



AUG 31 1998

SIGMA-ALDRICH

SIGMA CHEMICAL COMPANY
POST OFFICE BOX 14508
SAINT LOUIS, MISSOURI 63178, USA

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DATE 08/18/98
CUST#: 0-495-04629
PO#: UNI-91211

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

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

CATALOG #: M0880
NAME: METHANESULFONIC ACID ETHYL ESTER

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

CAS #: 62-50-0
MF: C3H8O3S
EC NO: 200-536-7

SYNONYMS

EMS * ENT 26396 * ETHYLESTER KYSELINY METHANSULFONOVE (CZECH) * ETHYL
ESTER OF METHANESULFONIC ACID * ETHYL ESTER OF METHANESULPHONIC ACID *
ETHYL ESTER OF METHYLSULFONIC ACID * ETHYL ESTER OF METHYLSULPHONIC
ACID * ETHYL METHANESULFONATE * ETHYL METHANESULPHONATE * ETHYL
METHANSULFONATE * ETHYL METHANSULPHONATE * HALF-MYLERAN *
METHANESULPHONIC ACID ETHYL ESTER * METHYLSULFONIC ACID, ETHYL ESTER *
NSC 26805 * RCRA WASTE NUMBER U119 *

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

LABEL PRECAUTIONARY STATEMENTS

TOXIC
MAY CAUSE CANCER.
MAY CAUSE HERITABLE GENETIC DAMAGE.
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
TARGET ORGAN(S):
LUNGS
KIDNEYS
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.
DO NOT BREATHE VAPOR.

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.
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.

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

EXTINGUISHING MEDIA
WATER SPRAY.

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CATALOG #: M0880
NAME: METHANESULFONIC ACID ETHYL ESTER

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.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

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

EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY
RUBBER GLOVES.
WEAR DISPOSABLE COVERALLS AND DISCARD THEM AFTER USE.
COVER WITH DRY LIME OR SODA ASH, PICK UP, KEEP IN A CLOSED CONTAINER
AND HOLD FOR WASTE DISPOSAL.
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.
SAFETY SHOWER AND EYE BATH.
USE ONLY IN A CHEMICAL FUME HOOD.
DO NOT BREATHE VAPOR.
AVOID ALL CONTACT.
WASH THOROUGHLY AFTER HANDLING.
TOXIC.
CARCINOGEN.
MUTAGEN.
HARMFUL LIQUID AND FUMES.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR
COLORLESS TO YELLOW LIQUID

PHYSICAL PROPERTIES
BOILING POINT: 85 C TO 86 C/10MM.
FLASHPOINT 212F
100C
SPECIFIC GRAVITY: 1.167

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

INCOMPATIBILITIES

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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 3

CATALOG #: M0880
NAME: METHANESULFONIC ACID ETHYL ESTER

STRONG OXIDIZING AGENTS
STRONG BASES

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

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

ACUTE EFFECTS
HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
MAY CAUSE IRRITATION.

CHRONIC EFFECTS
CARCINOGEN.
MAY ALTER GENETIC MATERIAL.
TARGET ORGAN(S):
LUNGS
KIDNEYS

RTECS #: PB2100000
METHANESULFONIC ACID, ETHYL ESTER

| | |
|------------------------|---------------------|
| TOXICITY DATA | |
| IPR-RAT LD50:350 MG/KG | CPBTAL 8,807,1960 |
| ORL-MUS LD50:470 MG/KG | MUREAV 223,373,1989 |
| IPR-MUS LD50:435 MG/KG | CBINA8 3,117,1971 |

TARGET ORGAN DATA

- BRAIN AND COVERINGS (TUMORS)
- LUNGS, THORAX OR RESPIRATION (TUMORS)
- KIDNEY, URETER, BLADDER (KIDNEY TUMORS)
- SKIN AND APPENDAGES (TUMORS)
- PATERNAL EFFECTS (SPERMATOGENESIS)
- PATERNAL EFFECTS (TESTES, EPIDIDYMIS, SPERM DUCT)
- EFFECTS ON FERTILITY (MATING PERFORMANCE)
- EFFECTS ON FERTILITY (MALE FERTILITY INDEX)
- EFFECTS ON FERTILITY (PRE-IMPLANTATION MORTALITY)
- EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
- EFFECTS ON FERTILITY (LITTER SIZE)
- 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 (CRANIOFACIAL)
- SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
- SPECIFIC DEVELOPMENTAL ABNORMALITIES (OTHER DEVELOPMENTAL ABNORMALITIES)
- TUMORIGENIC EFFECTS (TRANSPLACENTAL TUMORIGENESIS)
- EFFECTS ON NEWBORN (LIVE BIRTH INDEX)
- EFFECTS ON NEWBORN (GERM CELL EFFECTS)
- EFFECTS ON NEWBORN (DELAYED EFFECTS)
- TUMORIGENIC (CARCINOGENIC BY RTECS CRITERIA)

