



chemists helping chemists in research & industry

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DATE: 09/12/95
CUST#: 938609
PO#: 80409

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 - - - - -

PRODUCT #: 36280-8 NAME: ETHYL ALCOHOL, DENATURED

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

CAS #: 64-17-5
MF: C2H6O

ADDITIONAL INFORMATION

CONTAINS METHYL ALCOHOL, CHEMICAL ABSTRACTS REGISTRY NUMBER 67-56-1.
CONTAINS 2-PROPANOL (ISOPROPYL ALCOHOL), CHEMICAL ABSTRACTS REGISTRY
NUMBER 67-63-0.

RECS DATA AND SYNONYMS SUPPLIED ARE FOR THE MOST ABUNDANT HAZARDOUS
COMPONENT OF THIS PRODUCT.

SYNONYMS

ABSOLUTE ETHANOL * AETHANOL (GERMAN) * AETHYLALKOHOL (GERMAN) *
ALCOHOL * ALCOHOLS, N.O.S. (UN1987) (DOT) * ALCOHOL, ANHYDROUS *
ALCOHOL DEHYDRATED * ALCOOL ETHYLIQUE (FRENCH) * ALCOOL ETILICO
(ITALIAN) * ALCOHOLS, TOXIC, N.O.S. (UN1986) (DOT) * ALGRAIN *
ALKOHOL (GERMAN) * ALKOHOLU ETYLOWEGO (POLISH) * ANHYDROL * COLOGNE
SPIRIT * ETANOL (ITALIAN) * ETHANOL (DOT, OSHA) * ETHANOL SOLUTIONS
(UN1170) (DOT) * ETHYL ALCOHOL (ACGIH, DOT, OSHA) * ETHYL ALCOHOL
ANHYDROUS * ETHYL ALCOHOL SOLUTIONS (UN1170) (DOT) * ETHYL HYDRATE *
ETHYL HYDROXIDE * ETYLOWY ALKOHOL (POLISH) * FERMENTATION ALCOHOL *
GRAIN ALCOHOL * JAYSOL * JAYSOL S * METHYL CARBINOL * MOLASSES ALCOHOL
* NCI-C03134 * POTATO ALCOHOL * SD ALCOHOL 23-HYDROGEN * SPIRITS OF
WINE * SPIRT * TECSOL * UN1170 (DOT) * UN1986 (DOT) * UN1987 (DOT) *

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

LABEL PRECAUTIONARY STATEMENTS

FLAMMABLE (USA DEFINITION)
HIGHLY FLAMMABLE (EUROPEAN DEFINITION)
TOXIC
DANGER:
POISON
MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. VAPOR HARMFUL.
CANNOT BE MADE NON-POISONOUS.
CAUSES IRRITATION.
TARGET ORGAN(S):
NERVES
EYES
KEEP CONTAINER TIGHTLY CLOSED.

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PAGE 2

PRODUCT #: 362808
MF: C2H6O

NAME: ETHYL ALCOHOL, DENATURED

CUST#: 938609
PO#: 80409

KEEP AWAY FROM SOURCES OF IGNITION. NO SMOKING.
DO NOT BREATHE VAPOR.
HYGROSCOPIC
HANDLE AND STORE UNDER NITROGEN.

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-----

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.
FLAMMABLE LIQUID.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND FLASH BACK.
CONTAINER EXPLOSION MAY OCCUR UNDER FIRE CONDITIONS.

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

SHUT OFF ALL SOURCES OF IGNITION.

