SIGMA-ALDRICH

SIGMA CHEMICAL COMPANY
POST OFFICE BOX 14508
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DATE 08/27/01
CUST#: 9-045-99999
PO#:

M A T E R I A L S A F E T Y D A T A S H E E T

THIS MSDS IS FOR A COMPONENT OF CATALOG #: 180-8

SECTION 1. - - - - - - - - - - CHEMICAL IDENTIFICATION- - - - - - - - - -

CATALOG #:
NAME: ETHYL ALCOHOL 200 PROOF USP

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

CAS #: 64-17-5
MF: C2H6O
EC NO: 200-578-6

SYNONYMS
ABSOLUTE ETHANOL * AETHANOL (GERMAN) * AETHYLALKOHOL (GERMAN) * ALCOHOL * ALCOHOL, ANHYDROUS * ALCOHOL DEHYDRATED * ALCOOL ETHYLIQUE (FRENCH) * ALCOOL ETILICO (ITALIAN) * ALGRAIN * ALKOHOL (GERMAN) * ALKOHOLU ETYLOWEGO (POLISH) * ANHYDROL * COLOGNE SPIRIT * ETANOLO (ITALIAN) * ETHANOL (ACGIH:OSHA) * ETHYL ALCOHOL (DOT:OSHA) * ETHYL ALCOHOL ANHYDROUS * ETHYL HYDRATE * ETHYL HYDROXIDE * ETYLOWY ALKOHOL (POLISH) * FERMENTATION ALCOHOL * GRAIN ALCOHOL * JAYSOL * JAYSOL S * METHYLCARBINOL * MOLASSES ALCOHOL * NCI-C03134 * POTATO ALCOHOL * SD ALCOHOL 23-HYDROGEN * SPIRITS OF WINE * SPIRT * TECSOL *

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

LABEL PRECAUTIONARY STATEMENTS
FLAMMABLE (USA)
HIGHLY FLAMMABLE (EU)
IRRITANT
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):
NERVES
LIVER
KEEP CONTAINER TIGHTLY CLOSED.
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.
HYGROSCOPIC

SECTION 4. - - - - - - - - - - FIRST-AID MEASURES- - - - - - - - - -

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER.
IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF

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WATER FOR AT LEAST 15 MINUTES.

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

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

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

WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
COVER WITH DRY-LIME, SAND, OR SODA ASH. PLACE IN COVERED CONTAINERS USING NON-SPARKING TOOLS AND TRANSPORT OUTDOORS.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.
EVACUATE AREA.
SHUT OFF ALL SOURCES OF IGNITION.

SECTION 7. - - - - - - - - - - - HANDLING AND STORAGE- - - - - - - - - - -

REFER TO SECTION 8.

SECTION 8. - - - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - - -

SAFETY SHOWER AND EYE BATH.
USE NONSPARKING TOOLS.
MECHANICAL EXHAUST REQUIRED.
WASH THOROUGHLY AFTER HANDLING.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
AVOID BREATHING VAPOR.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
NIOSH/MSHA-APPROVED RESPIRATOR.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
CHEMICAL SAFETY GOGGLES.
KEEP CONTAINER CLOSED.
KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.
STORE IN A COOL DRY PLACE.
HANDLE AND STORE UNDER NITROGEN.

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

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CATALOG #:
NAME: ETHYL ALCOHOL 200 PROOF USP

PHYSICAL PROPERTIES
BOILING POINT: 78.4 C
MELTING POINT: -144 C
FLASHPOINT 60F
15.55C
EXPLOSION LIMITS IN AIR:
UPPER 19 %
LOWER 3.3 %
VAPOR PRESSURE: 44.6 MMHG @ 20 C
SOLUBILITY:
WATER -Z26070
SPECIFIC GRAVITY: 0.794

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

STABILITY
STABLE.

INCOMPATIBILITIES
PROTECT FROM MOISTURE.
ALKALI METALS
AMMONIA
OXIDIZING AGENTS
PEROXIDES

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
CARBON MONOXIDE, CARBON DIOXIDE

HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.

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

ACUTE EFFECTS
CAUSES SKIN IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
CAUSES EYE IRRITATION.
MAY BE HARMFUL IF INHALED.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
MAY BE HARMFUL IF SWALLOWED.
CAN CAUSE CNS DEPRESSION.
NARCOTIC EFFECT
DAMAGE TO THE HEART
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
LC
LD

CHRONIC EFFECTS
TARGET ORGAN(S):
NERVES

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CATALOG #:
NAME: ETHYL ALCOHOL 200 PROOF USP

LIVER
HEART
THIS PRODUCT IS OR CONTAINS A COMPONENT THAT IS NOT CLASSIFIABLE AS TO ITS CARCINOGENICITY BASED ON ITS IARC, ACGIH, NTP OR EPA CLASSIFICATION.