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TUMORIGENIC (NEOPLASTIC BY RTECS CRITERIA)
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 - - - - -

DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A
CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
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

TOXIC
R 45
MAY CAUSE CANCER.
R 46
MAY CAUSE HERITABLE GENETIC DAMAGE.
R 20/21/22
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
S 45
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
S 36/37/39
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.
S 23
DO NOT BREATHE VAPOR.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
IARC CANCER REVIEW:ANIMAL SUFFICIENT EVIDENCE IMEMDT 7,245,1974
IARC CANCER REVIEW:HUMAN NO ADEQUATE DATA IMEMDT 7,245,1974
IARC CANCER REVIEW:GROUP 2B IMSUDL 7,56,1987
OEL-FINLAND;CARCINOGEN JAN 1993
OEL-SWEDEN;CARCINOGEN JAN 1993
NOES 1983: HZD X6247; NIS 1; TNF 75; NOS 2; TNE 971; TFE 448
EPA GENETOX PROGRAM 1988, POSITIVE: ASPERGILLUS-FORWARD MUTATION;
ASPERGILLUS-REVERSION
EPA GENETOX PROGRAM 1988, POSITIVE: CARCINOGENICITY-MOUSE/RAT;
SHE-CLONAL ASSAY

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EPA GENETOX PROGRAM 1988, POSITIVE: SHE-FOCUS ASSAY; CELL TRANSFORM.-SA7/SHE

EPA GENETOX PROGRAM 1988, POSITIVE: IN VIVO CYTOGENETICS-NONHUMAN BONE MARROW

EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER-RECIPROCAL TRANSLOCATION

EPA GENETOX PROGRAM 1988, POSITIVE: HOST-MEDIATED ASSAY; L5178Y CELLS IN VITRO-TK TEST

EPA GENETOX PROGRAM 1988, POSITIVE: MAMMALIAN MICRONUCLEUS

EPA GENETOX PROGRAM 1988, POSITIVE: IN VITRO HUMAN LYMPHOCYTE MICRONUCLEUS; MOUSE SPOT TEST

EPA GENETOX PROGRAM 1988, POSITIVE: N CRASSA-FORWARD MUTATION; N CRASSA-REVERSION

EPA GENETOX PROGRAM 1988, POSITIVE: E COLI POLA WITHOUT S9; IN VITRO SCE-HUMAN LYMPHOCYTES

EPA GENETOX PROGRAM 1988, POSITIVE: MOUSE SPECIFIC LOCUS; SPERM MORPHOLOGY-MOUSE F1

EPA GENETOX PROGRAM 1988, POSITIVE: SPERM MORPHOLOGY-MOUSE; D MELANOGASTER SEX-LINKED LETHAL

EPA GENETOX PROGRAM 1988, POSITIVE: UDS IN MOUSE GERM CELLS; V79 CELL CULTURE-GENE MUTATION

EPA GENETOX PROGRAM 1988, POSITIVE: TRP REVERSION; S CEREVISIAE GENE CONVERSION

EPA GENETOX PROGRAM 1988, POSITIVE: S CEREVISIAE-FORWARD MUTATION; S CEREVISIAE-HOMOZYGOSIS

EPA GENETOX PROGRAM 1988, POSITIVE: S CEREVISIAE-ANEUPLOIDY; S CEREVISIAE-REVERSION

EPA GENETOX PROGRAM 1988, POSITIVE: S POMBE-FORWARD MUTATION; S POMBE-REVERSION

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: RODENT DOMINANT LETHAL

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: RODENT HERITABLE TRANSLOCATION

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VITRO SCE-HUMAN; IN VITRO SCE-NONHUMAN

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VIVO SCE-NONHUMAN

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VITRO UDS-HUMAN FIBROBLAST

EPA GENETOX PROGRAM 1988, NEGATIVE: N CRASSA-ANEUPLOIDY

EPA GENETOX PROGRAM 1988, INCONCLUSIVE: CYTOGENETICS-MALE GERM CELL

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY

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

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1998

NTP 7TH ANNUAL REPORT ON CARCINOGENS, 1992 : ANTICIPATED TO BE CARCINOGEN

U.S. INFORMATION

CALIFORNIA PROPOSITION 65:
THIS PRODUCT IS OR CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

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

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