SIGMA-ALDRICH

Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name 1,8-Dinitropyrene, 98%
Product Number 284319
Brand Aldrich Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832 **Emergency Phone:** 314-776-6555
Fax: 800-325-5052

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
1,8-DINITROPYRENE	42397-65-9	No		

Formula C16H8N2O4
Synonyms 1,8-Dinitropyrene

Section 3 - Hazards Identification

Emergency Overview
Harmful.
Limited evidence of a carcinogenic effect.
Calif. Prop. 65 carcinogen.

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

NFPA Rating
Health: 0 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 breathing becomes difficult, call a physician.

Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.

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
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.

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
Do not breathe dust. Do not get in eyes, on skin, on clothing.Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed.

Section 8 - Exposure Controls / PPE

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

Personal Protective Equipment
Respiratory
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).Where risk assessment shows air-purifying respirators are appropriate use a full|face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Hand
Compatible chemical-resistant gloves.
Eye
Chemical safety goggles.

General Hygiene Measures
Wash contaminated clothing before reuse.Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance
Physical State
Solid

Molecular Weight	292.25 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.
Materials to Avoid
Strong oxidizing agents, Strong bases

Hazardous Decomposition Products
Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide, Nitrogen oxides

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
Material may be irritating to mucous membranes and upper respiratory tractMay be harmful if inhaled.
Ingestion
May be harmful if swallowed.

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

RTECS Number: UR2456000

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

Rat - Oral: 35071 UG/KG 4W I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.Skin and Appendages: Other: Tumors.

Rat - Oral: 35071 UG/KG 4W I
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.Skin and Appendages: Other: Tumors.

Rat - Intraperitoneal: 23 MG/KG 4W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Gastrointestinal:Tumors.Skin and Appendages: Other: Tumors.

Rat - Intraperitoneal: 23 MG/KG 4W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Gastrointestinal:Tumors.Skin and Appendages: Other: Tumors.

Rat - Subcutaneous: 16 MG/KG 10W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Tumorigenic:Tumors at site or application.

Rat - Subcutaneous: 16 MG/KG 10W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Tumorigenic:Tumors at site or application.

Mouse - Subcutaneous: 40 MG/KG 20W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Tumorigenic:Tumors at site or application.

Mouse - Subcutaneous: 40 MG/KG 20W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Tumorigenic:Tumors at site or application.

Rat - Subcutaneous: 160 UG/KG 10W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Tumorigenic:Tumors at site or application.

Rat - Subcutaneous: 160 UG/KG 10W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Tumorigenic:Tumors at site or application.

Mouse - Subcutaneous: 40 MG/KG 20W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Lungs, Thorax, or Respiration:Tumors.Tumorigenic:Tumors at site or application.

Mouse - Subcutaneous: 40 MG/KG 20W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Lungs, Thorax, or Respiration:Tumors.Tumorigenic:Tumors at site or application.

Rat - Intraperitoneal: 35071 UG/KG 4W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Skin and Appendages: Other: Tumors.

Rat - Intraperitoneal: 35071 UG/KG 4W I
Result: Tumorigenic:Carcinogenic by RTECS criteria.Skin and Appendages: Other: Tumors.

IARC Carcinogen List
Rating
Group 2B

NTP Carcinogen List
Rating
Anticipated to be a carcinogen.
Anticipated to be a carcinogen.

Chronic Exposure- Mutagen

Species	*Dose*	*Cell Type*	*Mutation test*
Result: Laboratory experiments have shown mutagenic effects.			
Human	500 UMOL/L	mammary gland	DNA
Human	500 UMOL/L	mammary gland	DNA
Human	1 MG/L	liver	Unscheduled DNA synthesis
Human	1 MG/L	liver	Unscheduled DNA synthesis
Human	100 UG/L	lymphocyte	Mutation in mammalian somatic cells.
Human	100 UG/L	lymphocyte	Mutation in mammalian somatic cells.
Rat	20 UMOL/L	liver	DNA damage
Rat	20 UMOL/L	liver	DNA damage
Rat	100 UG/L	liver	Unscheduled DNA synthesis
Rat	100 UG/L	liver	Unscheduled DNA synthesis
Rat	1250 MG/L	liver	Cytogenetic analysis
Rat	1250 MG/L	liver	Cytogenetic analysis
Mouse	1 MG/L	liver	Unscheduled DNA synthesis
Mouse	1 MG/L	liver	Unscheduled DNA synthesis
Mouse	500 UG/L	lymphocyte	Mutation in mammalian somatic cells.
Mouse	500 UG/L	lymphocyte	Mutation in mammalian somatic cells.
Mouse	100 UG/KG	S. typhimurium	Host-mediated assay
Mouse	100 UG/KG	S. typhimurium	Host-mediated assay
Hamster	2 MG/L (+S9)	ovary	Mutation in microorganisms
Hamster	2 MG/L (+S9)	ovary	Mutation in microorganisms
Hamster	1700 NMOL/L	Embryo	Morphological transformation.
Hamster	1700 NMOL/L	Embryo	Morphological transformation.
Hamster	15 UMOL/L	lung	DNA damage
Hamster	15 UMOL/L	lung	DNA damage
Hamster	50 UG/L	ovary	Cytogenetic analysis
Hamster	50 UG/L	ovary	Cytogenetic analysis
Hamster	25 UG/L	lung	Cytogenetic analysis
Hamster	25 UG/L	lung	Cytogenetic analysis
Hamster	1 UMOL/L	ovary	Sister chromatid exchange
Hamster	1 UMOL/L	ovary	Sister chromatid exchange
Hamster	100 UG/L	lung	Mutation in mammalian somatic cells.
Hamster	100 UG/L	lung	Mutation in mammalian somatic cells.
Hamster	50 UG/L	ovary	Mutation in mammalian somatic cells.
Hamster	50 UG/L	ovary	Mutation in mammalian somatic cells.
Rabbit	25 UMOL/L	Other cell types	DNA
Rabbit	25 UMOL/L	Other cell types	DNA
Rabbit	1250 NG/L	lung	Unscheduled DNA synthesis
Rabbit	1250 NG/L	lung	Unscheduled DNA synthesis

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.
Observe all federal, state, and local environmentalregulations.
(DN)Requires special label: "Contains a substance which is regulated by Dannish work environmental law due to the risk of carcinogenic properties."

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:** 40
Limited evidence of a carcinogenic effect.
Safety Statements **S:** 22 26 36/37
Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.

US Classification and Label Text
Indication of Danger
Harmful.
Risk Statements
Limited evidence of a carcinogenic effect.
Safety Statements
Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.
US Statements
Calif. Prop. 65 carcinogen.

United States Regulatory Information
SARA Listed: No

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 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.