RTECS #: KQ6300000
ETHYL ALCOHOL

IRRITATION DATA

SKN-RBT 400 MG OPEN MLD	UCDS** 7/22/1970
SKN-RBT 20 MG/24H MOD	85JCAE -,189,1986
EYE-RBT 500 MG SEV	AJOPAA 29,1363,1946
EYE-RBT 500 MG/24H MLD	85JCAE -,189,1986
EYE-RBT 100 MG/4S RINSE MOD	FCTOD7 20,573,1982

TOXICITY DATA

ORL-CHD LDLO:2 GM/KG	ATXKA8 17,183,1958
ORL-HMN LDLO:1400 MG/KG	NPIRI* 1,44,1974
SCU-INF LDLO:19440 MG/KG	AJCPAI 5,466,1935
ORL-RAT LD50:7060 MG/KG	TXAPA9 16,718,1970
IHL-RAT LC50:20000 PPM/10H	NPIRI* 1,44,1974
IPR-RAT LD50:3600 UG/KG	PHMGBN 2,27,1969
IVN-RAT LD50:1440 MG/KG	TXAPA9 18,60,1971
IAT-RAT LD50:11 MG/KG	TXAPA9 18,60,1971
ORL-MUS LD50:3450 MG/KG	GISAAA 32(3),31,1967
IHL-MUS LC50:39 GM/M3/4H	GTPZAB 26(8),53,1982
IPR-MUS LD50:528 MG/KG	STRAAA 127,245,1965
SCU-MUS LD50:8285 MG/KG	FAONAU 48A,99,1970
IVN-MUS LD50:1973 MG/KG	HBTXAC 1,128,1955
ORL-RBT LD50:6300 MG/KG	HBTXAC 1,130,1955
IPR-RBT LD50:963 MG/KG	EVHPAZ 61,321,1985
IVN-RBT LD50:2374 MG/KG	EVHPAZ 61,321,1985
ORL-GPG LD50:5560 MG/KG	JIHTAB 23,259,1941
IPR-GPG LD50:3414 MG/KG	EVHPAZ 61,321,1985
IPR-HAM LD50:5068 MG/KG	EVHPAZ 61,321,1985
IPR-MAM LD50:4300 MG/KG	TXAPA9 13,358,1968

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)

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LIVER (TUMORS)
ENDOCRINE (CHANGE IN GONADOTROPINS)
ENDOCRINE (OTHER CHANGES)
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 EMBYRO 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 - - - - - - - - - -

CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.
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 SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

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

EUROPEAN INFORMATION
EC INDEX NO: 603-002-00-5
HIGHLY FLAMMABLE
IRRITANT
R 11
HIGHLY FLAMMABLE.
S 7
KEEP CONTAINER TIGHTLY CLOSED.
S 16

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NAME: ETHYL ALCOHOL 200 PROOF USP

KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
ACGIH TLV-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN DTLVS* TLV/BEI,1999
ACGIH TLV-TWA 1000 PPM DTLVS* TLV/BEI,1999
IARC CANCER REVIEW:ANIMAL INADEQUATE EVIDENCE IMEMDT 44,35,1988
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,1989
MSHA STANDARD-AIR:TWA 1000 PPM (1900 MG/M3)
DTLVS* 3,103,1971
OSHA PEL (GEN INDU):8H TWA 1000 PPM (1900 MG/M3)
CFRGBR 29,1910.1000,1994
OSHA PEL (CONSTRUC):8H TWA 1000 PPM (1900 MG/M3)
CFRGBR 29,1926.55,1994
OSHA PEL (SHIPYARD):8H TWA 1000 PPM (1900 MG/M3)
CFRGBR 29,1915.1000,1993
OSHA PEL (FED CONT):8H TWA 1000 PPM (1900 MG/M3)
CFRGBR 41,50-204.50,1994
OEL-AUSTRALIA: TWA 1000 PPM (1900 MG/M3), JAN1993
OEL-AUSTRIA: MAK 1000 PPM (1900 MG/M3), JAN1999
OEL-BELGIUM: TWA 1000 PPM (1880 MG/M3), JAN1993
OEL-DENMARK: TWA 1000 PPM (1900 MG/M3), JAN1999
OEL-FINLAND: TWA 1000 PPM (1900 MG/M3), STEL 1250 PPM (2400 MG/M3),
JAN1999
OEL-FRANCE: VME 1000 PPM (1900 MG/M3), VLE 5000 PPM, JAN1999
OEL-GERMANY: MAK 1000 PPM (1900 MG/M3), JAN1999
OEL-HUNGARY: TWA 1000 MG/M3, STEL 3000 MG/M3, JAN1993
OEL-THE NETHERLANDS: MAC-TGG 500 PPM (950 MG/M3), JAN1999
OEL-NORWAY: TWA 500 PPM (950 MG/M3), JAN1999
OEL-THE PHILIPPINES: TWA 1000 PPM (1900 MG/M3), JAN1993
OEL-POLAND: MAC(TWA) 1000 MG/M3, MAC(STEL) 3000 MG/M3, JAN1999
OEL-RUSSIA: STEL 1000 MG/M3, JAN1993
OEL-SWEDEN: NGV 500 PPM (1000 MG/M3), KTV 1000PPM (1900 MG/M3), JAN1999
OEL-SWITZERLAND: MAK-W 1000 PPM (1900 MG/M3), JAN1999
OEL-THAILAND: TWA 1000 PPM (1900 MG/M3), JAN1993
OEL-TURKEY: TWA 1000 PPM (1900 MG/M3), JAN1993
OEL-UNITED KINGDOM: TWA 1000 PPM (1950 MG/M3), SEP2000
OEL IN ARGENTINA, BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV;
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO ETHYL ALCOHOL-AIR:10H TWA 1000 PPM
NIOSH* DHHS #92-100,1992
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
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

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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 SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001
NIOSH ANALYTICAL METHOD, 1994: ETHANOL IN BLOOD, 8002
NIOSH ANALYTICAL METHOD, 1994: ALCOHOLS I, 1400
NTP CARCINOGENESIS STUDIES; ON TEST (TWO YEAR STUDIES), OCTOBER 2000

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

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