SAFETY DATA SHEET

Preparation Date: 03/26/2015
Revision date 05/15/2019
Revision Number: G3

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: Tom Tyner (USA - West Coast)
Contact Person: Ibad Tirmiz (USA - East Coast)

2. HAZARDS IDENTIFICATION

Classification

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

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

<table>
<thead>
<tr>
<th>Acute toxicity - Oral</th>
<th>Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2B</td>
</tr>
<tr>
<td>Flammable solids</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Label elements

Danger

Hazard statements
Harmful if swallowed
Causes eye irritation
Flammable solid

Product code: DI149
Product name: 2,4-DINITROPHENYLHYDRAZINE
Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

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 container and receiving equipment
Use explosion-proof equipment
Wear protective gloves
Wear eye/face protection

Precautionary Statements - Response
In case of fire: Use CO2, 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 attention.
IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell
Rinse mouth

Precautionary Statements - Disposal
Dispose of contents and container to an approved waste disposal plant in accordance with local, regional, national and international regulations as applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight-%</th>
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<tbody>
<tr>
<td>2,4-Dinitrophenylhydrazine</td>
<td>119-26-6</td>
<td>100</td>
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</table>

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
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 (CO2). 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 (NOx).

Specific hazards Flammable. Explosive when dry.

Special Protective Actions for Firefighters

Specific Methods: No information available

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 absorbed the spilled material.

7. HANDLING AND STORAGE

Product code: DI149
Product name: 2,4-DINITROPHENYLHYDRAZINE
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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WEEL</th>
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Canada

<table>
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<th>Component</th>
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<th>Canada - Alberta</th>
<th>Canada - British Columbia</th>
<th>Canada - Ontario</th>
<th>Canada - Quebec</th>
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Australia and Mexico

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<th>Mexico</th>
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<td>2,4-Dinitrophenylhydrazine</td>
<td>119-26-6</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<td><strong>Physical state:</strong></td>
<td>Solid</td>
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<tr>
<td><strong>Appearance:</strong></td>
<td>Powder</td>
</tr>
<tr>
<td><strong>Color:</strong></td>
<td>Dark orange. Red.</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Taste:</strong></td>
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<td><strong>Formula</strong></td>
<td>C6H6N4O4</td>
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<td><strong>Molecular/Formula weight (g/mol):</strong></td>
<td>198.14 g/mol</td>
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<td><strong>Flashpoint (°C/°F):</strong></td>
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<td><strong>Flash Point Tested according to:</strong></td>
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<td><strong>Upper Explosion Limit (%):</strong></td>
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<td><strong>Partition coefficient</strong></td>
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<td><strong>Odor threshold (ppm):</strong></td>
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<tr>
<td><strong>Miscibility:</strong></td>
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<tr>
<td><strong>Solubility:</strong></td>
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</tbody>
</table>

### 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-Dintrophenylhydrazine 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).

**Product code:** DI149  
**Product name:** 2,4-DINITROPHENYLHYDRAZINE  
**Page** 5 / 12
**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

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**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

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

**Acute Toxicity**

**Component Information**

2,4-Dinitrophenylhydrazine

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>LD50/oral/rat</th>
<th>LD50/oral/mouse</th>
<th>LD50/dermal/rabbit</th>
<th>LD50/dermal/rat</th>
<th>LC50/inhalation/rat</th>
<th>LC50/inhalation/mouse</th>
<th>Other LD50 or LC50 information</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>119-26-6</td>
<td>654 mg/kg</td>
<td>No information available</td>
<td>No information available</td>
<td>No information available</td>
<td>No information available</td>
<td>No information available</td>
<td>450 mg/kg Intraperitoneal LD50 Mouse; &gt;500 mg/kg LD (Lethal Dose) oral Rat</td>
</tr>
</tbody>
</table>

**Product Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value - Acute Toxicity</th>
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</thead>
<tbody>
<tr>
<td>LD50/oral/rat</td>
<td>654 mg/kg</td>
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<tr>
<td>LD50/oral/mouse</td>
<td>No information available</td>
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<tr>
<td>LD50/dermal/rabbit</td>
<td>No information available</td>
</tr>
<tr>
<td>LD50/dermal/rat</td>
<td>No information available</td>
</tr>
<tr>
<td>LC50/inhalation/rat</td>
<td>No information available</td>
</tr>
<tr>
<td>LC50/inhalation/mouse</td>
<td>No information available</td>
</tr>
</tbody>
</table>

**Product code:** DI149  
**Product name:** 2,4-DINITROPHENYLHYDRAZINE
Symptoms

Skin Contact: May cause skin irritation.

