

## SAFETY DATA SHEET

Preparation Date: 03/26/2015

Revision Date: 04/23/2018

Revision Number: G2

### 1. IDENTIFICATION

**Product identifier**

**Product code:** DI149  
**Product Name:** 2,4-DINITROPHENYLHYDRAZINE

**Other means of identification**

**Synonyms:** 2,4-Dinitrophenylhydrazine, wetted with minimum of 30% water  
 1-Hydrazine-2,4-dinitrobenzene  
 2,4-DNPH  
**CAS #:** 119-26-6  
**RTECS #** MV3325000  
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>  
**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Ibad Tirmiz (East Coast)

### 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 2B
Flammable solids	Category 1

**Label elements**

**Danger**

**Hazard statements**  
 Harmful if swallowed  
 Causes eye irritation  
 Flammable solids

**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

May explode if allowed to dry

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/.../equipment  
Wear protective gloves  
Wear eye/face protection

**Precautionary Statements - Response**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS-No.	Weight %
2,4-Dinitrophenylhydrazine	119-26-6	100

**4. FIRST AID MEASURES****First aid measures**

**General Advice:** National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops. If skin irritation persists, call a physician.

**Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention. Call a physician or Poison Control Centre immediately.

**Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Immediate medical attention is required.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

### **Most important symptoms and effects, both acute and delayed**

**Symptoms** Causes eye irritation  
May cause methemoglobinemia and cyanosis

### **Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically.

### **Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

## **5. FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

**Suitable Extinguishing Media:** Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water spray mist or foam.

**Unsuitable Extinguishing Media:** No information available.

### **Specific hazards arising from the chemical**

**Hazardous Combustion Products:** Carbon Monoxide, Carbon Dioxide. Nitrogen Oxides.

**Specific hazards:** Flammable. Explosive when dry.

### **Special Protective Actions for Firefighters**

**Specific Methods:** Flood fire with large quantities of water. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Continue to cool containers until well after fire is out.

**Special Protective Equipment for Firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions, protective equipment and emergency procedures**

**Personal Precautions:** Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Use personal protective equipment. Avoid dust formation. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded.

**Environmental precautions** Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

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

**Methods for containment** Stop leak if you can do it without risk.

**Methods for cleaning up** Never allow spilled material to dry. Dampen with water without stirring. Never attempt to sweep up dry material. Use a spill response pad or pillow that is dampened with water to absorb the spilled material.

## **7. HANDLING AND STORAGE**

### Precautions for safe handling

#### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Ensure adequate ventilation. Remove all sources of ignition. Keep away from incompatible materials. All equipment used when handling the product must be grounded.

#### **Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors/dust. Do not ingest. Avoid dust formation. Handle in accordance with good industrial hygiene and safety practice. Avoid shock and friction. Avoid letting the product become dry. Re-hydrate as needed. The water content should be at least 30% water by volume.

### Conditions for safe storage, including any incompatibilities

#### **Technical Measures/Storage Conditions:**

Keep container tightly closed. Store at room temperature in the original container. Store away from incompatible materials. Store in a segregated and approved area.

#### **Incompatible Materials:**

Oxidizing agents

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **National occupational exposure limits**

##### **United States**

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
2,4-Dinitrophenylhydrazine	119-26-6	None	None	None	None

##### **Canada**

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
2,4-Dinitrophenylhydrazine	119-26-6	None	None	None	None

##### **Australia and Mexico**

Components	CAS-No.	Australia	Mexico
2,4-Dinitrophenylhydrazine	119-26-6	None	None