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PAGE 3

PRODUCT #: 36280 8
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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.
USE NONSPARKING TOOLS.
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.
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
DO NOT BREATHE VAPOR.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
POISON
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
BOILING POINT: 78 C
MELTING POINT: -130 C
FLASHPOINT 48 F
8 C

AUTOIGNITION TEMPERATURE: 793 F
UPPER EXPLOSION LEVEL: 19% 422C
LOWER EXPLOSION LEVEL: 3.3% 60 C

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PAGE 4

PRODUCT #: 362808
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NAME: ETHYL ALCOHOL, DENATURED

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VAPOR PRESSURE: 40MM 19 C
VAPOR DENSITY: 1.59
SPECIFIC GRAVITY: 0.785

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

INCOMPATIBILITIES
OXIDIZING AGENTS
PEROXIDES
ACIDS
ACID CHLORIDES
ACID ANHYDRIDES
ALKALI METALS
AMMONIA
PROTECT FROM MOISTURE.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
TOXIC FUMES OF:
CARBON MONOXIDE, CARBON DIOXIDE

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

ACUTE EFFECTS
MAY BE FATAL IF INHALED, SWALLOWED, OR ABSORBED THROUGH SKIN.
VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
CAUSES SKIN IRRITATION.
CAN CAUSE CNS DEPRESSION.

EXPOSURE CAN CAUSE:
DAMAGE TO THE EYES
NAUSEA, DIZZINESS AND HEADACHE
NARCOTIC EFFECT
PROLONGED OR REPEATED EXPOSURE TO SKIN CAUSES DEFATTING AND
DERMATITIS.

CHRONIC EFFECTS
DAMAGE TO THE LIVER
DAMAGE TO THE HEART
DAMAGE TO THE KIDNEYS
TARGET ORGAN(S):
NERVES

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PAGE 5

PRODUCT #: 362808
 MF: C2H6O

NAME: ETHYL ALCOHOL, DENATURED

CUST#: 938609
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EYES
 LIVER, KIDNEYS
 ADDITIONAL INFORMATION
 WARNING: CONTAINS METHANOL. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. CANNOT BE MADE NONPOISONOUS.
 RTECS DATA AND SYNONYMS SUPPLIED ARE FOR THE MOST ABUNDANT HAZARDOUS COMPONENT OF THIS PRODUCT.

RTECS NO: KQ6300000
 ETHYL ALCOHOL
 IRRITATION DATA
 SKN-RBT 400 MG OPEN MLD
 SKN-RBT 20 MG/24H MOD
 EYE-RBT 500 MG SEV
 EYE-RBT 500 MG/24H MLD
 EYE-RBT 100 MG/4S RINSE MOD

TOXICITY DATA
 ORL-CHD LDLO:2 GM/KG
 ORL-HMN LDLO:1400 MG/KG
 SCU-INF LDLO:19440 MG/KG
 ORL-RAT LD50:7060 MG/KG
 IHL-RAT LC50:20000 PPM/10H
 IPR-RAT LD50:3600 UG/KG
 IVN-RAT LD50:1440 MG/KG
 IAT-RAT LD50:11 MG/KG
 ORL-MUS LD50:3450 MG/KG
 IHL-MUS LC50:39 GM/M3/4H
 IPR-MUS LD50:933 MG/KG
 SCU-MUS LD50:8285 MG/KG
 IVN-MUS LD50:1973 MG/KG
 ORL-RBT LD50:6300 MG/KG
 IPR-RBT LD50:963 MG/KG
 IVN-RBT LD50:2374 MG/KG
 ORL-GPG LD50:5560 MG/KG
 IPR-GPG LD50:3414 MG/KG
 IPR-HAM LD50:5068 MG/KG
 IPR-MAM LD50:4300 MG/KG

UCDS ** 7/22/70
 85JCAE -,189,86
 AJOPAA 29,1363,46
 85JCAE -,189,86
 FCTOD7 20,573,82

ATXKA8 17,183,58
 NPIRI* 1,44,74
 AJCP AI 5,466,35
 TXAPA9 16,718,70
 NPIRI* 1,44,74
 PHMGBN 2,27,69
 TXAPA9 18,60,71
 TXAPA9 18,60,71
 GISAAA 32(3),31,67
 GTPZAB 26(8),53,82
 SCCUR* -,5,61
 FAQNAU 48A,99,70
 HBTXAC 1,128,55
 HBTXAC 1,130,55
 EVHPAZ 61,321,85
 EVHPAZ 61,321,85
 JIHTAB 23,259,41
 EVHPAZ 61,321,85
 EVHPAZ 61,321,85
 TXAPA9 13,358,68

