



Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name Pyrimethamine
Product Number P7771
Brand Sigma Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
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Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
PYRAMETHAMINE	58-14-0	No	200-364-2	

Formula C12H13ClN4
Synonyms BW 50-63, Chloridin, Chloridine, Chloridyn, 5-(4'-Chlorophenyl)-2,4-diamino-6-ethylpyrimidine, 5-(4'-Chlorophenyl)-6-ethyl-2,4-pyrimidinediamine, Darachlor, Darapram, Daraprim, Daraprime, 2,4-Diamino-5-p-chlorophenyl-6-ethylpyrimidine, 2,4-Diamino-5-(4-chlorophenyl)-6-ethylpyrimidine, Diaminopyritamin, Erbaprelina, Khloridin, Malacid, Malocid, Malocide, NCI-C01683, NSC 3061, Pirimecdan, Pirimetamina (Spanish), Pyrimethamine, 4753 R.P., Tindurin, WR 2978

Section 3 - Hazards Identification

Emergency Overview
Toxic (USA) Harmful (EU).
Harmful if swallowed.
Possible sensitizer. Target organ(s): Blood, Bone marrow.

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

NFPA Rating
Health: 2 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.

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

Autoignition Temp: N/A

Extinguishing Media

Suitable

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.

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.

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

Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep tightly closed.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment

Respiratory

Government approved respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

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General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance

Physical State

Solid

Molecular Weight: 248,7 AMU

pH	N/A
BP/BP Range	N/A
MP/MP Range	N/A
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	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
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A

Flammability	N/A
Autoignition Temp	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable

Stable.

Conditions of Instability

Protect from light.

Materials to Avoid

Strong oxidizing agents.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen chloride gas.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

May cause skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

May cause eye irritation.

Inhalation

May be harmful if inhaled.

Ingestion

Harmful if swallowed.

Sensitization

Sensitization

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Target Organ(s) or System(s)

Blood, Bone marrow.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: UV8140000

Toxicity Data

Oral - Rat: 440 mg/kg (LD50)

Remarks: Behavioral:Tremor.

Behavioral:Convulsions or effect on seizure threshold.

Behavioral:Ataxia.

Intraperitoneal - Rat: 70 MG/KG (LD50)

Oral - Mouse: 92 mg/kg (LD50)

Intraperitoneal - Mouse: 74 MG/KG (LD50)

Chronic Exposure - Carcinogen

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC Carcinogen List

Rating

Group 3

NTP Carcinogen List

Rating

No evidence.

Inadequate studies

Species

Rat

Mouse

Route

Feed

Feed

Chronic Exposure - Teratogen

Species

Dose

Route of Application

Exposure Time

Result: Animal experiments have shown that multiple malformations can be induced using pyrimethamine while human studies have found pyrimethamine does not increase the risk of abnormalities during pregnancy.

Rat 5 MG/KG

Oral

(9D PREG)

Result: Effects on Embryo or Fetus: Fetal death.

Rat 5 MG/KG

Oral

(9D PREG)

Result: Specific Developmental Abnormalities: Central nervous system.
Specific Developmental Abnormalities: Eye, ear.

