

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 2,4-Dinitrophenylhydrazine

Product Number : D199303  
Brand : Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Flammable solid, Target Organ Effect, Harmful by ingestion.

##### Target Organs

Blood

##### GHS Classification

Flammable solids (Category 1)  
Acute toxicity, Oral (Category 4)  
Eye irritation (Category 2B)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H228 Flammable solid.  
H302 Harmful if swallowed.  
H320 Causes eye irritation.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### HMIS Classification

Health hazard: 1  
Chronic Health Hazard: \*  
Flammability: 3  
Physical hazards: 3

#### NFPA Rating

**Health hazard:** 1  
**Fire:** 3  
**Reactivity Hazard:** 3

#### Potential Health Effects

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** Harmful if absorbed through skin. May cause skin irritation.  
**Eyes** May cause eye irritation.  
**Ingestion** Harmful if swallowed.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula :  $C_6H_6N_4O_4$   
Molecular Weight : 198.14 g/mol

Component	Classification	Concentration
<b>2,4-dinitrophenylhydrazine</b>		
CAS-No. 119-26-6	Flam. Sol. 1; Acute Tox. 4; H228, H302	60 - 100 %
EC-No. 204-309-3		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

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### 4. FIRST AID MEASURES

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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### 5. FIREFIGHTING MEASURES

#### Conditions of flammability

Not flammable or combustible.

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

#### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

#### Further information

Use water spray to cool unopened containers.

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### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

#### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### **Methods and materials for containment and cleaning up**

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

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## **7. HANDLING AND STORAGE**

### **Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

### **Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

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## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.

### **Personal protective equipment**

#### **Respiratory protection**

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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### **Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### **Immersion protection**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (Aldrich Z677272, Size M)

#### **Splash protection**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Eye protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin and body protection**

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	powder
Colour	dark orange, dark red

### Safety data

pH	no data available
Melting point/freezing point	Melting point/range: 197 - 200 °C (387 - 392 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

no data available

### Conditions to avoid

May be shock-sensitive if dry.

Heat, flames and sparks. Extremes of temperature and direct sunlight.

### Materials to avoid

Strong oxidizing agents Strong oxidizing agents

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

Other decomposition products - no data available

Contains the following stabiliser(s):

Water (>33 %)

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

no data available

no data available (2,4-dinitrophenylhydrazine)

**Inhalation LC50**

no data available

no data available (2,4-dinitrophenylhydrazine)

**Dermal LD50**

no data available

no data available (2,4-dinitrophenylhydrazine)

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

no data available (2,4-dinitrophenylhydrazine)

**Serious eye damage/eye irritation**

Eyes: no data available

Eyes - rabbit - Mild eye irritation - 24 h (2,4-dinitrophenylhydrazine)

**Respiratory or skin sensitization**

no data available

no data available (2,4-dinitrophenylhydrazine)

**Germ cell mutagenicity**

no data available

no data available (2,4-dinitrophenylhydrazine)

(2,4-dinitrophenylhydrazine)

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

no data available (2,4-dinitrophenylhydrazine)

(2,4-dinitrophenylhydrazine)

**Teratogenicity**

no data available

(2,4-dinitrophenylhydrazine)

no data available (2,4-dinitrophenylhydrazine)

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	Harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

**Synergistic effects**

no data available

**Additional Information**

RTECS: Not available

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**12. ECOLOGICAL INFORMATION****Toxicity**

no data available

no data available

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

no data available

no data available

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**13. DISPOSAL CONSIDERATIONS****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 1325 Class: 4.1

Packing group: II

Proper shipping name: Flammable solids, organic, n.o.s. (2,4-dinitrophenylhydrazine)

Reportable Quantity (RQ):

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN number: 3380 Class: 4.1

Packing group: I

EMS-No: F-B, S-J

Proper shipping name: DESENSITIZED EXPLOSIVE, SOLID, N.O.S. (2,4-dinitrophenylhydrazine)

Marine pollutant: No

**IATA**

UN number: 3380 Class: 4.1

Proper shipping name: Desensitized explosive, solid, n.o.s. (2,4-dinitrophenylhydrazine)

IATA Passenger: Not permitted for transport

IATA Cargo: Not permitted for transport

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## 15. REGULATORY INFORMATION

### OSHA Hazards

Flammable solid, Target Organ Effect, Harmful by ingestion.

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Water	7732-18-5	
2,4-dinitrophenylhydrazine	119-26-6	

### New Jersey Right To Know Components

	CAS-No.	Revision Date
Water	7732-18-5	
2,4-dinitrophenylhydrazine	119-26-6	

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Text of H-code(s) and R-phrase(s) mentioned in Section 3

Acute Tox.	Acute toxicity
Flam. Sol.	Flammable solids
H228	Flammable solid.
H302	Harmful if swallowed.

### Further information

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