TARGET ORGAN DATA
 BEHAVIORAL (SLEEP)
 BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
 BEHAVIORAL (ATAxia)
 BEHAVIORAL (ANTIPSYCHOTIC)

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BEHAVIORAL (HEADACHE)
 BEHAVIORAL (CHANGE IN PSYCHOPHYSIOLOGICAL TESTS)
 LUNGS, THORAX OR RESPIRATION (CHRONIC PULMONARY EDEMA OR CONGESTION)
 LUNGS, THORAX OR RESPIRATION (DYSPNAE)
 LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)
 GASTROINTESTINAL (ALTERATION IN GASTRIC SECRETION)
 GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)
 GASTROINTESTINAL (NAUSEA OR VOMITING)
 GASTROINTESTINAL (OTHER CHANGES)
 LIVER (FATTY LIVER DEGENERATION)
 LIVER (TUMORS)
 BLOOD (OTHER CHANGES)
 BLOOD (LYMPHOMA INCLUDING HODGKIN'S DISEASE)
 PATERNAL EFFECTS (TESTES, EPIDIDYMIS, SPERM DUCT)
 EFFECTS ON FERTILITY (FEMALE FERTILITY INDEX)
 EFFECTS ON FERTILITY (MALE FERTILITY INDEX)
 EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
 EFFECTS ON FERTILITY (OTHER MEASURES OF FERTILITY)
 EFFECTS ON EMBRYO OR FETUS (EXTRA EMBRYONIC STRUCTURES)
 EFFECTS ON EMBRYO OR FETUS (CYTOLOGICAL CHANGES)
 EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
 EFFECTS ON EMBRYO OR FETUS (FETAL DEATH)
 EFFECTS ON EMBRYO OR FETUS (OTHER EFFECTS TO EMBRYO OR FETUS)
 SPECIFIC DEVELOPMENTAL ABNORMALITIES (EYE, EAR)
 SPECIFIC DEVELOPMENTAL ABNORMALITIES (CRANIOFACIAL)
 SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
 SPECIFIC DEVELOPMENTAL ABNORMALITIES (RESPIRATORY SYSTEM)
 EFFECTS ON NEWBORN (GROWTH STATISTICS)
 TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)
 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

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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 7

PRODUCT #: 362808
MF: C2H6O

NAME: ETHYL ALCOHOL, DENATURED

CUST#: 938609
PO#: 80409

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 - - - - -

TLV AND SOURCE

FOR METHYL ALCOHOL - SKIN:

ACGIH TLV-TWA: 200 PPM (260 MG/M3); STEL: 250 PPM (310 MG/M3).
OSHA PEL: 8 H TWA 200 PPM (260 MG/M3); STEL: 250 PPM (310 MG/M3).

FOR 2-PROPANOL (ISOPROPYL ALCOHOL):
ACGIH TLV-TWA: 400 PPM (983 MG/M3); STEL: 500 PPM (1230 MG/M3).

OSHA PEL: 8H TWA: 400 PPM (983 MG/M3); STEL: 500 PPM (1225 MG/M3).

RTECS DATA AND SYNONYMS SUPPLIED ARE FOR THE MOST ABUNDANT HAZARDOUS COMPONENT OF THIS PRODUCT.

VIEWS, STANDARDS, AND REGULATIONS

ACGIH TLV-TWA 1000 PPM

IARC CANCER REVIEW: ANIMAL INADEQUATE EVIDENCE IMEMDT 85IN48 6,575,91

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION 44,35,88

FEREAC 54,7740,89

MSHA STANDARD-AIR: TWA 1000 PPM (1900 MG/M3)

DTLVS* 3,103,71

OSHA PEL (GEN INDU): 8H TWA 1000 PPM (1900 MG/M3)

CFR GBR 29,1910.1000,94

OSHA PEL (CONSTRUC): 8H TWA 1000 PPM (1900 MG/M3)

