SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 02/04/2005
Date Updated: 12/21/2004
Version 1.120

Section 1 - Product and Company Information

Product Name Benzene, anhydrous, 99.8%
Product Number 401765
Brand Aldrich Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 800 325 5052
Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	OSHA	SARA 313	EC no	Annex I Index Number
BENZENE	71-43-2	Yes	Yes	200-753-7	601-020-00-8

Formula C6H6
Synonyms (6)Annulene, Benzeen (Dutch), Benzen (Polish), Benzene (ACGIH:OSHA), Benzin (Obs.), Benzine (Obs.), Benzol (OSHA), Benzole, Benzolene, Benzolo (Italian), Bicarburet of hydrogen, Carbon oil, Coal naphtha, Cyclohexatriene, Fenzen (Czech), Mineral naphtha, NCI-C55276, Phene, Phenyl hydride, Pyrobenzol, Pyrobenzole, RCRA waste number U019

Section 3 - Hazards Identification

Emergency Overview
Flammable (USA) Highly Flammable (EU). Toxic.
May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes.
Danger: contains benzene, cancer hazard. Calif. Prop. 65 reproductive hazard. Target organ(s): Blood. Bone marrow.

HMIS Rating
Health: 2* Flammability: 3 Reactivity: 0

NFPA Rating
Health: 2 Flammability: 3 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 immediately.

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

Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure
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

Flammable Hazards: Yes

Explosion Hazards
Vapor may travel considerable distance to source of ignition and flash back.
Container explosion may occur under fire conditions.

Flash Point: 12 °F -11 °C

Explosion Limits: **Lower:** 1.3 % **Upper:** 8 %

Autoignition Temp: 562 °C **Flammability:** Yes

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)
Flammable liquid. Vapor may travel considerable distance to source of ignition and flash back. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area. Shut off all sources of ignition.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep container closed. Keep away from heat, sparks, and open flame.

Section 8 - Exposure Controls / PPE

Engineering Controls

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

Personal Protective Equipment

Respiratory

Government approved respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Exposure Limits

Country	Type	Value
Poland	NDS	1.6
Poland	NDSCh	-
Poland	NDSP	-

Exposure Limits, RTECS

Country	Source	Type	Value
USA	ACGIH	TWASTEL	0.5 PPM3 2.5 PPM
USA	MSHA Standard	Ceiling concentration	25 PPM (80 MG/M3) (SKIN)
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH	TWACeiling concentration	0.1 PPM 1 PPM/15M

Section 9 - Physical/Chemical Properties

Appearance

Physical State	Color
Liquid	Colorless

Molecular Weight: 78.11 AMU

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	80 - 80.2 °C	760 mmHg
MP/MP Range	5.5 °C	
Freezing Point	N/A	
Vapor Pressure	74.6 mmHg	20 °C
Vapor Density	2.77 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.879 g/cm3	
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	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	12 °F	Method: closed cup
Flash Point °C	-11 °C	Method: closed cup
Explosion Limits	Lower: 1.3 % Upper: 8 %	
Flammability	N/A	
Autoignition Temp	562 °C	
Refractive Index	1.501	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable

Stable.

Materials to Avoid

Acids, Bases, Halogens, Strong oxidizing agents, Avoid contact with metal salts.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide.

Hazardous Polymerization

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes skin irritation.

Skin Absorption

Toxic if absorbed through skin.

Eye Contact

Causes severe eye irritation.

Inhalation

Toxic if inhaled. Vapor or mist is irritating to the mucous membranes and upper respiratory tract.

Ingestion

Toxic if swallowed.

Target Organ(s) or System(s)

Blood. Bone marrow. Eyes. Female reproductive system.

Signs and Symptoms of Exposure

Exposure can cause: Nausea, dizziness, and headache. Narcotic effect. Inhalation of high concentrations of benzene may have an initial stimulatory effect on the central nervous system characterized by exhilaration, nervous excitation and/or giddiness, depression, drowsiness, or fatigue. The victim may experience tightness in the chest, breathlessness, and loss of consciousness. Tremors, convulsions, and death due to respiratory paralysis or circulatory collapse can occur in a few minutes to several hours following severe exposures. Aspiration of small amounts of liquid immediately causes pulmonary edema and hemorrhage of pulmonary tissue. Direct skin contact may cause erythema. Repeated or prolonged skin contact may result in drying, scaling dermatitis, or development of secondary skin infections. The chief target organ is the hematopoietic system. Bleeding from the nose, gums, or mucous membranes and the development of purpuric spots, pancytopenia, leukopenia, thrombocytopenia, aplastic anemia, and leukemia may occur as the condition progresses. The bone marrow may appear normal, aplastic or hyperplastic, and may not correlate with peripheral blood-forming tissues. The onset of effects of prolonged benzene exposure may be delayed for many months or years after the actual exposure has ceased. Blood effects.

