

Product Number: **H1758**

Product Name: **Hydrochloric acid**

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Product Info

Valid 05/2003 - 07/2003

[Description / Pricing](#)

Sigma Chemical Co.
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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

SECTION 1. - - - - - CHEMICAL IDENTIFICATION - - - - -
 CATALOG #: H1758
 NAME: HYDROCHLORIC ACID
 SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -
 CAS #: 7647-01-0
 MF: HCL
 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
 TOXIC
 TOXIC BY INHALATION.
 CAUSES BURNS.
 IRRITATING TO RESPIRATORY SYSTEM.
 TOXIC IF INHALED.
 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).
 MAY DEVELOP PRESSURE.
 SECTION 4. - - - - - FIRST-AID MEASURES - - - - -
 IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
 CALL A PHYSICIAN.
 IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
 RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
 IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER
 FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND
 SHOES. CALL A PHYSICIAN.
 IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER
 FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING
 THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.
 SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -
 EXTINGUISHING MEDIA
 NONCOMBUSTIBLE.
 USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
 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 - - - - -
 WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS AND HEAVY
 RUBBER GLOVES.
 ABSORB ON SAND OR VERMICULITE AND PLACE IN CLOSED CONTAINERS FOR
 DISPOSAL.
 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 - - - - -
 AVOID BREATHING VAPOR.

AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
SAFETY SHOWER AND EYE BATH.
MECHANICAL EXHAUST REQUIRED.
NIOSH/MSHA-APPROVED RESPIRATOR.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
CHEMICAL SAFETY GOGGLES.
WASH THOROUGHLY AFTER HANDLING.
DISCARD CONTAMINATED SHOES.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.

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

LIQUID.
PHYSICAL PROPERTIES

BOILING POINT: 110 C
MELTING POINT: -114.2 C
VAPOR PRESSURE: 166.991 MMHG @ 21.1 C
SPECIFIC GRAVITY: 1.2 G
VAPOR DENSITY: 1.266 G/L
FREEZING POINT: -24.4 C
SWISS POISON CLASS: 2

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

STABILITY
STABLE.

INCOMPATIBILITIES

BASES
AMINES
ALKALI METALS
COPPER, COPPER ALLOYS
ALUMINUM

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

HYDROGEN CHLORIDE GAS
HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.

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

ACUTE EFFECTS

CAUSES BURNS.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
MAY BE HARMFUL IF INHALED.
MATERIAL IS EXTREMELY DESTRUCTIVE TO THE TISSUE OF THE MUCOUS MEMBRANES
AND UPPER RESPIRATORY TRACT.
MAY BE HARMFUL IF SWALLOWED.
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

ORL-MAN LDLO:2857 UG/KG	MJAUAJ 158,28,1993
ORL-WMN LDLO:420 UL/KG	JJTOEX 9,351,1996
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)
VASCULAR (BP LOWERING NOT CHARACTERIZED IN AUTONOMIC SECTION)
LUNGS, THORAX OR RESPIRATION (RESPIRATORY DEPRESSION)
LUNGS, THORAX OR RESPIRATION (RESPIRATORY STIMULATION)
GASTROINTESTINAL (CHANGES IN STRUCTURE OR FUNCTION OF ESOPHAGUS)
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 - - - - -
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF
THIS MATERIAL.

OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.
SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.
SECTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

EC INDEX NO: 017-002-00-2
TOXIC
R 34
CAUSES BURNS.
R 37
IRRITATING TO RESPIRATORY SYSTEM.
S 26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
S 36/37/39
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.
S 45
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-CL 5 PPM DTLVS* TLV/BEI,1999
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), JAN1993
OEL-AUSTRIA: MAK 5 PPM (7 MG/M3), JAN1999
OEL-BELGIUM: STEL 5 PPM (7.7 MG/M3), JAN1993
OEL-DENMARK: TWA 5 PPM (7 MG/M3), JAN1999
OEL-FINLAND: STEL 5 PPM (7 MG/M3), SKIN, JAN1999
OEL-FRANCE: VLE 5 PPM (7.5 MG/M3), JAN1999
OEL-GERMANY: MAK 5 PPM (7 MG/M3), JAN1999
OEL-HUNGARY: STEL 5 MG/M3, JAN1993
OEL-JAPAN: STEL 5 PPM (7.5 MG/M3), JAN1999
OEL-NORWAY: TWA 5 PPM (7 MG/M3), JAN1999
OEL-THE PHILIPPINES: TWA 5 PPM (7 MG/M3), JAN1993
OEL-POLAND: MAC(TWA) 5 MG/M3, CEILING 7 MG/M3, JAN1999
OEL-RUSSIA: STEL 5 PPM (5 MG/M3), JAN1993
OEL-SWEDEN: STEL 5 PPM (8 MG/M3) JAN1999
OEL-SWITZERLAND: MAK-W 5 PPM (7.5 MG/M3), KZG-W 10 PPM (15 MG/M3),
JAN1999
OEL-THAILAND: TWA 5 PPM (7 MG/M3), JAN1993
OEL-TURKEY: TWA 5 PPM (7 MG/M3), JAN1993
OEL-UNITED KINGDOM: TWA 1 PPM (2 MG/M3), STEL 5 PPM (8 MG/M3), SEP2000
OEL IN ARGENTINA, 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, JANUARY 2001
NIOSH ANALYTICAL METHOD, 1994: ACIDS, INORGANIC, 7903

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

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