



chemists helping chemists in research & industry

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ATTN: SAFETY DIRECTOR
DR LANCE URVEN
UNIVERSITY OF WISCONSIN WHITEWATER
P O BOX 296
WHITEWATER WI 53190

DATE: 07/20/92
CUST#: 523216
PO#: Q D 10972

MATERIAL SAFETY DATA SHEET PAGE 1

IDENTIFICATION

PRODUCT #: 27764-9
CAS #: 64-17-5
MF: C2H6O

NAME: ETHYL ALCOHOL, ANHYDROUS, DENATURED

SYNONYMS

ABSOLUTE ETHANOL * AETHANOL (GERMAN) * AETHYLALCOHOL (GERMAN) *
ALCOHOL * ALCOHOL, ANHYDROUS * ALCOHOL DEHYDRATED * ALCOOL ETHYLIQUE
(FRENCH) * ALCOOL ETILICO (ITALIAN) * ALGRAIN * ALKOHOL (GERMAN) *
ALKOHOLU ETYLOWEGO (POLISH) * ANHYDROL * COLOGNE SPIRIT * COLOGNE
SPIRITS (DOT) * ETANOLO (ITALIAN) * ETHANOL * ETHANOL (DOT, OSHA) *
ETHANOL, SOLUTION (DOT) * ETHANOL 200 PROOF * ETHYL ALCOHOL (ACGIH,
DOT, OSHA) * ETHYLALCOHOL (DUTCH) * ETHYL ALCOHOL ANHYDROUS * ETHYL
HYDRATE * ETHYL HYDROXIDE * ETYLOWY ALKOHOL (POLISH) * FERMENTATION
ALCOHOL * GRAIN ALCOHOL * JAYSOL * JAYSOL S * METHYL CARBINOL *
MOLASSES ALCOHOL * NCI-C03134 * POTATO ALCOHOL * SO ALCOHOL 23-
HYDROGEN * SPIRITS OF WINE * SPIRT * TECSOL * UN 1170 (DOT) *

HAZARDOUS INGREDIENTS

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

TOXICITY HAZARDS

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

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

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

ATXKA8 17,183,58
NPRI* 1,44,74
AJCPAI 5,466,35
TXAPA9 16,718,70
NPRI* 1,44,74
PHMGBN 2,27,69
TXAPA9 18,60,71
TXAPA9 18,60,71
GISAA 32(3),31,67
GTPZAB 26(8),53,82
SCCUR* -,5,61

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MATERIAL SAFETY DATA SHEET PAGE 2

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PRODUCT #: 27764-9
 CAS #: 64-17-5
 MF: C2H6O

NAME: ETHYL ALCOHOL, ANHYDROUS, DENATURED

----- TOXICITY HAZARDS -----

SCU-MUS LD50:8285 MG/KG	FAONAU 48A,99,70
IVN-MUS LD50:1973 MG/KG	HBTXAC 1,128,55
ORL-RBT LD50:6300 MG/KG	HBTXAC 1,130,55
IPR-RBT LD50:963 MG/KG	EVHPAZ 61,321,85
IVN-RBT LD50:2374 MG/KG	EVHPAZ 61,321,85
ORL-GPG LD50:5560 MG/KG	JHHTAB 23,259,41
IPR-GPG LD50:3414 MG/KG	EVHPAZ 61,321,85
IPR-HAM LD50:5068 MG/KG	EVHPAZ 61,321,85
IPR-MAM LD50:4300 MG/KG	TXAPA9 13,358,68

REVIEWS, STANDARDS, AND REGULATIONS

ACGIH TLV-TWA 1000 PPM 85INA8 5,242.2,86
 IARC CANCER REVIEW: ANIMAL INADEQUATE EVIDENCE IMEMDT 44,35,88
 EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
 FEREAC 54,4388,89
 MSHA STANDARD-AIR: TWA 1000 PPM (1900 MG/M3) DTLVS* 3,103,71
 OSHA PEL: 8H TWA 1000 PPM (1900 MG/M3) FEREAC 54,2923,89
 OSHA PEL FINAL: 8H TWA 1000 PPM (1900 MG/M3) FEREAC 54,2923,89
 NIOSH 1974: HZD 31500; NIS 430; TNF 157709; NOS 242; TNE 2088926
 NIOSH 1983: HZD 31500; NIS 334; TNF 86077; NOS 222; TNE 2069125; TFE 1014002
 EPA GENETOX PROGRAM 1988, POSITIVE: RODENT DOMINANT LETHAL
 EPA GENETOX PROGRAM 1988, NEGATIVE: ASPERGILLUS-FORWARD MUTATION; SHE-CLONAL ASSAY
 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 CHEMICAL INVENTORY, JUNE 1990
 EPA TSCA SECTION 8(E) STATUS REPORT 8EHQ-0786-0617
 EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, MARCH 1992

