

Valid 05/2002 - 07/2002

Aldrich Chemical Co., Inc.
1001 West St. Paul
Milwaukee, WI 53233 USA
Tel: 414-273-3850

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 #: 129941
NAME: 1-METHYL-3-NITRO-1-NITROSOGUANIDINE, 97%

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

CAS #: 70-25-7
MF: C2H5N5O3
EC NO: 200-730-1

SYNONYMS

GUANIDINE, N-METHYL-N'-NITRO-N-NITROSO- (9CI) *
METHYLNITRONITROSOGUANIDINE * N-METHYL-N'-NITRO-N-NITROSOGUANIDINE *
1-METHYL-1-NITROSO-3-NITROGUANIDINE * 1-METHYL-3-NITRO-1-
NITROSOGUANIDINE * N-METHYL-N-NITROSONITROGUANIDIN (GERMAN) * N-
METHYL-N-NITROSO-N'-NITROGUANIDINE * N-METYLO-N'-NITRO-N-
NITROZOGUANIDYNY (POLISH) * MNNG * NITROSOGUANIDINE * N-NITROSO-N-
METHYLNITROGUANIDINE * N'-NITRO-N-NITROSO-N-METHYLGUANIDINE * NSC
9369 * RCRA WASTE NUMBER U163 *

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

LABEL PRECAUTIONARY STATEMENTS

FLAMMABLE (USA)
HIGHLY FLAMMABLE (EU)
TOXIC
DANGEROUS FOR THE ENVIRONMENT
MAY CAUSE CANCER.
MAY CAUSE HERITABLE GENETIC DAMAGE.
POSSIBLE RISK OF HARM TO THE UNBORN CHILD.
POSSIBLE RISK OF IMPAIRED FERTILITY.
TOXIC IF SWALLOWED.
HARMFUL BY INHALATION.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS
IN THE AQUATIC ENVIRONMENT.
MUTAGEN.
POSSIBLE TERATOGEN.
KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (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.
LIGHT SENSITIVE

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

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN IMMEDIATELY.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
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.

THIS MATERIAL, LIKE MOST MATERIALS IN POWDER FORM, IS CAPABLE OF CREATING A DUST EXPLOSION.

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

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.

WEAR DISPOSABLE COVERALLS AND DISCARD THEM AFTER USE.

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.

EVACUATE AREA.

SHUT OFF ALL SOURCES OF IGNITION.

USE NONSPARKING TOOLS.

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

REFER TO SECTION 8.

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

USE ONLY IN A CHEMICAL FUME HOOD.

SAFETY SHOWER AND EYE BATH.

WASH CONTAMINATED CLOTHING BEFORE REUSE.

WASH THOROUGHLY AFTER HANDLING.

DO NOT BREATHE DUST.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

AVOID PROLONGED OR REPEATED EXPOSURE.

NIOSH/MSHA-APPROVED RESPIRATOR.

COMPATIBLE CHEMICAL-RESISTANT GLOVES.

CHEMICAL SAFETY GOGGLES.

STORE IN A COOL DRY PLACE.

KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.

TOXIC.

SEVERE IRRITANT.

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

APPEARANCE AND ODOR

ORANGE POWDER

PHYSICAL PROPERTIES

MELTING POINT: 118 C (DEC)

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

STABILITY

STABLE.

CONDITIONS TO AVOID

MAY DECOMPOSE ON EXPOSURE TO LIGHT.

INCOMPATIBILITIES

MOISTURE

OXIDIZING AGENTS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

THERMAL DECOMPOSITION MAY PRODUCE CARBON MONOXIDE, CARBON DIOXIDE, AND NITROGEN OXIDES.

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.
MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
HARMFUL IF INHALED.
TOXIC IF SWALLOWED.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND
VOMITING.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

CHRONIC EFFECTS

POTENTIAL CANCER HAZARD.
MAY ALTER GENETIC MATERIAL.
POSSIBLE RISK OF CONGENITAL MALFORMATION IN THE FETUS.
MAY CAUSE REPRODUCTIVE DISORDERS.