Eye Contact: Causes eye irritation.

Inhalation: May cause respiratory tract irritation.

Ingestion: Harmful if swallowed. May cause cyanosis.

Aspiration hazard: 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.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
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<tbody>
<tr>
<td>2,4-Dinitrophenylhydrazine</td>
<td>119-26-6</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

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
Bioaccumulative potential: No information available.
Mobility in soil No information available
Other adverse effects 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

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dinitrophenylhydrazine</td>
<td>119-26-6</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

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
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 Number UN3380
Proper Shipping Name: Desensitized explosive, solid, n.o.s.
Transport hazard class(es) 4.1
Packing group I

Product code: DI149 Product name: 2,4-DINITROPHENYLHYDRAZINE
Subsidiary Risk: No information available
Special Provisions 274, 311
Description: UN3380, Desensitized explosive, solid, n.o.s., 4.1, I

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 Number UN3380
Proper Shipping Name: Desensitized explosive, solid, n.o.s.
Transport hazard class(es) 4.1
Subsidiary Risk: No information available
Packing Group: I
Special Provisions 274, 311
Description: UN3380, Desensitized explosive, solid, n.o.s.

ICAO (air)
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 Number UN3380
Proper Shipping Name: Desensitized explosive, solid, n.o.s.
Transport hazard class(es) 4.1
Subsidiary Risk: No information available
Packing Group: No information available
Precautionary Statements -
Response
Special Provisions No information available
Description: Forbidden
Passenger Aircraft: Not permitted for transport
Cargo Aircraft: Not permitted for transport

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>China IECSC</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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<tbody>
<tr>
<td>2,4-Dinitrophenyldihydrazine</td>
<td>119-26-6</td>
<td>Present</td>
<td>Present KE-11951</td>
<td>Present</td>
<td>Present (3)-478</td>
<td>Present</td>
<td>Present</td>
<td>Present 204-309-3</td>
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</tbody>
</table>

U.S. Regulations

Product code: DI149
Product name: 2,4-DINITROPHENYLHYDRAZINE

**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)

**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)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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</table>

**CERCLA/SARA**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
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**U.S. TSCA**

<table>
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<tr>
<th>Component</th>
<th>CAS No</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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<tr>
<td>2,4-Dinitrophenylhydrazine</td>
<td>119-26-6</td>
<td>Not Applicable</td>
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**Canada**

**WHIMIS 2015 - GHS Classifications**

WHIMIS 2015 Hazard Classification Information:

<table>
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<tr>
<th>Component</th>
<th>CAS No</th>
<th>WHIMIS 2015 Hazard Classification</th>
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<tbody>
<tr>
<td>2,4-Dinitrophenylhydrazine</td>
<td>119-26-6</td>
<td>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 &lt;500 µm); Physical Hazards Not Otherwise Classified - Category 1: May cause an explosion under conditions of shock and/or friction</td>
</tr>
</tbody>
</table>

**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

**DSL/NDSL**

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<table>
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<th>CAS No</th>
<th>CEPA Schedule I - Toxic Substances</th>
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<table>
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<tr>
<th>Component</th>
<th>CAS No</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
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2,4-Dinitrophenylhydrazine  119-26-6  Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

<table>
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<th>CAS No</th>
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<td>2,4-Dinitrophenylhydrazine</td>
<td>119-26-6</td>
<td>No information</td>
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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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
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<td>2,4-Dinitrophenylhydrazine</td>
<td>119-26-6</td>
<td></td>
<td></td>
<td>No information</td>
</tr>
</tbody>
</table>

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 05/15/2019
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

Product code: DI149
Product name: 2,4-DINITROPHENYLHYDRAZINE
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