1 Identification

Product identifier

Product name: 2,4-Dinitrophenol, 97%, stab. with 30-35% water

Stock number: I04105

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alpha.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS02 Flame
Flam. Sol. 2 H228 Flammable solid.

GHS06 Skull and crossbones
Acute Tox. 2 H300 Fatal if swallowed.
Acute Tox. 2 H310 Fatal in contact with skin.
Acute Tox. 2 H330 Fatal if inhaled.

GHS08 Health hazard
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Hazard determinants of labeling:

GHS02 GHS06 GHS08

Signal word Danger

Hazard-determining components of labeling:

2,4-Dinitrophenol

Hazard statements
H228 Flammable solid.
H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P320 Specific treatment is urgent (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
B4 - Flammable solid
D1A - Very toxic material causing immediate and serious toxic effects
F - Dangerously reactive material

Classification system

HMIS ratings (scale 0-4)

Health (acute effects) = 3
Flammability = 3
Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Dangerous components:

51-28-5 2,4-Dinitrophenol

Acute Tox. 2, H300; Acute Tox. 2, H310; Acute Tox. 2, H330; STOT RE 2, H373
4 First-aid measures

**Description of first aid measures**

**General information**
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation**
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

**After skin contact**
Immediatly wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

**After eye contact**
Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing**
Do not induce vomiting; immediately call for medical help.

**Information for doctor**

- **Most important symptoms and effects, both acute and delayed**
  - Fatal if inhaled.
  - Fatal in contact with skin.
  - Fatal if swallowed.
  - May cause damage to organs through prolonged or repeated exposure.

- **Indication of any immediate medical attention and special treatment needed**
  - No further relevant information available.

5 Fire-fighting measures

**Extinguishing media**
Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture**
If this product is involved in a fire, the following can be released:
- Carbon monoxide and carbon dioxide
- Nitrogen oxides (NOx)

**Advice for firefighters**
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources

**Environmental precautions:**
Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:**
Keep away from ignition sources.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.

**Prevention of secondary hazards:**
Keep away from ignition sources.

**Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

**Protective Action Criteria for Chemicals**

- **PAC-1:**
  - 51-28-5 2,4-Dinitrophenol
  - 0.61 mg/m³

- **PAC-2:**
  - 51-28-5 2,4-Dinitrophenol
  - 6.8 mg/m³

- **PAC-3:**
  - 51-28-5 2,4-Dinitrophenol
  - 16 mg/m³

7 Handling and storage

**Handling**
Precautions for safe handling:
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Open and handle container with care.

**Information about protection against explosions and fires:**
Protect against electrostatic charges.

**Conditions for safe storage, including any incompatibilities**

**Storage**
Requirements to be met by storerooms and receptacles:
Store in a cool location.

**Information about storage in one common storage facility:**
Store away from oxidizing agents.
Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.

**Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

8 Exposure controls/personal protection

**Additional information about design of technical systems:**
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Control parameters**
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
**Safety Data Sheet**

**acc. to OSHA HCS**

**Product name:** 2,4-Dinitrophenol, 97%, stab. with 30-35% water

### 9 Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

**General Information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Moist powder</td>
</tr>
<tr>
<td>Odor</td>
<td>Not determined</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH-value</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

#### 9.2 Change in condition

- **Melting point/Melting range:** 106-108 °C (223-226 °F) (dry)
- **Boiling point/Boiling range:** Not determined
- **Sublimation temperature / start:** Not determined
- **Flammability (solid, gaseous):** Highly flammable
- **Ignition temperature:** Not determined
- **Decomposition temperature:** Not determined
- **Auto igniting:** Not determined

### 10 Stability and reactivity

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** Reacts with strong oxidizing agents. Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals. Water reacts violently with alkali metals.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** Oxidizing agents

**Hazardous decomposition products:** Carbon monoxide and carbon dioxide, nitrogen oxides

### 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:**
- Fatal if inhaled.
- Fatal in contact with skin.
- Fatal if swallowed.

**Danger through skin absorption:**

**LD/LC50 values that are relevant for classification:**

- **51-28-5** 2,4-Dinitrophenol
  - Oral [LD50] 30 mg/kg (rat)

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For additional information and precautions, consult the full safety data sheet.
Safety Data Sheet
acc. to OSHA HCS

Product name: 2,4-Dinitrophenol, 97%, stab. with 30-35% water

Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: No sensitizing effects known.
Germl cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.
Specific target organ system toxicity - repeated exposure: May cause damage to organs through prolonged or repeated exposure.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic

12 Ecological information
Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicity: No further relevant information available.

Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Avoid transfer into the environment.
Very toxic for aquatic organisms

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

Other adverse effects: No further relevant information available.

13 Disposal considerations
Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number
DOT, IMDG, IATA UN1320

UN proper shipping name
DOT Dinitrophenol, wetted
ADR 1320 Dinitrophenol, wetted
IMDG DINITROPHENOL, WETTED, MARINE POLLUTANT
IATA DINITROPHENOL, WETTED

Transport hazard class(es)
DOT

Class 4.1 Flammable solids, self-reactive substances and solid desensitised explosives
Label 4.1, 6.1

ADR

Class 4.1 (DT) Flammable solids, self-reactive substances and solid desensitised explosives
Label 4.1+6.1

IMDG

Class 4.1 Flammable solids, self-reactive substances and solid desensitised explosives
Label 4.1/6.1

IATA

Class 4.1 Flammable solids, self-reactive substances and solid desensitised explosives
Label 4.1 (6.1)

Packing group
DOT, ADR, IMDG, IATA I

Environmental hazards:
Marine pollutant (IMDG): Symbol (fish and tree)

Special precautions for user
Warning: Flammable solids, self-reactive substances and solid desensitised explosives
Stowage Category E
Segregation Code SG7 Stow "away from" class 3
SG30 Stow "away from" heavy metals and their salts

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:
DOT Quantity limitations On passenger aircraft/rail: 1 kg
On cargo aircraft only: 15 kg

Marine Pollutant (DOT): No

IMO Limited quantities (LQ): 0
Excepted quantities (EQ): Code: E0
Not permitted as Excepted Quantity

UN "Model Regulation": UN 1320 DINITROPHENOL, WETTED, 4.1 (6.1), I

15 Regulatory information
Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms
GHS02 GHS06 GHS08

Signal word Danger
Hazard-determining components of labeling:
2,4-Dinitrophenol
Hazard statements
H228 Flammable solid.
H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.
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P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P320 Specific treatment is urgent (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)
51-28-5 2,4-Dinitrophenol 68.0%

California Proposition 65
Prop 65 - Chemicals known to cause cancer
None of the ingredients are listed.

Prop 65 - Developmental toxicity
None of the ingredients are listed.

Prop 65 - Developmental toxicity, female
None of the ingredients are listed.

Prop 65 - Developmental toxicity, male
None of the ingredients are listed.

Information about limitation of use: For use only by technically qualified individuals.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.
**Product name:** 2,4-Dinitrophenol, 97%, stab. with 30-35% water

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tr>
<td>Flam. Sol. 2:</td>
<td>Flammable solids – Category 2</td>
</tr>
<tr>
<td>Acute Tox. 2:</td>
<td>Acute toxicity – Category 2</td>
</tr>
<tr>
<td>STOT RE 2:</td>
<td>Specific target organ toxicity (repeated exposure) – Category 2</td>
</tr>
</tbody>
</table>

OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)