CFR GBR 29,1926.55,94

OSHA PEL (SHIPYARD): 8H TWA 1000 PPM (1900 MG/M3)

CFR GBR 29,1915.1000,93

OSHA PEL (FED CONT): 8H TWA 1000 PPM (1900 MG/M3)

CFR GBR 41,50-204.50,94

DEL-AUSTRALIA: TWA 1000 PPM (1900 MG/M3) JAN93

DEL-BELGIUM: TWA 1000 PPM (1880 MG/M3) JAN93

DEL-CZECHOSLOVAKIA: TWA 1000 MG/M3; STEL 5000 MG/M3 JAN93

DEL-DENMARK: TWA 1000 PPM (1900 MG/M3) JAN93

DEL-FINLAND: TWA 1000 PPM (1900 MG/M3); STEL 1250 PPM (2400 MG/M3) JAN93

DEL-FRANCE: TWA 1000 PPM (1900 MG/M3); STEL 5000 PPM JAN93

CONTINUED ON NEXT PAGE

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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 8

PRODUCT #: 362808
MF: C2H6O

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CUST#: 938609
PO#: 80409

DEL-GERMANY:TWA 1000 PPM (1900 MG/M3) JAN93
 DEL-HUNGARY:TWA 1000 MG/M3;STEL 3000 MG/M3 JAN93
 DEL-THE NETHERLANDS:TWA 1000 PPM (1900 MG/M3) JAN93
 DEL-THE PHILIPPINES:TWA 1000 PPM (1900 MG/M3) JAN93
 DEL-POLAND:TWA 1000 MG/M3 JAN93
 DEL-RUSSIA:STEL 1000 MG/M3 JAN93
 DEL-SWEDEN:TWA 1000 PPM (1900 MG/M3) JAN93
 DEL-SWITZERLAND:TWA 1000 PPM (1900 MG/M3) JAN93
 DEL-THAILAND:TWA 1000 PPM (1900 MG/M3) JAN93
 DEL-TURKEY:TWA 1000 PPM (1900 MG/M3) JAN93
 DEL-UNITED KINGDOM:TWA 1000 PPM (1900 MG/M3) JAN93
 DEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
 DEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
 NIOSH REL TO ETHYL ALCOHOL-AIR:10H TWA 1000 PPM
 NIOSH* DHHS #92-100, 92
 NOHS 1974: HZD 31500; NIS 430; TNF 157709; NOS 242; TNE 2088926
 NOES 1983: HZD 31500; NIS 334; TNF 86077; NOS 222; TNE 2069125; TFE 1014002
 EPA GENETOX PROGRAM 1988, POSITIVE: RODENT DOMINANT LETHAL SHE-CLONAL ASSAY
 EPA GENETOX PROGRAM 1988, NEGATIVE: ASPERGILLUS-FORWARD MUTATION;
 EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.-RLV F344 RAT EMBRYO
 EPA GENETOX PROGRAM 1988, NEGATIVE: IN VITRO CYTOGENETICS-NONHUMAN; MAMMALIAN MICRONUCLEUS
 EPA GENETOX PROGRAM 1988, NEGATIVE: N CRASSA-ANEUPLOIDY; HISTIDINE REVERSION-AMES TEST
 EPA GENETOX PROGRAM 1988, NEGATIVE: IN VITRO SCE-HUMAN LYMPHOCYTES; IN VITRO SCE-HUMAN
 EPA GENETOX PROGRAM 1988, NEGATIVE: IN VITRO SCE-NONHUMAN; SPERM MORPHOLOGY-MOUSE
 EPA GENETOX PROGRAM 1988, NEGATIVE/LIMITED: CARCINOGENICITY-MOUSE/RAT
 EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
 EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1995
 NIOSH ANALYTICAL METHOD, 1994: ETHANOL IN BLOOD, 8002
 NIOSH ANALYTICAL METHOD, 1994: ALCOHOLS I, 1400
 CARCINOGENESIS STUDIES;SELECTED, JANUARY 1995
 5.0% METHANOL 67-56-1
 THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

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

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PRODUCT #: 36 280 8
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