MATERIAL SAFETY DATA SHEET

Date Printed: 23.07.2013
Date Updated: 08.01.2009
Version 1.5

Section 1 - Product and Company Information

Product Name	BUSULFAN, 98%
Product Number	150606
Brand	ALDRICH
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
1,4-BUTANEDIOL DIMETHANESULFONATE	55-98-1	No

Formula: C6H14O6S2

Synonyms: AN 33501 * 1,4-Bis(methanesulfonoxy)butane * (1,4-Bis(methanesulfonyloxy)butane) * Busulfan * Busulphan * Busulphane * 1,4-Butanediol dimethanesulfonate * 1,4-Butanediol dimethanesulphonate * C.B. 2041 * 2041 C.B. * Citosulfan * 1,4-Dimesyloxybutane * 1,4-Dimethanesulfonoxybutane * 1,4-Dimethanesulfonoxylbutane * 1,4-Dimethanesulfonyloxybutane * 1,4-Dimethanesulphonyloxybutane * 1,4-Dimethylsulfonoxybutane * 1,4-Dimethylsulfonyloxybutane * GT 41 * Leucosulfan * Mablin * Methanesulfonic acid, tetramethylene ester * Mielevcin * Mielosan * Mielucin * Milecitan * Mileran * Misulban * Mitostan * Myeleukon * Myeloleukon * Myelosan * Mylecytan * Myleran * NCI-C01592 * NSC-750 * NSC-750 sulphabutin * Sulfabutin * Sulphabutin * Tetramethylene bis(methanesulfonate) * Tetramethylene dimethane sulfonate * Tetramethylenester kyseliny methansulfonove (Czech) * X 149

RTECS Number: EK1750000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

May cause cancer. May cause heritable genetic damage. Toxic by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Possible risk of harm to the unborn child.

Target organ(s): Bone marrow. Eyes. Calif. Prop. 65 carcinogen & developmental hazard.

HMIS RATING
HEALTH: 4*
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING
HEALTH: 4
FLAMMABILITY: 0
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Section 5 - Fire Fighting Measures

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

EXPOSURE HAZARD(S)
Material: Toxic. Irritant.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP

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

HANDLING

User Exposure: Avoid inhalation. Do not get in eyes, on skin, on clothing.

STORAGE

Suitable: Keep tightly closed. Store in a cool dry place.

SPECIAL REQUIREMENTS

Moisture sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT

Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance	Color: Faintly beige Form: Fine crystals

Property	Value	At Temperature or Pressure
Molecular Weight	246,3000 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	115,000 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	

Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Conditions of Instability: May decompose on exposure to moist air or water.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Sulfur oxides.

Section 11 - Toxicological Information

TARGET ORGAN(S) OR SYSTEM(S)

Bone marrow. Eyes.

TOXICITY DATA

Intraperitoneal
Rat
18 MG/KG
LD50
Remarks: Nutritional and Gross Metabolic:Weight loss or decreased weight gain. Blood:Changes in bone marrow not included above. Gastrointestinal:Other changes.

Subcutaneous
Rat
22 MG/KG
LD50
Remarks: Behavioral:Somnolence (general depressed activity). Gastrointestinal:Hypermotility, diarrhea.

Intravenous
Rat
1800 UG/KG
LD50

Oral
Mouse
110,000000 mg/kg
LD50
Remarks: Skin and Appendages: Other: Hair. Gastrointestinal:Hypermotility, diarrhea.

Intraperitoneal
Mouse
86 MG/KG
LD50
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Olfaction:Other changes. Behavioral:Somnolence (general depressed activity). Gastrointestinal:Hypermotility, diarrhea.

Subcutaneous
Mouse
63 MG/KG
LD50
Remarks: Gastrointestinal:Hypermotility, diarrhea.
Behavioral:Somnolence (general depressed activity).

Oral
Bird (wild)
56,200000 mg/kg
LD50

CHRONIC EXPOSURE - CARCINOGEN
Result: Carcinogen.

Species: Man
Route of Application: Oral
Dose: 5684 UG/KG
Exposure Time: 21W
Frequency: C
Result: Tumorigenic:Carcinogenic by RTECS criteria.
Blood:Leukemia

Species: Mouse
Route of Application: Intravenous
Dose: 48 MG/KG
Exposure Time: 42D
Frequency: I
Result: Tumorigenic:Neoplastic by RTECS criteria. Blood:Leukemia
Blood:Lymphomas including Hodgkin's disease.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 1200 MG/KG
Exposure Time: 8W
Frequency: I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS
criteria. Lungs, Thorax, or Respiration:Tumors.

Species: Mouse
Route of Application: Intraperitoneal
Dose: 70 MG/KG
Exposure Time: 6W
Frequency: I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS
criteria. Blood:Aplastic anemia. Blood:Leukemia

Species: Woman
Route of Application: Oral
Dose: 1140 MG/KG
Exposure Time: 9Y
Frequency: I
Result: Tumorigenic Effects: Other reproductive system tumors.
Tumorigenic:Carcinogenic by RTECS criteria. Kidney, Ureter,
Bladder:Kidney tumors.