RTECS Number: CY1400000

Toxicity Data

Inhalation - Human: 2 PPH/5M (LCLO)

Oral - Man: 50 mg/kg (LDLO)

Inhalation - Human: 65 mg/m3 (LCLO)
Remarks: Blood:Other changes.

Oral - Rat: 930 mg/kg (LD50)
Remarks: Behavioral:Tremor.
Behavioral:Convulsions or effect on seizure threshold.

Inhalation - Rat: 10,000 ppm (LC50)

Intraperitoneal - Rat: 1100 UG/KG (LD50)

Oral - Mouse: 4700 mg/kg (LD50)

Inhalation - Mouse: 9,980 ppm (LC50)
Remarks: Behavioral:General anesthetic.
Behavioral:Muscle weakness.
Lungs, Thorax, or Respiration:Dyspnea.

Skin - Mouse: 48 mg/kg (LD50)

Intraperitoneal - Mouse: 340 MG/KG (LD50)

Skin - Rabbit: >9400 UL/KG (LD50)

Skin - Guinea pig: >9400 UL/KG (LD50)

Oral - Mammal: 5700 mg/kg (LD50)

Irritation Data

Skin - Rabbit: 15 mg 24H
Remarks: Open Irritation test

Skin - Rabbit: 20 mg 24H
Remarks: Moderate Irritation effect

Eyes - Rabbit: 88 mg
Remarks: Moderate Irritation effect

Eyes - Rabbit: 2 mg 24H
Remarks: Severe irritation effect

Chronic Exposure - Carcinogen
Result: This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Man - Inhalation: 200 MG/M3 78W- I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Leukemia Blood:Thrombocytopenia.

Human - Inhalation: 10 PPM 8H/10Y I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Leukemia

Rat - Oral: 52 GM/KG 52W I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Endocrine:Tumors. Blood:Leukemia

Rat - Inhalation: 1200 PPM 6H/10W I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Ear:Tumors.

Mouse - Oral: 18250 MG/KG 2Y C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Endocrine:Tumors. Blood:Lymphomas including Hodgkin's disease.

Mouse - Inhalation: 300 PPM 6H/16W I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Blood:Lymphomas including Hodgkin's disease.

Mouse - Skin: 1200 GM/KG 49W I
Result: Tumorigenic:Neoplastic by RTECS criteria. Skin and Appendages: Other: Tumors.

Mouse - Intraperitoneal: 1200 MG/KG 8W I
Result: Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors.

Mouse - Subcutaneous: 600 MG/KG 17W I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Blood:Leukemia Blood:Lymphomas including Hodgkin's disease.

Mouse - Parenteral: 670 MG/KG 19W I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Blood:Leukemia Blood:Lymphomas including Hodgkin's disease.

Human - Inhalation: 150 PPM 15W/8Y I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Leukemia

Rat - Oral: 52 GM/KG 1Y I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Ear:Tumors. Blood:Leukemia

Rat - Oral: 10 GM/KG 52W I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Endocrine:Tumors. Blood:Leukemia

Man - Inhalation: 600 MG/M3 4Y- I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Leukemia

Man - Inhalation: 150 PPM 11Y I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Lymphomas including Hodgkin's disease.

Mouse - Inhalation: 1200 PPM 6H/10W I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Ear:Tumors. Lungs, Thorax, or Respiration:Tumors.

Mouse - Oral: 2400 MG/KG 8W I
Result: Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors.

Human - Inhalation: 8 PPB 4W I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Leukemia

Human - Inhalation: 10 MG/M3 11Y- I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Leukemia

Mouse - Inhalation: 300 PPM 6H/16W I
Result: Tumorigenic:Carcinogenic by RTECS criteria. Blood:Leukemia

OSHA Carcinogen List
Rating
cancer hazard

IARC Carcinogen List
Rating
Group 1

NTP Carcinogen List

Rating	*Species*	*Route*
Clear evidence. Known to be carcinogenic.	Mouse/rat	Gavage

ACGIH Carcinogen List
Rating
A1

Chronic Exposure - Teratogen

Species	*Dose*	*Route of Application*	*Exposure Time*
Rat	50 PPM/24H	Inhalation	(7-14D PREG)
Result:Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).			
Mouse	9 GM/KG	Oral	(6-15D PREG)
Result:Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).			
Mouse	500 PPM/7H	Inhalation	(6-15D PREG)
Result:Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.			
Mouse	500 MG/M3/12H	Inhalation	(6-15D PREG)
Result:Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).			

