

Valid 11/2002 - 01/2003

Sigma Chemical Co.
P.O. Box 14508
St. Louis, MO 63178 USA
Phone: 314-771-5765

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

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

CATALOG #: N8509
NAME: N-NITROSO-N-ETHYLUREA BULK PACKAGE

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

CAS #: 759-73-9
MF: C3H7N3O2
EC NO: 212-072-2

SYNONYMS

AENH (GERMAN) * AETHYLNITROSO-HARNSTOFF (GERMAN) * CARBAMIDE, N-ETHYL-
N-NITROSO- * ENU * 1-ETHYL-1-NITROSOMOCOVINA (CZECH) *
ETHYLNITROSOUREA * N-ETHYLNITROSOUREA * N-ETHYL-N-NITROSO-UREA * 1-
ETHYL-1-NITROSOUREA * NEU * NITROSOETHYLUREA * N-NITROSO-N-ETHYLUREA *
NSC 45403 * RCRA WASTE NUMBER U176 *

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

LABEL PRECAUTIONARY STATEMENTS

TOXIC

MAY CAUSE CANCER.
MAY CAUSE HERITABLE GENETIC DAMAGE.
MAY CAUSE HARM TO THE UNBORN CHILD.
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
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 DUST.

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 BREATHING BECOMES DIFFICULT,
CALL A PHYSICIAN.
IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND
SHOES. CALL A PHYSICIAN.
IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING
THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.

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.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

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

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY
RUBBER GLOVES.
SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.
AVOID RAISING DUST.
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- - - - -
SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
CHEMICAL SAFETY GOGGLES.
USE ONLY IN A CLOSED SYSTEM.

SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -
APPEARANCE AND ODOR
SOLID.

SECTION 10. - - - - - -STABILITY AND REACTIVITY - - - - -
STABILITY
STABLE.
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
CARBON MONOXIDE, CARBON DIOXIDE
NITROGEN OXIDES
HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.

SECTION 11. - - - - - TOXICOLOGICAL INFORMATION - - - - -
ACUTE EFFECTS

NITROSAMINES ARE SUSPECTED OF CAUSING CANCERS OF THE LUNG, NASAL
SINUSES, BRAIN, ESOPHAGUS, STOMACH, LIVER, BLADDER AND KIDNEY.
SEVERE DAMAGE TO HAEMATOPOIETIC, LYMPHOID AND OTHER TISSUE.

EXPOSURE CAN CAUSE:
HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.

CHRONIC EFFECTS
CARCINOGEN.
NITROSAMINES ARE SUSPECTED OF CAUSING CANCERS OF THE LUNG, NASAL
SINUSES, BRAIN, ESOPHAGUS, STOMACH, LIVER, BLADDER AND KIDNEY.

RTECS #: YT3150000
UREA, 1-ETHYL-1-NITROSO-

TOXICITY DATA

| | |
|------------------------|----------------------|
| ORL-RAT LD50:300 MG/KG | PPTCBY 2,73,1972 |
| SCU-RAT LD50:240 MG/KG | ZEKBAI 74,141,1970 |
| IVN-RAT LD50:240 MG/KG | NATUAS 222,1064,1969 |
| ORL-MUS LD50:960 MG/KG | MUREAV 223,377,1989 |
| IPR-MUS LD50:490 MG/KG | MUREAV 223,377,1989 |

TARGET ORGAN DATA
BRAIN AND COVERINGS (TUMORS)
SPINAL CORD (TUMORS)
PERIPHERAL NERVE AND SENSATION (TUMORS)
CARDIAC (TUMORS)
VASCULAR (TUMORS)
LUNGS, THORAX OR RESPIRATION (TUMORS)
GASTROINTESTINAL (TUMORS)
LIVER (TUMORS)
KIDNEY, URETER, BLADDER (KIDNEY TUMORS)
ENDOCRINE (TUMORS)
ENDOCRINE (THYROID TUMORS)
BLOOD (LEUKEMIA)
SKIN AND APPENDAGES (TUMORS)
PATERNAL EFFECTS (SPERMATOGENESIS)
PATERNAL EFFECTS (TESTES, EPIDIDYMIS, SPERM DUCT)
MATERNAL EFFECTS (UTERUS, CERVIX, VAGINA)
EFFECTS ON FERTILITY (FEMALE FERTILITY INDEX)
EFFECTS ON FERTILITY (PRE-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (LITTER SIZE)
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)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CENTRAL NERVOUS SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (EYE, EAR)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CRANIOFACIAL)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (BODY WALL)

SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CARDIOVASCULAR SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (UROGENITAL SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (OTHER DEVELOPMENTAL ABNORMALITIES)
TUMORIGENIC EFFECTS (TESTICULAR TUMORS)
TUMORIGENIC EFFECTS (TRANSPLACENTAL TUMORIGENESIS)
EFFECTS ON NEWBORN (STILLBIRTH)
EFFECTS ON NEWBORN (LIVE BIRTH INDEX)
EFFECTS ON NEWBORN (VIABILITY INDEX)
EFFECTS ON NEWBORN (WEANING OR LACTATION INDEX)
EFFECTS ON NEWBORN (GROWTH STATISTICS)
EFFECTS ON NEWBORN (GERM CELL EFFECTS)
EFFECTS ON NEWBORN (BIOCHEMICAL AND METABOLIC)
EFFECTS ON NEWBORN (BEHAVIORAL)
EFFECTS ON NEWBORN (PHYSICAL)
EFFECTS ON NEWBORN (DELAYED EFFECTS)
TUMORIGENIC (CARCINOGENIC BY RTECS CRITERIA)
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 61

MAY CAUSE HARM TO THE UNBORN CHILD.

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 22

DO NOT BREATHE DUST.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

IARC CANCER REVIEW:ANIMAL SUFFICIENT EVIDENCE IMEMDT 17,191,1978

IARC CANCER REVIEW:HUMAN NO ADEQUATE DATA IMEMDT 17,191,1978

IARC CANCER REVIEW:GROUP 2A IMSUDL 7,56,1987

OEL-FRANCE: CARCINOGEN, JAN1993

EPA GENETOX PROGRAM 1988, POSITIVE: CARCINOGENICITY-MOUSE/RAT

EPA GENETOX PROGRAM 1988, POSITIVE: CELL TRANSFORM.-RLV F344 RAT EMBRYO

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

EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER-WHOLE SEX CHROM.

LOSS

EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER-PARTIAL SEX CHROM.

LOSS

EPA GENETOX PROGRAM 1988, POSITIVE: HOST-MEDIATED ASSAY; RODENT

HERITABLE TRANSLOCATION

EPA GENETOX PROGRAM 1988, POSITIVE: MOUSE SPOT TEST; N CRASSA-FORWARD
MUTATION
EPA GENETOX PROGRAM 1988, POSITIVE: E COLI POLA WITHOUT S9; HISTIDINE
REVERSION-AMES TEST
EPA GENETOX PROGRAM 1988, POSITIVE: IN VITRO SCE-HUMAN; MOUSE SPECIFIC
LOCUS
EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER SEX-LINKED LETHAL
EPA GENETOX PROGRAM 1988, POSITIVE: IN VITRO UDS-HUMAN FIBROBLAST; UDS
IN MOUSE GERM CELLS
EPA GENETOX PROGRAM 1988, POSITIVE: S CEREVISIAE GENE CONVERSION; S
CEREVISIAE-HOMOZYGOSIS
EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VITRO
CYTOGENETICS-HUMAN LYMPHOCYTE
EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VITRO SCE-NONHUMAN
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: SHE-CLONAL ASSAY
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: D MELANOGASTER-RECIPROCAL
TRANSLOCATION
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
ON EPA IRIS DATABASE
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001
NTP 9TH REPORT ON CARCINOGENS, 2000: REASONABLY ANTICIPATED TO BE HUMAN
CARCINOGEN

U.S. INFORMATION

THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.
THIS PRODUCT IS OR CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF
CALIFORNIA TO CAUSE CANCER.
CALIFORNIA PROPOSITION 65:

SECTION 16. - - - - - OTHER INFORMATION- - - - -
THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO
BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA, ALDRICH,
FLUKA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING
OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR
PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.
COPYRIGHT 2001 SIGMA-ALDRICH CO.
LICENSE GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY