



rev: 7/19/1996
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ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

SIGMA-ALDRICH

ATTN: SAFETY DIRECTOR
UNIVERSITY OF NEVADA/RENO

EMERGENCY PHONE 1-414-273-3850

CHARLIE FONG
SAFETY AND LOSS CONTROL
ARTEMISIA BUILDING
RENO NV 89557

DATE 07/09/96
CUST#: 351253
PO#: ICHE041600

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 - - - - -

CATALOG #: 15775-9
NAME: SULFUR MONOCHLORIDE, 98%

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

CAS #: 10025-67-9
MF: CL2S2
EC NO: 233-036-2

SYNONYMS

DISULFUR DICHLORIDE * SIARKI CHLOREK (POLISH) * SULFUR MONOCHLORIDE
(ACGIH:OSHA) * SULFUR SUBCHLORIDE * THIOSULFUROUS DICHLORIDE *

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

LABEL PRECAUTIONARY STATEMENTS

TOXIC
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
CAUSES BURNS.
REACTS VIOLENTLY WITH WATER.
LACHRYMATOR.
UNPLEASANT ODOR.
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF WATER. TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.
STORE UNDER NITROGEN.
KEEP TIGHTLY CLOSED.

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.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

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

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12143

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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 2

CATALOG #: 15775-9
NAME: SULFUR MONOCHLORIDE, 98%

EXTINGUISHING MEDIA
DRY CHEMICAL POWDER.
DO NOT USE WATER.

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

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
WATER HYDROLYZES MATERIAL LIBERATING ACIDIC GAS WHICH IN CONTACT
WITH METAL SURFACES CAN GENERATE FLAMMABLE AND/OR EXPLOSIVE
HYDROGEN GAS.
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
CONTAINER EXPLOSION MAY OCCUR UNDER FIRE CONDITIONS.

SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES- - - - -

EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, 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.

ADDITIONAL INFORMATION

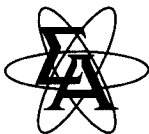
REACTS VIOLENTLY WITH ALUMINUM, ANTIMONY, ANTIMONY SULFIDE, ARSENIC
SULFIDE, CHROMYL CHLORIDE, METHYL SULFOXIDE (DMSO), TIN, SODIUM
PEROXIDE, PHOSPHOROUS(III) OXIDE, ALKENES, TERPENE\$, UNSATURATED
GLYCERIDES, MERCURY OXIDE, DIMETHYLFORMAMIDE (DMF), ACETONE.

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.
WASH THOROUGHLY AFTER HANDLING.
CORROSIVE.
LACHRYMATOR.
TOXIC.
KEEP TIGHTLY CLOSED.
UNPLEASANT ODOR.
DO NOT ALLOW CONTACT WITH WATER.

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12144



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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 3

CATALOG #: 15775-9
NAME: SULFUR MONOCHLORIDE, 98%

STORE UNDER NITROGEN.
STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR
YELLOW LIQUID

PHYSICAL PROPERTIES

BOILING POINT: 138 C
MELTING POINT: -80 C
FLASHPOINT: NONE
AUTOIGNITION TEMPERATURE: 451 F 232C
VAPOR PRESSURE: 6.8MM 20 C 44MM 55 C
SPECIFIC GRAVITY: 1.688
VAPOR DENSITY: 4.7

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

INCOMPATIBILITIES

ACIDS
BASES
ALCOHOLS
PEROXIDES
AMINES
READILY HYDROLYZED. -
REACTS VIOLENTLY WITH WATER.
AVOID CONTACT WITH METALS.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

TOXIC FUMES OF:
HYDROGEN CHLORIDE GAS
SULFUR OXIDES
HYDROGEN SULFIDE GAS

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.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

RTECS #: WS4300000

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12145

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SIGMA-ALDRICH
RESEARCH

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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 PAGE 4

CATALOG #: 15775-9
NAME: SULFUR MONOCHLORIDE, 98%

SULFUR CHLORIDE

TOXICITY DATA

IHL-MUS LC50:150 PPM IPSTB3 3,93,76

ADDITIONAL INFORMATION

INHALATION-RAT(FEMALE) LC50: 697PPM/1HR.
INHALATION-RAT(MALE) LC50: 327PPM/1HR.
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 - - - - -

CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

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

EUROPEAN INFORMATION

EC INDEX NO: 016-012-00-4

TOXIC

R 14

REACTS VIOLENTLY WITH WATER.

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).

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12146



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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 5

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NAME: SULFUR MONOCHLORIDE, 98%

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
ACGIH TLV-CL 1 PPM
OSHA PEL (GEN INDU):8H TWA 1 PPM (6 MG/M3) 851NA8 6,1464,91
CFRGR 29,1910.1000,94
OSHA PEL (CONSTRUC):8H TWA 1 PPM (6 MG/M3)
CFRGR 29,1926.55,94
OSHA PEL (SHIPYARD):8H TWA 1 PPM (6 MG/M3)
CFRGR 29,1915.1000,93
OSHA PEL (FED CONT):8H TWA 1 PPM (6 MG/M3)
CFRGR 41,50-204.50,94
OEL-AUSTRALIA:TWA 1 PPM (6 MG/M3) JAN93
OEL-BELGIUM:STEL 1 PPM (5.5 MG/M3) JAN93
OEL-DENMARK:TWA 1 PPM (6 MG/M3) JAN93
OEL-FINLAND:TWA 1 PPM (6 MG/M3);STEL 2 PPM (12 MG/M3);SKIN JAN93
OEL-GERMANY:TWA 1 PPM (6 MG/M3) JAN93
OEL-HUNGARY:STEL 5 MG/M3 JAN93
OEL-JAPAN:STEL 1 PPM (5.5 MG/M3) JAN93
OEL-THE NETHERLANDS:TWA 1 PPM (6 MG/M3) JAN93
OEL-THE PHILIPPINES:TWA 6 MG/M3 JAN93
OEL-POLAND:TWA 5 MG/M3 JAN93
OEL-RUSSIA:STEL 1 PPM (0.3 MG/M3);SKIN JAN93
OEL-SWITZERLAND:TWA 1 PPM (6 MG/M3);STEL 2 PPM (12 MG/M3) JAN93
OEL-UNITED KINGDOM:TWA 1 PPM (6 MG/M3);STEL 3 PPM (18 MG/M3) JAN93
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO SULFUR MONOCHLORIDE-AIR:CL 1 PPM
NIOSH* DHHS #92-100,92
NOES 1983: HZD X5495; NIS 21; TNF 964; NOS 28; TNE 28182; TFE 2203
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1996

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

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12147

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