Specific Developmental Abnormalities: Musculoskeletal system.

Mouse	5 PPM	Inhalation	(6-15D PREG)

Result:Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material).
Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

Mouse	20 PPM/6H	Inhalation	(6-15D PREG)

Result:Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

Mouse	219 MG/KG	Intraperitoneal	(14D PREG)

Result:Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).
Specific Developmental Abnormalities: Hepatobiliary system.

Mouse	1100 MG/KG	Subcutaneous	(12D PREG)

Result:Effects on Embryo or Fetus: Other effects to embryo.

Mouse	7030 MG/KG	Subcutaneous	(12-13D PREG)

Result:Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord).
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
Specific Developmental Abnormalities: Musculoskeletal system.

Mouse	13200 UG/KG	Intravenous	(13-16D PREG)

Result:Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material).

Rabbit	1 GM/M3/24H	Inhalation	(7-20D PREG)

Result:Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
Specific Developmental Abnormalities: Other developmental abnormalities.

Chronic Exposure - Mutagen

Species	*Dose*	*Cell Type*	*Mutation test*

Result: Laboratory experiments have shown mutagenic effects.

Human	2200 UMOL/L			leukocyte	DNA inhibition
Human	2200 UMOL/L			HeLa cell	DNA inhibition
Human	5 UMOL/L			lymphocyte	Other mutation test systems
Human	125 PPM	Inhalation	1Y		Cytogenetic analysis
Human	1 MMOL/L		72H	leukocyte	Cytogenetic analysis
Human	1 MG/L			lymphocyte	Cytogenetic analysis
Human	10 PPM	Unreported	4W		Cytogenetic analysis
Human	200 UMOL/L			lymphocyte	Sister chromatid exchange
Human	1 GM/L			lymphocyte	Mutation in mammalian somatic cells.
Rat	1 PPM	Inhalation	6H		Micronucleus test
Rat	1 MMOL/L			liver	Unscheduled DNA synthesis
Rat	400 PPM	Inhalation			DNA inhibition
Rat	1 MMOL/L			liver	Other mutation test systems
Rat	1 MMOL/L			Bone marrow	Other mutation test systems
Rat	1 GM/L	Subcutaneous			Other mutation test systems
Rat	2200 MG/KG	Subcutaneous			Other mutation test systems
Rat	300 MG/M3/16W-I	Inhalation			Cytogenetic analysis
Rat	2400 MG/KG	Subcutaneous	12D		Cytogenetic analysis
Rat	234 MG/KG	Intraperitoneal			Cytogenetic analysis
Rat	39060 UG/KG	Oral			Cytogenetic analysis
Rat	3 PPM	Inhalation	6H		Sister chromatid exchange
Rat	1 MMOL/L			leukocyte	Sister chromatid exchange
Mouse	12500 NMOL/L			Embryo	Micronucleus test
Mouse	440 MG/KG	Subcutaneous			Micronucleus test
Mouse	40 MG/KG	Oral			Micronucleus test
Mouse	264 MG/KG	Intraperitoneal	24H		Micronucleus test
Mouse	10 PPM	Inhalation	6H		Micronucleus test
Mouse	62500 UG/L (+S9)			lymphocyte	Mutation in microorganisms
Mouse	2500 MG/L (+S9)			Embryo	Mutation in microorganisms
Mouse	1 GM/L			Embryo	Morphological transformation.
Mouse	150 GM/L			fibroblast	Morphological transformation.
Mouse	3840 UMOL/L			lymphocyte	DNA damage
Mouse	2640 MG/KG	Intraperitoneal	3D		DNA
Mouse	2 GM/KG	Oral			Other mutation test systems
Mouse	5 MMOL/L			Other cell types	Other mutation test systems
Mouse	20 GM/KG	Oral			DNA inhibition
Mouse	10 MMOL/L			lymphocyte	Other mutation test systems
Mouse	880 MG/KG	Intraperitoneal			DNA inhibition
Mouse	3000 PPM	Inhalation	4H		DNA inhibition
Mouse	3 MMOL/L			Bone marrow	DNA inhibition
Mouse	10 PPM	Inhalation	6H		Sister chromatid exchange
Mouse	5 GM/KG	Intraperitoneal			Sister chromatid exchange
Mouse	20 MG/KG	Oral			Cytogenetic analysis
Mouse	264 MG/KG	Intraperitoneal	3D		Cytogenetic analysis
Mouse	3000 PPM	Inhalation			Cytogenetic analysis
Mouse	1 MG/KG	Oral			Dominant lethal test
Mouse	5 MG/KG	Intraperitoneal			Dominant lethal test
Mouse	12500 UG/L			lymphocyte	Mutation in mammalian somatic cells.
Mouse	40 PPB/6W-C	Inhalation			Mutation in mammalian somatic cells.
Mouse	2 GM/KG	Oral	5D		Mutation in mammalian somatic cells.
Hamster	100 UG/L			Embryo	Morphological transformation.
Hamster	17 MMOL/L			ovary	DNA damage

Hamster	550 MG/L		lung	Cytogenetic analysis
Hamster	600 MG/L		ovary	Cytogenetic analysis
Hamster	750 MG/L		ovary	Sister chromatid exchange
Hamster	62500 UG/L		liver	SLN
Hamster	30 UMOL/L		Embryo	SLN
Hamster	10 UMOL/L		Embryo	Mutation in mammalian somatic cells.
Rabbit	2344 MG/KG	Subcutaneous		DNA damage
Rabbit	2 GM/KG	Subcutaneous		DNA inhibition
Rabbit	1 MMOL/L		Bone marrow	Other mutation test systems
Cat	1 MMOL/L		Bone marrow	Other mutation test systems
Rabbit	8400 MG/KG	Subcutaneous		Cytogenetic analysis

Chronic Exposure - Reproductive Hazard

Species	*Dose*	*Route of Application*	*Exposure Time*
Rat	670 MG/M3/24H	Inhalation	(15D PRE/1-22D PREG)

Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Rat	56600 UG/M3/24H	Inhalation	(1-22D PREG)

Result: Effects on Newborn: Biochemical and metabolic.

Rat	150 PPM/24H	Inhalation	(7-14D PREG)

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

Mouse	12 GM/KG	Oral	(6-15D PREG)

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

Mouse	6500 MG/KG	Oral	(8-12D PREG)

Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Mouse	5 MG/KG	Intraperitoneal	(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). Effects on Embryo or Fetus: Fetal death.

Mouse	4 GM/KG	Parenteral	(12D PREG)

Result: Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4).

Rabbit	1 GM/M3/24H	Inhalation	(7-20D PREG)

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

Rabbit	500 PPM/7H	Inhalation	(6-18D PREG)

Result: Maternal Effects: Other effects.

Section 12 - Ecological Information

Acute Ecotoxicity Tests

Test Type
EC50 Algae
Species
Selenastrum capricornutum resp.
Time: **Value:**
72.0 h 29 mg/l
Test Type
EC50 Daphnia
Species
Daphnia magna
Time: **Value:**
48.0 h 22 mg/l
Test Type
EC50 Daphnia
Species
Daphnia magna
Time: **Value:**
48.0 h 9.2 mg/l
Test Type
LC50 Fish
Species
Onchorhynchus mykiss (Rainbow trout)
Time: **Value:**
96.0 h 5.9 mg/l
Test Type
LC50 Fish
Species
Pimephales promelas (Fathead minnow)
Time: **Value:**
96.0 h 15 - 32 mg/l
Test Type
LC50 Fish
Species
Lepomis macrochirus (Bluegill)
Time: **Value:**
96.0 h 230 mg/l

Elimination

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
Contact a licensed professional waste disposal service to dispose of this material.
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

DOT
Proper Shipping Name: Benzene
UN#: 1114
Class: 3
Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA
Proper Shipping Name: Benzene
IATA UN Number: 1114
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU Directives Classification
Symbol of Danger: F T
Indication of Danger
Highly Flammable. Toxic.
Risk Statements **R:** 45 11 48/23/24/25
May cause cancer. Highly flammable. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
Safety Statements **S:** 53 45
Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. 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
Flammable (USA) Highly Flammable (EU). Toxic.
Risk Statements
May cause cancer. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if

swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes.

Safety Statements

Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements

Danger: contains benzene, cancer hazard. Calif. Prop. 65 reproductive hazard. Target organ(s): Blood. Bone marrow.

United States Regulatory Information

SARA Listed: Yes

Deminimis: 0.1 %

Notes: This product is subject to SARA section 313 reporting requirements.

OSHA Remarks

OSHA-regulated carcinogen. See CFR title 29 part 1910.1028

TSCA Inventory Item: Yes

United States - State Regulatory Information

California Prop - 65

This product is or contains chemical(s) known to the state of California to cause cancer. 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 male reproductive toxicity.

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: Yes

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.