



chemists helping chemists in research & industry

aldrich chemical co.

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DATE: 01/31/92
CUST#: 938609
PO#: 70502

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

IDENTIFICATION

PRODUCT #: 29608-2
CAS #: 60-29-7
MF: C4H10O

NAME: ETHER, ANHYDROUS, 99+%

SYNONYMS

AETHER * ANAESTHETIC ETHER * ANESTHESIA ETHER * ANESTHETIC ETHER *
DIAETHYLAETHER (GERMAN) * DIETHYL ETHER * DIETHYL ETHER (DOT, OSHA) *
DIETHYL OXIDE * DWUETYLOWY ETER (POLISH) * ETERE ETILICO (ITALIAN) *
ETHER * ETHER ETHYLIQUE (FRENCH) * ETHOXYETHANE * ETHYL ETHER * ETHYL
ETHER (ACGIH, DOT, OSHA) * OXYDE D'ETHYLE (FRENCH) * RCRA WASTE NUMBER
U117 * SOLVENT ETHER * UN 1155 (DOT) *

TOXICITY HAZARDS

RTECS NO: KI5775000

ETHANE, 1,1'-OXYBIS-

IRRITATION DATA

EYE-HMN 100 PPM
SKN-RBT 360 MG DPEN MLD
EYE-RBT 100 MG MOD
SKN-GPG 50 MG/24H SEV

JIHTAB 25,282,43
UCDS** 4/5/73
FEPRA7 35,729,76
HIFUAG 22,373,80

TOXICITY DATA

ORL-MAN LDLO: 260 MG/KG
ORL-RAT LD50: 1215 MG/KG
IHL-RAT LC50: 73000 PPM/2H
IHL-MUS LC50: 6500 PPM/99M
IPR-MUS LD50: 2420 MG/KG
IVN-MUS LD50: 996 MG/KG

85DCAI 2,73,70
TXAPA9 19,699,71
TXAPA9 17,275,70
TXAPA9 17,275,70
PWPSA8 27,511,84
JPMSAE 67,566,78

REVIEWS, STANDARDS, AND REGULATIONS

ACGIH TLV-TWA 400 PPM; STEL 500 PPM 85INA8 5,259,86
IARC CANCER REVIEW: ANIMAL NO ADEQUATE DATA IMSUDL 7,93,87
MSHA STANDARD-AIR: TWA 400 PPM (1200 MG/M3) DTLVS* 3,106,71
OSHA PEL: 8H TWA 400 PPM (1200 MG/M3) FEREAC 54,2923,89
OSHA PEL FINAL: 8H TWA 400 PPM (1200 MG/M3); STEL 500 PPM (1500 MG/M3)
FEREAC 54,2923,89
NOHS 1974: HZD 32590; NIS 112; TNF 17282; NOS 82; TNE 161572
NOES 1983: HZD 32590000; TNF 104; NIS 21212; NOS 78; TNE 272746; TFE
35683
EPA GENETOX PROGRAM 1988, POSITIVE: E COLI POLA WITHOUT S9
EPA GENETOX PROGRAM 1988, NEGATIVE: ASPERGILLUS-FORWARD MUTATION;
SPERM MORPHOLOGY-MOUSE
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: HISTIDINE REVERSION-AMES TEST
EPA TSCA CHEMICAL INVENTORY, JUNE 1990
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, MARCH 1991
NIOSH ANALYTICAL METHODS: SEE ETHYL ETHER, 1610

CONTINUED ON NEXT PAGE

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PAGE 2

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CAS #: 60-29-7
MF: C4H100

NAME: ETHER, ANHYDROUS, 99+%

TOXICITY HAZARDS

TARGET ORGAN DATA

SENSE ORGANS AND SPECIAL SENSES (OTHER OLFACTION EFFECTS)
BIOCHEMICAL EFFECTS (OTHER TRANSFERASES)

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS)
DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

HEALTH HAZARD DATA

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:
COUGHING, CHEST PAINS, DIFFICULTY IN BREATHING.
NAUSEA, HEADACHE AND VOMITING
TARGET ORGAN(S):
CENTRAL NERVOUS SYSTEM

CHRONIC EFFECTS

LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS.

FIRST AID

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.
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.

PHYSICAL DATA

BOILING PT: 34.6 C
SPECIFIC GRAVITY: 0.706
VAPOR DENSITY: 2.6
VAPOR PRESSURE: 442 MM @ 20 C
1276 MM @ 50 C

APPEARANCE AND ODOR
COLORLESS LIQUID

FIRE AND EXPLOSION HAZARD DATA

FLASHPOINT: -40 F

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FIRE AND EXPLOSION HAZARD DATA

AUTOIGNITION TEMPERATURE: 320 F

LOWER EXPLOSION LEVEL: 1.8%

UPPER EXPLOSION LEVEL: 48%

EXTINGUISHING MEDIA

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO

PREVENT CONTACT WITH SKIN AND EYES.

USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS.

UNUSUAL FIRE AND EXPLOSION HAZARDS

EXTREMELY FLAMMABLE.

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

CONTAINER EXPLOSION MAY OCCUR UNDER FIRE CONDITIONS.

REACTIVITY DATA

INCOMPATIBILITIES

OXIDIZING AGENTS

HEAT

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

TOXIC FUMES OF:

CARBON MONOXIDE, CARBON DIOXIDE

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

EVACUATE AREA.

SHUT OFF ALL SOURCES OF IGNITION.

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.

COVER WITH AN ACTIVATED CARBON ADSORBENT, TAKE UP AND PLACE IN CLOSED CONTAINERS. TRANSPORT OUTDOORS.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

WASTE DISPOSAL METHOD

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

--- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE ---

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT

CONTINUED ON NEXT PAGE



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--- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE ---

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.

HARMFUL LIQUID.

IRRITANT.

POSSIBLE MUTAGEN.

KEEP TIGHTLY CLOSED.

KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.

FORMS EXPLOSIVE PEROXIDES ON PROLONGED STORAGE.

REFRIGERATE.

LABEL PRECAUTIONARY STATEMENTS

FLAMMABLE (USA DEFINITION)

EXTREMELY FLAMMABLE (EUROPEAN DEFINITION)

HARMFUL

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

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

MAY FORM EXPLOSIVE PEROXIDES.

POSSIBLE RISK OF IRREVERSIBLE EFFECTS.

POSSIBLE MUTAGEN.

TARGET ORGAN(S):

CENTRAL NERVOUS SYSTEM

REFRIGERATE.

HYGROSCOPIC

HANDLE AND STORE UNDER NITROGEN.

KEEP AWAY FROM SOURCES OF IGNITION. NO SMOKING.

TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGES.

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF

WATER AND SEEK MEDICAL ADVICE.

WEAR SUITABLE PROTECTIVE CLOTHING.

IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE (SHOW THE LABEL WHERE

POSSIBLE).

DO NOT BREATHE FUMES.

----- ADDITIONAL PRECAUTIONS AND COMMENTS -----

ADDITIONAL INFORMATION

DANGER: TENDS TO FORM EXPLOSIVE PEROXIDES ESPECIALLY WHEN ANHYDROUS.
INHIBITED WITH 0.0001% BHT.

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