Species: Woman
Route of Application: Oral
Dose: 16720 UG/KG

Exposure Time: 2Y
Frequency: I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Tumorigenic
Effects: Uterine tumors

IARC CARCINOGEN LIST

Rating: Group 1

NTP CARCINOGEN LIST

Rating: Known to be carcinogenic.

CHRONIC EXPOSURE - TERATOGEN

Species: Woman
Dose: 17 MG/KG
Route of Application: Oral
Exposure Time: (4-36W PREG)
Result: Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Endocrine system.

Species: Woman
Dose: 17 MG/KG
Route of Application: Oral
Exposure Time: (4-36W PREG)
Result: Specific Developmental Abnormalities: Urogenital system. Specific Developmental Abnormalities: Other developmental abnormalities. Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Woman
Dose: 5280 UG/KG
Route of Application: Unreported
Exposure Time: (14-26W PREG)
Result: Specific Developmental Abnormalities: Gastrointestinal system.

Species: Rat
Dose: 48 MG/KG
Route of Application: Oral
Exposure Time: (7-14D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

Species: Rat
Dose: 5600 UG/KG
Route of Application: Oral
Exposure Time: (7-14D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Rat
Dose: 5 MG/KG
Route of Application: Oral
Exposure Time: (13D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Rat

Dose: 8 MG/KG
Route of Application: Oral
Exposure Time: (11-14D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Rat
Dose: 10 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (15D PREG)
Result: Specific Developmental Abnormalities: Urogenital system. Effects on Newborn: Delayed effects.

Species: Rat
Dose: 10 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

Species: Rat
Dose: 20 MG/KG
Route of Application: Subcutaneous
Exposure Time: (20D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Rat
Dose: 10 MG/KG
Route of Application: Unreported
Exposure Time: (14D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Mouse
Dose: 100 MG/KG
Route of Application: Oral
Exposure Time: (7D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 40 MG/KG
Route of Application: Oral
Exposure Time: (6-9D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 160 MG/KG
Route of Application: Oral
Exposure Time: (10-12D PREG)
Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Mouse
Dose: 30 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (9D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Species: Mouse
Dose: 30 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (10D PREG)
Result: Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

Species: Rabbit
Dose: 32 MG/KG
Route of Application: Oral
Exposure Time: (7-14D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Hepatobiliary system. Specific Developmental Abnormalities: Urogenital system.

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 10 MOL/L
Cell Type: HeLa cell
Mutation test: DNA inhibition

Species: Human
Dose: 10 MG/L
Cell Type: leukocyte
Mutation test: Other mutation test systems

Species: Human
Dose: 80 UMOL/L
Cell Type: lymphocyte
Mutation test: Other mutation test systems

Species: Woman
Route: Unreported
Dose: 138 MG/KG
Mutation test: Cytogenetic analysis

Species: Human
Dose: 10 MG/L
Cell Type: leukocyte
Mutation test: Cytogenetic analysis

Species: Human
Dose: 500 UG/L
Cell Type: lymphocyte
Mutation test: Cytogenetic analysis

Species: Human
Dose: 1 MG/L
Cell Type: Bone marrow
Mutation test: Cytogenetic analysis

Species: Human
Route: Oral
Dose: 2 MG/KG
Exposure Time: 5W
Mutation test: Sister chromatid exchange

Species: Human

Dose: 500 UG/L
Cell Type: lymphocyte
Mutation test: Sister chromatid exchange

Species: Human
Dose: 1 MG/L
Cell Type: Bone marrow
Mutation test: Sister chromatid exchange

Species: Rat
Route: Intraperitoneal
Dose: 43500 UG/KG
Mutation test: DNA damage

Species: Rat
Route: Unreported
Dose: 4 MG/KG
Mutation test: DNA damage

Species: Rat
Route: Intraperitoneal
Dose: 4400 UG/KG
Mutation test: DNA inhibition

Species: Rat
Route: Oral
Dose: 30 MG/KG
Mutation test: DNA inhibition

Species: Rat
Route: Intraperitoneal
Dose: 4 MG/KG
Mutation test: Dominant lethal test

Species: Mouse
Route: Intraperitoneal
Dose: 50 MG/KG
Mutation test: Micronucleus test

Species: Mouse
Dose: 3 MG/L
Exposure Time: 4H (+S9)
Cell Type: lymphocyte
Mutation test: Mutation in microorganisms

Species: Mouse
Route: Intraperitoneal
Dose: 20 MG/KG
Mutation test: specific locus test

Species: Mouse
Dose: 40 MG/KG
Cell Type: leukocyte
Mutation test: DNA

Species: Mouse
Dose: 20 MG/KG
Cell Type: Ascites tumor
Mutation test: DNA

Species: Mouse
Route: Intraperitoneal
Dose: 40 MG/KG
Mutation test: DNA damage

Species: Mouse
Route: Unreported
Dose: 10 MG/KG
Mutation test: DNA damage

Species: Mouse
Route: Intraperitoneal
Dose: 30 MG/KG
Mutation test: Unscheduled DNA synthesis

Species: Mouse
Dose: 10 UMOL/L
Cell Type: leukocyte
Mutation test: DNA inhibition

Species: Mouse
Dose: 10 UMOL/L
Cell Type: leukocyte
Mutation test: Other mutation test systems

Species: Mouse
Route: Intraperitoneal
Dose: 5 MG/KG
Mutation test: Cytogenetic analysis

Species: Mouse
Route: Unreported
Dose: 5 MG/KG
Mutation test: Cytogenetic analysis

Species: Mouse
Route: Intraperitoneal
Dose: 5 MG/KG
Mutation test: Dominant lethal test

Species: Mouse
Dose: 6 MG/L
Exposure Time: 4H
Cell Type: lymphocyte
Mutation test: Mutation in mammalian somatic cells.

Species: Mouse
Route: Intraperitoneal
Dose: 30 MG/KG
Exposure Time: 5D
Mutation test: sperm

Species: Hamster
Dose: 2 MG/L
Cell Type: ovary
Mutation test: Micronucleus test

Species: Hamster
Dose: 20 MG/L
Cell Type: kidney

Mutation test: Morphological transformation.

Species: Hamster
Route: Oral
Dose: 50 MG/KG
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 1570 MG/L
Cell Type: lung
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 4 MG/L
Cell Type: ovary
Mutation test: Cytogenetic analysis

Species: Hamster
Route: Intraperitoneal
Dose: 25 MG/KG
Mutation test: Sister chromatid exchange

Species: Hamster
Dose: 20 MG/L
Cell Type: ovary
Mutation test: Sister chromatid exchange

Species: Hamster
Dose: 40 MG/L
Cell Type: ovary
Mutation test: Mutation in mammalian somatic cells.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD
Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Species: Man
Dose: 5400 UG/KG
Route of Application: Oral
Exposure Time: (90D MALE)
Result: Paternal Effects: Breast development.

Species: Woman
Dose: 8460 UG/KG
Route of Application: Oral
Exposure Time: (22W PRE)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Woman
Dose: 4400 UG/KG
Route of Application: Unreported
Exposure Time: (4W PRE)
Result: Maternal Effects: Menstrual cycle changes or disorders.

Species: Rat
Dose: 10 MG/KG
Route of Application: Oral
Exposure Time: (13D PREG)
Result: Effects on Newborn: Delayed effects.

Species: Rat
Dose: 10 MG/KG
Route of Application: Oral
Exposure Time: (1D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.
Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count).

Species: Rat
Dose: 49 MG/KG
Route of Application: Oral
Exposure Time: (49D MALE)
Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).

Species: Rat
Dose: 6 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).

Species: Rat
Dose: 1 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (9D PREG)
Result: Effects on Newborn: Behavioral.

Species: Rat
Dose: 10 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (2D PREG)
Result: Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Effects on Fertility: Other measures of fertility Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat
Dose: 6 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rat
Dose: 10 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat
Dose: 10 MG/KG
Route of Application: Intravenous
Exposure Time: (8D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse
Dose: 240 MG/KG
Route of Application: Oral
Exposure Time: (6-9D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse
Dose: 200 MG/KG
Route of Application: Oral
Exposure Time: (8-12D PREG)
Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Mouse
Dose: 20 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count).

Species: Mouse
Dose: 10 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D PRE)
Result: Effects on Fertility: Other measures of fertility
Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Species: Mouse
Dose: 25 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse
Dose: 10 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (18D PREG)
Result: Effects on Newborn: Delayed effects.

Species: Monkey
Dose: 10 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.
Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Hamster
Dose: 40 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count).

Species: Mammal
Dose: 8 MG/KG
Route of Application: Oral
Exposure Time: (1D PRE)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Mammal
Dose: 4 MG/KG
Route of Application: Oral
Exposure Time: (1D MALE)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
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

DOT
Proper Shipping Name: Toxic solids, organic, n.o.s.
UN#: 2811
Class: 6.1
Packing Group: Packing Group III
Hazard Label: Toxic substances.
PIH: Not PIH

IATA
Proper Shipping Name: Toxic solid, organic, n.o.s.
IATA UN Number: 2811
Hazard Class: 6.1
Packing Group: III

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION
Symbol of Danger: T+
Indication of Danger: Very toxic.
R: 45-26/27/28
Risk Statements: May cause cancer. Very toxic by inhalation, in contact with skin and if swallowed.
S: 53-36/37/39-45
Safety Statements: Avoid exposure - obtain special instructions before use. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Toxic.

Risk Statements: May cause cancer. May cause heritable genetic damage. Toxic by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Possible risk of harm to the unborn child.
Safety Statements: Wear suitable protective clothing, gloves, and eye/face protection. Do not breathe dust. Keep container tightly closed in a cool well-ventilated place. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Target organ(s): Bone marrow. Eyes. Calif. Prop. 65 carcinogen & developmental hazard.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65
California Prop - 65: This product is or contains chemical(s) known to the state of California to cause developmental toxicity. This product is or contains chemical(s) known to the state of California to cause cancer.

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., 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.