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PRODUCT #: 27764-9
CAS #: 64-17-5
MF: C2H6O

NAME: ETHYL ALCOHOL, ANHYDROUS, DENATURED

----- TOXICITY HAZARDS -----

NIOSH ANALYTICAL METHODS: SEE ALCOHOLS I, 1400;
NIOSH ANALYTICAL METHODS: SEE 2-BUTANONE, ETHANOL, AND TOLUENE IN
BLOOD, 8002

TARGET ORGAN DATA

- BEHAVIORAL (SLEEP)
- BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
- BEHAVIORAL (ATAXIA)
- BEHAVIORAL (ANTIPSYCHOTIC)
- 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)

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M A T E R I A L S RECEIVED DATA SHEET PAGE 4

CUST#: 523216
PO#: Q D 10972

PRODUCT #: 27764-9
CAS #: 64-17-5
MF: C2H6O

NAME: ETHYL ALCOHOL, ANHYDROUS, DENATURED

----- TOXICITY HAZARDS -----

DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

----- HEALTH HAZARD DATA -----

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

CHRONIC EFFECTS

DAMAGE TO THE LIVER
DAMAGE TO THE HEART
DAMAGE TO THE KIDNEYS
TARGET ORGAN(S):
EYES
LIVER, KIDNEYS
NERVES

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.
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.

ADDITIONAL INFORMATION

WARNING: CONTAINS METHANOL. MAY BE FATAL OR CAUSE BLINDNESS IF
SWALLOWED. CANNOT BE MADE NONPOISONOUS.

----- PHYSICAL DATA -----

BOILING PT: 78 C

CONTINUED ON NEXT PAGE

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M A T E R I A L SAFETY DATA SHEET PAGE 5

CUST#: 523216
PO#: Q D 10972

PRODUCT #: 27764-9
CAS #: 64-17-5
MF: C2H6O

NAME: ETHYL ALCOHOL, ANHYDROUS, DENATURED

----- PHYSICAL DATA -----

MELTING PT: -130 C
SPECIFIC GRAVITY: 0.789
VAPOR DENSITY: 1.59
VAPOR PRESSURE: 44.6 MM @ 20 C
APPEARANCE AND ODOR
COLORLESS LIQUID

----- FIRE AND EXPLOSION HAZARD DATA -----

FLASHPOINT: 56 F
AUTOIGNITION TEMPERATURE: 683 F
LOWER EXPLOSION LEVEL: 3.3%
UPPER EXPLOSION LEVEL: 24.5%
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.
WARNING:
FLAMMABLE LIQUID.
UNUSUAL FIRE AND EXPLOSIONS HAZARDS
VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND
FLASH BACK.

----- REACTIVITY DATA -----

INCOMPATIBILITIES
OXIDIZING AGENTS
PEROXIDES
ACIDS
ACID CHLORIDES
ACID ANHYDRIDES
ALKALI METALS
AMMONIA
MOISTURE
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
TOXIC FUMES OF:
CARBON MONOXIDE, CARBON DIOXIDE

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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 6

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PRODUCT #: 27764-9
CAS #: 64-17-5
MF: C2H6O

NAME: ETHYL ALCOHOL, ANHYDROUS, DENATURED

----- SPILL OR LEAK PROCEDURES -----

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

SHUT OFF ALL SOURCES OF IGNITION.
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.

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 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.

HYGROSCOPIC
HANDLE AND STORE UNDER NITROGEN.
STORE IN A COOL DRY PLACE.

LABEL PRECAUTIONARY STATEMENTS
FLAMMABLE (USA DEFINITION)
HIGHLY FLAMMABLE (EUROPEAN DEFINITION)
HIGHLY TOXIC (USA DEFINITION)
TOXIC (EUROPEAN DEFINITION)
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):

CONTINUED ON NEXT PAGE

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CUST#: 523216
PO#: Q D 10972

PRODUCT #: 27764-9
CAS #: 64-17-5
MF: C2H6O

NAME: ETHYL ALCOHOL, ANHYDROUS, DENATURED

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

EYES
NERVES
KEEP AWAY FROM SOURCES OF IGNITION. NO SMOKING.
IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE (SHOW THE LABEL WHERE POSSIBLE).
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.

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