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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

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

CATALOG #: N4766
NAME: N-NITROSO-N-METHYLUREA

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

CAS #: 684-93-5
MF: C2H5N3O2
EC NO: 211-678-4

SYNONYMS

CARBAMIDE, N-METHYL-N-NITROSO- * METHYLNITROSO-HARNSTOFF (GERMAN) * N-METHYL-N-NITROSO-HARNSTOFF (GERMAN) * 1-METHYL-1-NITROSOMOCOVINA (CZECH) * METHYLNITROSOUREA * N-METHYL-N-NITROSOUREA * 1-METHYL-1-NITROSOUREA * METHYLNITROSOUREE (FRENCH) * MNU * N-NITROSO-N-METHYLCARBAMIDE * N-NITROSO-N-METHYL-HARNSTOFF (GERMAN) * NITROSOMETHYLUREA * N-NITROSO-N-METHYLUREA * 1-NITROSO-1-METHYLUREA * NMH * NMU * NSC 23909 * RCRA WASTE NUMBER U177 * SKI 24464 * SRI 859 * UREA, 1-METHYL-1-NITROSO- *

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

LABEL PRECAUTIONARY STATEMENTS

FLAMMABLE (USA)
HIGHLY FLAMMABLE (EU)
TOXIC
MAY CAUSE CANCER.
MAY CAUSE HERITABLE GENETIC DAMAGE.
MAY CAUSE HARM TO THE UNBORN CHILD.
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
WARNING:
FLAMMABLE.
CARCINOGEN.
AVOID ALL CONTACT.
KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.
DO NOT BREATHE DUST.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

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

IN CASE OF EXPOSURE, OBTAIN MEDICAL ATTENTION IMMEDIATELY.
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.
WATER SPRAY.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO
PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

FLAMMABLE SOLID.

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- - - - -

NIOSH/MSHA-APPROVED RESPIRATOR.

COMPATIBLE CHEMICAL-RESISTANT GLOVES.

CHEMICAL SAFETY GOGGLES.

STORE UNDER REFRIGERATION TO AVOID SUDDEN DECOMPOSITION.

SHOULD BE HANDLED 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

MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.

CAUSES IRRITATION.

CHRONIC EFFECTS

CARCINOGEN.

RTECS #: YT7875000

UREA, N-METHYL-N-NITROSO-

TOXICITY DATA

ORL-RAT LD50:110 MG/KG	ZEKBAI 69,103,1967
IPR-RAT LD50:110 MG/KG	NATUAS 222,1064,1969
IVN-RAT LD50:108 MG/KG	APEPA2 257,296,1967
IPR-MUS LD50:144 MG/KG	CNREA8 30,11,1970
SCU-HAM LD50:113 MG/KG	BJCAAI 29,359,1974
ORL-MAM LD50:110 MG/KG	GMCRDC 17,107,1975
IVN-MAM LD50:110 MG/KG	GMCRDC 17,107,1975

TARGET ORGAN DATA

BRAIN AND COVERINGS (TUMORS)

SPINAL CORD (TUMORS)

SENSE ORGANS AND SPECIAL SENSES (OLFACTION TUMORS)

SENSE ORGANS AND SPECIAL SENSES (TUMORS)

LUNGS, THORAX OR RESPIRATION (DYSPNAE)

LUNGS, THORAX OR RESPIRATION (TUMORS)

GASTROINTESTINAL (TUMORS)

GASTROINTESTINAL (COLON TUMORS)

LIVER (TUMORS)

KIDNEY, URETER, BLADDER (OTHER CHANGES)

KIDNEY, URETER, BLADDER (BLADDER TUMORS)

KIDNEY, URETER, BLADDER (KIDNEY TUMORS)
ENDOCRINE (TUMORS)
BLOOD (TUMORS)
BLOOD (LEUKEMIA)
BLOOD (LYMPHOMA INCLUDING HODGKIN'S DISEASE)
MUSCULO-SKELETAL (CHANGES IN TEETH AND SUPPORTING STRUCTURES)
MUSCULO-SKELETAL (TUMORS)
SKIN AND APPENDAGES (TUMORS)
EFFECTS ON FERTILITY (MALE FERTILITY INDEX)
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
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 (CENTRAL NERVOUS SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CRANIOFACIAL)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (RESPIRATORY SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (UROGENITAL SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (OTHER DEVELOPMENTAL ABNORMALITIES)
TUMORIGENIC EFFECTS (TRANSPLACENTAL TUMORIGENESIS)
EFFECTS ON NEWBORN (STILLBIRTH)
EFFECTS ON NEWBORN (LIVE BIRTH INDEX)
EFFECTS ON NEWBORN (WEANING OR LACTATION INDEX)
EFFECTS ON NEWBORN (GROWTH STATISTICS)
EFFECTS ON NEWBORN (BEHAVIORAL)
TUMORIGENIC (CARCINOGENIC BY RTECS CRITERIA)
TUMORIGENIC (NEOPLASTIC BY RTECS CRITERIA)
TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)
TUMORIGENIC (TUMORS AT SITE OF APPLICATION)
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
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

HIGHLY FLAMMABLE

TOXIC

R 45

MAY CAUSE CANCER.

R 46

MAY CAUSE HERITABLE GENETIC DAMAGE.

R 61

MAY CAUSE HARM TO THE UNBORN CHILD.

R 23/24/25

TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.

HIGHLY FLAMMABLE

S 16

KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.

S 22

DO NOT BREATHE DUST.

S 36/37/39

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

IARC CANCER REVIEW:ANIMAL SUFFICIENT EVIDENCE IMEMDT 17,227,1978

IARC CANCER REVIEW:HUMAN NO ADEQUATE DATA IMEMDT 17,227,1978

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

OEL-FINLAND;CARCINOGEN JAN 1993

OEL-SWEDEN;CARCINOGEN JAN 1993

EPA GENETOX PROGRAM 1988, POSITIVE: CARCINOGENICITY-MOUSE/RAT; IN VITRO CYTOGENETICS-HUMAN

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: D MELANOGASTER-RECIPROCAL TRANSLOCATION

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: N CRASSA-REVERSION; E COLI POLA WITHOUT S9

EPA GENETOX PROGRAM 1988, POSITIVE: HISTIDINE REVERSION-AMES TEST; IN VITRO SCE-NONHUMAN

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

EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER SEX-LINKED LETHAL

EPA GENETOX PROGRAM 1988, POSITIVE: IN VITRO UDS-HUMAN FIBROBLAST; IN VITRO UDS IN RAT LIVER

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

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

EPA GENETOX PROGRAM 1988, POSITIVE: S CEREVISIAE-REVERSION

EPA GENETOX PROGRAM 1988, NEGATIVE: RODENT DOMINANT LETHAL

EPA GENETOX PROGRAM 1988, INCONCLUSIVE: MAMMALIAN MICRONUCLEUS

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY

ON EPA IRIS DATABASE

NTP 8TH ANNUAL REPORT ON CARCINOGENS, 1998: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- - - - -

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