### Appropriate engineering controls

#### **Engineering measures to reduce exposure:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

### Individual protection measures, such as personal protective equipment

#### **Personal Protective Equipment**

##### **Eye protection:**

Safety glasses with side-shields or Goggles

**Skin and body protection:** Long sleeved clothing  
Chemical resistant apron  
Gloves

**Respiratory protection:** Effective dust mask. or. Wear respirator with dust filter. Be sure to use an approved/certified respirator or equivalent.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical state:</b> Solid	<b>Appearance:</b> Powder.	<b>Color:</b> Dark orange. Red.
<b>Odor:</b> No information available.	<b>Taste</b> No information available.	<b>Formula:</b> C6H6N4O4
<b>Molecular/Formula weight:</b> 198.14 g/mol	<b>Flammability:</b> No information available	<b>Flashpoint (°C/°F):</b> No information available.
<b>Flash Point Tested according to:</b> Not available	<b>Autoignition Temperature (°C/°F):</b> No information available	<b>Lower Explosion Limit (%):</b> No information available
<b>Upper Explosion Limit (%):</b> No information available	<b>Melting point/range(°C/°F):</b> 197-200°C/ 387-392°F	<b>Decomposition temperature(°C/°F):</b> No information available
<b>Boiling point/range(°C/°F):</b> No information available	<b>Bulk density:</b> No information available	<b>Density (g/cm3):</b> No information available
<b>Specific gravity:</b> No information available	<b>pH:</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> No information available
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> No information available	<b>VOC content (g/L):</b> No information available
<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> No information available	<b>Viscosity:</b> No information available
<b>Miscibility:</b> No information available	<b>Solubility:</b> No information available	

**10. STABILITY AND REACTIVITY**

**Reactivity**  
Reactive with oxidizing agents  
Explosive when dry

**Chemical stability**

**Stability:** Stable under recommended storage conditions. Keep 2,4-Dinitrophenylhydrazine wet with water at a minimum of 30%. Do not allow water to evaporate from product. Dry 2,4-Dinitrophenylhydrazine is explosive.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Exposure to air. When dry, the substance is very sensitive to shock and heat (explosion hazard).

**Incompatible Materials:** Oxidizing agents  
**Hazardous decomposition products:** Carbon oxides. Nitrogen oxides (NOx).

**Other Information**  
**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Principal Routes of Exposure:**  
Ingestion. Eyes. Skin.

### Acute Toxicity

#### Component Information

2,4-Dinitrophenylhydrazine	
CAS-No.	119-26-6

**LD50/oral/rat** = 654 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rabbit** = No information available  
**LD50/dermal/rat** = No information available  
**LC50/inhalation/rat** = No information available  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50 information** = 450 mg/kg Intraperitoneal LD50 Mouse; >500 mg/kg LD (Lethal Dose) oral Rat

#### Product Information

**LD50/oral/rat** =  
**VALUE- Acute Tox Oral** = 654 mg/kg

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = No information available

**LD50/dermal/rabbit**  
**VALUE-Acute Tox Dermal** = No information available

**LD50/dermal/rat**  
**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**  
**VALUE-Vapor** = No information available  
**VALUE-Gas** = No information available  
**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse**  
**VALUE-Vapor** = No information available  
**VALUE - Gas** = No information available  
**VALUE - Dust/Mist** = No information available

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## Symptoms

<b>Skin Contact:</b>	May cause skin irritation.
<b>Eye Contact:</b>	Causes eye irritation.
<b>Inhalation</b>	May cause respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed. May cause cyanosis.
<b>Aspiration hazard</b>	No information available.

## Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Chronic Toxicity** Prolonged or repeated inhalation or ingestion may affect the ability of the blood to carry oxygen (formation of methemoglobin), resulting in Methemoglobinemia and cyanosis ( a bluish discoloration of the lips, tongue, and skin).

**Sensitization:** No information available.

**Mutagenic Effects:** Mutations in microorganisms  
Experiments with bacteria and/or yeast have shown mutagenic effects

**Carcinogenic effects:** Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
2,4-Dinitrophenylhydrazine	119-26-6	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available  
**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

## **Specific Target Organ Toxicity**

**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.  
**Target Organs:** No information available.

## 12. ECOLOGICAL INFORMATION

### **Ecotoxicity**

**Ecotoxicity effects:** No data available.

**Persistence and degradability:** No information available

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**Bioaccumulative potential:** No information available.

**Mobility:** No information available.

### 13. DISPOSAL CONSIDERATIONS

#### Disposal Methods

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
2,4-Dinitrophenylhydrazine	119-26-6	None	None	None	None

### 14. TRANSPORT INFORMATION

#### DOT

**UN-No:** UN1325  
**Proper Shipping Name:** Flammable solids, organic, n.o.s. (2,4-Dinitrophenylhydrazine, wetted with no less than 30% water)  
**Hazard Class:** 4.1  
**Subsidiary Class:** No information available  
**Packing group:** II  
**Emergency Response Guide Number:** 133  
**Marine Pollutant:** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions:** A1, IB8, IP2, IP4, T3, TP33  
**Symbol(s):** [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.  
**Description:** UN1325, Flammable solids, organic, n.o.s., 4.1, II