	Specific Developmental Abnormalities: Body wall.		
Rat	25 MG/KG	Oral	(10D PREG)
	Result: Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord).		
Rat	45 MG/KG	Oral	(7-15D PREG)
	Result: Effects on Embryo or Fetus: Other effects to embryo.		
	Specific Developmental Abnormalities: Other developmental abnormalities.		
Rat	25 MG/KG	Oral	(10D PREG)
	Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue).		
	Specific Developmental Abnormalities: Musculoskeletal system.		
Rat	75 MG/KG	Intraperitoneal	(12-14D PREG)
	Result: Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material).		
Rat	25 MG/KG	Intraperitoneal	(9D PREG)
	Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).		
	Effects on Embryo or Fetus: Fetal death.		
	Specific Developmental Abnormalities: Eye, ear.		
Rat	25 MG/KG	Intraperitoneal	(9D PREG)
	Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue).		
Rat	30 MG/KG	Parenteral	(10D PREG)
	Result: Specific Developmental Abnormalities: Central nervous system.		
	Specific Developmental Abnormalities: Craniofacial (including nose and tongue).		
	Specific Developmental Abnormalities: Musculoskeletal system.		
Rat	30 MG/KG	Parenteral	(10D PREG)
	Result: Effects on Embryo or Fetus: Fetal death.		
Rat	125 MG/KG	Unreported	(8-12D PREG)
	Result: Effects on Embryo or Fetus: Fetal death.		
	Specific Developmental Abnormalities: Other developmental abnormalities.		
Rat	2500 UG/KG	Unreported	(1D PREG)
	Result: Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material).		
Rat	35 MG/KG	Unreported	(13D PREG)
	Result: Specific Developmental Abnormalities: Central nervous system.		
	Specific Developmental Abnormalities: Craniofacial (including nose and tongue).		
	Specific Developmental Abnormalities: Musculoskeletal system.		
Mouse	350 MG/KG	Oral	(9-15D PREG)
	Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).		
	Effects on Embryo or Fetus: Fetal death.		
	Specific Developmental Abnormalities: Other developmental abnormalities.		
Pig	90 MG/KG	Oral	(11-35D PREG)
	Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue).		
	Specific Developmental Abnormalities: Musculoskeletal system.		
Pig	90 MG/KG	Oral	(11-35D PREG)
	Result: Specific Developmental Abnormalities: Gastrointestinal system.		
Pig	43200 UG/KG	Oral	(11-22D PREG)
	Result: Specific Developmental Abnormalities: Musculoskeletal system.		

Chronic Exposure - Mutagen

Species	Dose		Cell Type	Mutation test
Human	814 NMOL/L		lymphocyte	Other mutation test systems
Human	800 MG/L		lymphocyte	Cytogenetic analysis
Rat	2 MG/KG	Oral		Micronucleus test
Rat	120 MG/KG	Oral		DNA damage
Rat	50 UG/KG	Oral		DNA inhibition
Rat	50 UG/KG	Oral		Other mutation test systems
Rat	2 MG/KG	Oral		Other mutation test systems
Rat	5 MG/KG	Oral		Cytogenetic analysis
Mouse	50 MG/KG	Oral		DNA damage
Mouse	100 MG/KG	Intraperitoneal		Cytogenetic analysis
Mouse	30 MG/KG	Intraperitoneal		SLN
Hamster	1 MG/L		lung	Micronucleus test
Hamster	10 MG/L		Embryo	Morphological transformation
Hamster	400 UG/L		lung	Other mutation test systems
Hamster	400 UG/L		lung	Cytogenetic analysis
Hamster	2500 UG/L		lung	SLN

Chronic Exposure - Reproductive Hazard

Species	Dose	Route of Application	Exposure Time
Rat	500 UG/KG	Oral	(1D PREG)
	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 Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).		
Rat	50 MG/KG	Intraperitoneal	(13D PREG)
	Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).		
	Specific Developmental Abnormalities: Other developmental abnormalities.		
Rat	1 MG/KG	Intraperitoneal	(9D PREG)
	Result: Effects on Newborn: Behavioral.		
Rat	30 MG/KG	Unreported	(13D PREG)
	Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).		
	Specific Developmental Abnormalities: Other developmental abnormalities.		
Mouse	21 MG/KG	Oral	(7D PRE)
	Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).		
Mouse	10 GM/KG	Oral	(50D MALE)
	Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).		
Pig	180 MG/KG	Oral	(11-35D PREG)
	Result: Effects on Fertility: Other measures of fertility		
Pig	21600 UG/KG	Oral	(11-18D PREG)
	Result: Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).		

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
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: None

Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xn

Indication of Danger

Harmful.

Risk Statements

R: 22

Harmful if swallowed.

US Classification and Label Text

Indication of Danger

Toxic (USA) Harmful (EU).

Risk Statements

Harmful if swallowed.

Safety Statements

Wear suitable protective clothing.

US Statements

Possible sensitizer. Target organ(s): Blood, Bone marrow.

United States Regulatory Information

SARA Listed: No

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. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.