



SIGMA-ALDRICH

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
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DATE 07/30/96
CUST#: 938609
PO#: 82809

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. - - - - - C H E M I C A L I D E N T I F I C A T I O N - - - - -

CATALOG #: 12543-1
NAME: CYCLOHEXENE, 99%

SECTION 2. - - - - - C O M P O S I T I O N / I N F O R M A T I O N O N I N G R E D I E N T S - - - - -

CAS #: 110-83-8
MF: C₆H₁₀
EC NO: 203-807-8

SYNONYMS

BENZENETETRAHYDRIDE * BENZENE, TETRAHYDRO- * CYCLOHEXENE (ACGIH:DOT;
OSHA) * CYKLOHEKSEN (POLISH) * HEXANAPHTHYLENE * TETRAHYDROBENZENE *
1,2,3,4-TETRAHYDROBENZENE * UN2256 (DOT) *

SECTION 3. - - - - - H A Z A R D S I D E N T I F I C A T I O N - - - - -

BELOW PRECAUTIONARY STATEMENTS

FLAMMABLE (USA)

HIGHLY FLAMMABLE (EU)

IRRITANT

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.

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

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

SECTION 4. - - - - - F I R S T - A I D M E A S U R E S - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF
WATER FOR AT LEAST 15 MINUTES.

IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS
AMOUNTS OF WATER.

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. - - - - - F I R E F I G H T I N G M E A S U R E S - - - - -

EXTINGUISHING MEDIA

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

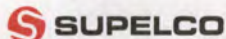
SPECIAL FIREFIGHTING PROCEDURES

USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS.

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

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EXTREMELY FLAMMABLE.
VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND
FLASH BACK.

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

EVACUATE AREA.
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.

ADDITIONAL INFORMATION

CAUTION: FORMS EXPLOSIVE PEROXIDES ON PROLONGED STORAGE.

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.
MECHANICAL EXHAUST REQUIRED.
DO NOT BREATHE VAPOR.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
WASH THOROUGHLY AFTER HANDLING.
IRRITANT.
KEEP TIGHTLY CLOSED.
KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.
STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR
COLORLESS LIQUID

PHYSICAL PROPERTIES

BOILING POINT: 83 C
MELTING POINT: -104 C
FLASHPOINT: - 10 F
12C

EXPLOSION LIMITS IN AIR:
UPPER

5%

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CATALOG #: 12543-1
NAME: CYCLOHEXENE, 99%
LOWER
AUTOIGNITION TEMPERATURE: 590 F 1% 309C
VAPOR PRESSURE: 160MM 20 C
SPECIFIC GRAVITY: 0.811
VAPOR DENSITY: 2.8

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

INCOMPATIBILITIES
OXIDIZING AGENTS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
CARBON MONOXIDE, CARBON DIOXIDE

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

ACUTE EFFECTS
MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.
VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
CAUSES SKIN IRRITATION.
EXPOSURE CAN CAUSE:
NAUSEA, DIZZINESS AND HEADACHE

RTECS #: GW2500000
CYCLOHEXENE

TOXICITY DATA
UNR-RAT LD50: 2 GM/KG GTPZAB 29(12), 53, 85
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 - - - - -

BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND
SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL IS HIGHLY
FLAMMABLE.
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

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SUPELCO

**SIGMA
DIAGNOSTICS**



**SIGMA-ALDRICH
RESEARCH**

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NAME: CYCLOHEXENE, 99%

HIGHLY FLAMMABLE

IRRITANT

R 36/37/38

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

HIGHLY FLAMMABLE

S 16

KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.

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.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-TWA 300 PPM

85INA8 6,362,91

MSHA STANDARD-AIR:TWA 300 PPM (1015 MG/M3)

DTLVS* 3,66,71

OSHA PEL (GEN INDU):8H TWA 300 PPM (1015 MG/M3)

CFRGBR 29,1910.1000,94

OSHA PEL (CONSTRUC):8H TWA 300 PPM (1015 MG/M3)

CFRGBR 29,1926.55,94

OSHA PEL (SHIPYARD):8H TWA 300 PPM (1015 MG/M3)

CFRGBR 29,1915.1000,93

OSHA PEL (FED CONT):8H TWA 300 PPM (1015 MG/M3)

CFRGBR 41,50-204.50,94

OEL-AUSTRALIA:TWA 300 PPM (1015 MG/M3) JAN93

OEL-AUSTRIA:TWA 300 PPM (1015 MG/M3) JAN93

OEL-BELGIUM:TWA 300 PPM (1010 MG/M3) JAN93

OEL-DENMARK:TWA 300 PPM (1015 MG/M3) JAN93

OEL-FINLAND:TWA 300 PPM (1015 MG/M3);STEL 375 PPM (1270 MG/M3) JAN93

OEL-FRANCE:TWA 300 PPM (1015 MG/M3) JAN93

OEL-GERMANY:TWA 300 PPM (1015 MG/M3) JAN93

OEL-THE NETHERLANDS:TWA 300 PPM (1015 MG/M3) JAN93

OEL-THE PHILIPPINES:TWA 300 PPM (1015 MG/M3) JAN93

OEL-POLAND:TWA 300 MG/M3 JAN93

OEL-RUSSIA:STEL 50 MG/M3 JAN93

OEL-SWITZERLAND:TWA 300 PPM (1015 MG/M3);STEL 600 PPM JAN93

OEL-TURKEY:TWA 300 PPM (1050 MG/M3) JAN93

OEL-UNITED KINGDOM:TWA 300 PPM (1015 MG/M3) JAN93

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV

NIOSH REL TO CYCLOHEXENE-AIR:10H TWA 300 PPM

NIOSH* DHHS #92-100,92

NOHS 1974: HZD 21705; NIS 1; TNF 16; NOS 7; TNE 529

NOES 1983: HZD 21705; NIS 1; TNF 40; NOS 1; TNE 517; TFE 239

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY

EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES

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CATALOG #: 12543-1
NAME: CYCLOHEXENE, 99%

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1996
NIOSH ANALYTICAL METHOD, 1994: HYDROCARBONS, BP 36-126 DEGREE C, 1500

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. ALDRICH 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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