RTECS #: MF4200000

GUANIDINE, 1-METHYL-3-NITRO-1-NITROSO-

TOXICITY DATA

ORL-RAT LD50:90 MG/KG	ZKKOBW 91,183,1978
SCU-RAT LD50:420 MG/KG	ZEKBAI 69,103,1967
IVN-RAT LD50:80 MG/KG	EJCAAH 16,395,1980
IPR-MUS LD50:66 MG/KG	JJIND8 62,911,1979
IVN-MUS LD50:37300 UG/KG	NCISP* JAN1986
ORL-HAM LD50:1070 MG/KG	CALEDQ 4,241,1978

TARGET ORGAN DATA

BRAIN AND COVERINGS (TUMORS)
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
CARDIAC (OTHER CHANGES)
LUNGS, THORAX OR RESPIRATION (ACUTE PULMONARY EDEMA)
LUNGS, THORAX OR RESPIRATION (TUMORS)
LUNGS, THORAX OR RESPIRATION (BRONCHOGENIC CARCINOMA)
GASTROINTESTINAL (ULCERATION OR BLEEDING FROM STOMACH)
GASTROINTESTINAL (TUMORS)
GASTROINTESTINAL (COLON TUMORS)
LIVER (TUMORS)
KIDNEY, URETER, BLADDER (KIDNEY TUMORS)
BLOOD (LEUKEMIA)
BLOOD (LYMPHOMA INCLUDING HODGKIN'S DISEASE)
SKIN AND APPENDAGES (TUMORS)
EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)
EFFECTS ON FERTILITY (LITTER SIZE)
EFFECTS ON FERTILITY (OTHER MEASURES OF FERTILITY)
EFFECTS ON EMBRYO OR FETUS (CYTOLOGICAL CHANGES)
EFFECTS ON EMBRYO OR FETUS (FETOTOXICITY)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CENTRAL NERVOUS SYSTEM)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (CRANIOFACIAL)
SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)
TUMORIGENIC EFFECTS (TRANSPLACENTAL TUMORIGENESIS)
TUMORIGENIC (CARCINOGENIC 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 - - - - -
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF
THIS MATERIAL.

OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -
CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

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

EC INDEX NO: 612-083-00-6

HIGHLY FLAMMABLE

TOXIC

DANGEROUS FOR THE ENVIRONMENT

R 45

MAY CAUSE CANCER.

R 36/38

IRRITATING TO EYES AND SKIN.

R 51/53

TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS
IN THE AQUATIC ENVIRONMENT.

S 45

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

S 61

AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/
SAFETY DATA SHEETS.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

IARC CANCER REVIEW:ANIMAL SUFFICIENT EVIDENCE IMEMDT 4,183,1974

IARC CANCER REVIEW:HUMAN INADEQUATE EVIDENCE IMSUDL 7,248,1987

IARC CANCER REVIEW:GROUP 2A IMSUDL 7,248,1987

OEL-AUSTRIA: CARCINOGEN, JAN1999

OEL-FRANCE: CARCINOGEN, JAN1993

OEL-UNITED KINGDOM: CARCINOGEN, SEP2000

NOES 1983: HZD B0070; NIS 1; TNF 75; NOS 2; TNE 523

EPA GENETOX PROGRAM 1988, POSITIVE: ASPERGILLUS-RECOMBINATION;

CARCINOGENICITY-MOUSE/RAT

EPA GENETOX PROGRAM 1988, POSITIVE: CELL TRANSFORM.-SA7/F344 RAT; CELL
TRANSFORM.-BALB/C-3T3

EPA GENETOX PROGRAM 1988, POSITIVE: SHE-FOCUS ASSAY; CELL
TRANSFORM.-RLV F344 RAT EMBRYO

EPA GENETOX PROGRAM 1988, POSITIVE: CELL TRANSFORM.-SA7/SHE; IN VITRO
CYTOGENETICS-NONHUMAN

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

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

EPA GENETOX PROGRAM 1988, POSITIVE: L5178Y CELLS IN VITRO-TK TEST;
MOUSE SPOT TEST

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

EPA GENETOX PROGRAM 1988, POSITIVE: B SUBTILIS REC ASSAY; E COLI POLA
WITHOUT S9

EPA GENETOX PROGRAM 1988, POSITIVE: HISTIDINE REVERSION-AMES TEST

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

EPA GENETOX PROGRAM 1988, POSITIVE: IN VITRO UDS IN RAT LIVER; 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-REVERSION; S
POMBE-REVERSION
EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: SHE-CLONAL ASSAY;
CELL TRANSFORM.-C3H/10T1/2
EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: CELL TRANSFORM.-MOUSE
PROSTATE
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: IN VITRO CYTOGENETICS-HUMAN; N
CRASSA-ANEUPLOIDY
EPA GENETOX PROGRAM 1988, NEGATIVE: SPERM MORPHOLOGY-MOUSE; UDS IN
MOUSE GERM CELLS
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: CYTOGENETICS-MALE GERM CELL;
MAMMALIAN MICRONUCLEUS
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: IN VITRO SCE-HUMAN LYMPHOCYTES;
MOUSE SPECIFIC LOCUS
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
NTP 9TH REPORT ON CARCINOGENS,2000:REASONABLY ANTICIPATED TO BE HUMAN
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- - - - -
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