#### TDG (Canada)

**UN-No:** UN1325  
**Proper Shipping Name:** Flammable solid, organic, n.o.s. (2,4-dinitrophenylhydrazine, wetted with no less than 30% water)  
**Hazard Class:** 4.1  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Marine Pollutant:** No Information available  
**Description:** UN1325, Flammable solid, organic, n.o.s., 4.1, II

#### ADR

**UN-No:** UN3380  
**Proper Shipping Name:** Desensitized explosive, solid, n.o.s.  
**Hazard Class:** 4.1  
**Packing Group:** I  
**Subsidiary Risk:** No information available  
**Special Provisions:** 274, 311  
**Description:** UN3380, Desensitized explosive, solid, n.o.s., 4.1, I

**IMO / IMDG**

**UN-No:** UN3380  
**Proper Shipping Name:** Desensitized explosive, solid, n.o.s.  
**Hazard Class:** 4.1  
**Subsidiary Risk:** No information available  
**Packing Group:** I  
**Marine Pollutant:** No information available  
**EMS:** F-B  
**Special Provisions:** 274, 311  
**Description:** UN3380, Desensitized explosive, solid, n.o.s. (2,4-DINITROPHENYLHYDRAZINE), 4.1, I

**RID**

**UN-No:** UN3380  
**Proper Shipping Name:** Desensitized explosive, solid, n.o.s.  
**Hazard Class:** 4.1  
**Subsidiary Risk:** No information available  
**Packing Group:** I  
**Special Provisions:** 274, 311  
**Description:** UN3380, Desensitized explosive, solid, n.o.s., 4.1, I

**ICAO**

**UN-No:** UN3380  
**Proper Shipping Name:** Desensitized explosive, solid, n.o.s.  
**Hazard Class:** 4.1  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** Forbidden  
 Forbidden for transport

**IATA**

**UN-No:** UN3380  
**Proper Shipping Name:** Desensitized explosive, solid, n.o.s.  
**Hazard Class:** 4.1  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**ERG Code:** No information available  
**Special Provisions:** No information available  
**Description:** Forbidden  
 Passenger Aircraft: Not permitted for transport  
 Cargo Aircraft: Not permitted for transport

**15. REGULATORY INFORMATION****International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
2,4-Dinitrophenylhydrazine	119-26-6	Present	Present KE-11951	Present	Present (3)-478	Present	Present	Present 204-309-3

**U.S. Regulations****California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.****Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

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**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
2,4-Dinitrophenylhydrazine	119-26-6	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
2,4-Dinitrophenylhydrazine	119-26-6	None	None	None	None	None

**U.S. TSCA**

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
2,4-Dinitrophenylhydrazine	119-26-6	Not Applicable	Not Applicable

**Canada****WHMIS 2015 - GHS Classifications**

WHMIS 2015 Hazard Classification Information:

Component  
2,4-Dinitrophenylhydrazine  
119-26-6 ( 100 )

WHMIS 2015 Hazard Classification  
Flammable solids - Undefined: Flammable solids - undefined category; Self-reactive substances and mixtures - Undefined: Self reactive substance - undefined category; Combustible Dust - Category 1: May form combustible dust concentrations in air (if 5% or more by weight of its composition has a particle size <500 µm); Physical Hazards Not Otherwise Classified - Category 1: May cause an explosion under conditions of shock and/or friction

**Canada Hazardous Products Regulation** This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

**WHMIS 1988 Hazard Class**

The classification of this product has not been validated yet

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
2,4-Dinitrophenylhydrazine	1 %

**Inventory**

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
2,4-Dinitrophenylhydrazine	119-26-6	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
2,4-Dinitrophenylhydrazine	119-26-6	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject

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		to Mandatory Reporting
2,4-Dinitrophenylhydrazine	119-26-6	Not listed

## EU Classification

### EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
2,4-Dinitrophenylhydrazine	119-26-6	No information

### EU - CLP (1272/2008)

#### R-phrase(s)

R 1 - Explosive when dry.  
R 5 - Heating may cause an explosion.  
R10 - Flammable.  
R22 - Harmful if swallowed.

#### S -phrase(s)

S16 - Keep away from sources of ignition - No smoking.  
S46 - If swallowed, seek medical advice immediately and show this container or label.  
S48 - Keep wet with .??.  
S36/37 - Wear suitable protective clothing and gloves.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
2,4-Dinitrophenylhydrazine	119-26-6		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

#### Indication of danger:

Flammable

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## 16. OTHER INFORMATION

**Preparation Date:** 03/26/2015  
**Revision Date:** 04/23/2018  
**Prepared by:** Sonia Owen

#### Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal

protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**