MG/M3) JAN 1993  
 OEL-SWEDEN:STEL 5 PPM (8 MG/M3) JAN 1993  
 OEL-SWITZERLAND:TWA 5 PPM (7.5 MG/M3);STEL 10 PPM (15 MG/M3) JAN 1993  
 OEL-THAILAND:TWA 5 PPM (7 MG/M3) JAN 1993  
 OEL-TURKEY:TWA 5 PPM (7 MG/M3) JAN 1993  
 OEL-UNITED KINGDOM:TWA 5 PPM (7 MG/M3);STEL 5 PPM (7 MG/M3) JAN 1993  
 OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV  
 OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV  
 NIOSH REL TO HYDROGEN CHLORIDE-AIR:CL 5 PPM  
 NIOSH\* DHHS #92-100,1992  
 NOHS 1974: HZD 38580; NIS 360; TNF 87434; NOS 156; TNE 824985  
 NOES 1983: HZD 38580; NIS 321; TNF 60309; NOS 183; TNE 1238572; TFE 388130  
 EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.--SA7/SHE  
 EPA TSCA SECTION 8(B) CHEMICAL INVENTORY  
 EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES  
 EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-9246  
 ON EPA IRIS DATABASE  
 EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1998  
 NIOSH ANALYTICAL METHOD, 1994: ACIDS, INORGANIC, 7903

U.S. INFORMATION

4.0% HYDROCHLORIC ACID 7647-01-0  
 THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

SECTION 16. - - - - - OTHER INFORMATION - - - - -

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