

# Material Safety Data Sheet (MSDS)

## 3,5-Dinitrobenzoic acid (3,5-DNBA)

### Section 1: Chemical Product and Company Identification

**Product Name:** 3,5-Dinitrobenzoic acid (3,5-DNBA)

**CAS#:** 99-34-3

**Synonym:** Benzoic acid, 3,5-dinitro-; Acido 3,5-dinitrobenzoico; Acide 3,5-dinitrobenzoïque; 3-Carboxy-1,5-Dinitrobenzene.

**Chemical Formula:** C<sub>7</sub>H<sub>4</sub>N<sub>2</sub>O<sub>6</sub>

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### Section 2: Composition and Information on Ingredients

**Composition:**

| Name                               | CAS #   | % by Weight |
|------------------------------------|---------|-------------|
| 3,5-Dinitrobenzoic acid (3,5-DNBA) | 99-34-3 | min 99      |

### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation.

**Potential Chronic Health Effects:**

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation.

### Section 4: First Aid Measures

**Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

**Skin Contact:** After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used.

Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

**Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Inhalation:** Allow the victim to rest in a well-ventilated area. Seek immediate medical attention.

**Serious Inhalation:** Not available.

**Ingestion:** Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**Serious Ingestion:** Not available.

### Section 5: Fire and Explosion Data

**Flammability of the Product:** May be combustible at high temperature.

**Ignition point:** 261 °C

**Auto-Ignition Temperature (aerogel):** 310 °C

**Flash Points:** 231 °C

**Flammable Limits:** Not available.

Concentration limit of flame spread (Lower): 26 g/m<sup>3</sup>

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...).

**Fire Fighting Media and Instructions:**

**SMALL FIRE:** Use DRY chemical powder.

**LARGE FIRE:** Use water spray, fog or foam. Do not use water jet.

### Section 6: Accidental Release Measures

**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:** Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

### Section 7: Handling and Storage

**Precautions:** Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.

**Storage:** Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

### Section 8: Exposure Controls/Personal Protection

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:** Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### Section 9: Physical and Chemical Properties

|                                      |                |
|--------------------------------------|----------------|
| Physical Description                 | odorless solid |
| 3,5-DNBA, % by weight, min           | 99             |
| Molecular weight (g/mol)             | 212,12         |
| Water solubility (% at 25 °C)        | 0,1            |
| Density (g/cm <sup>3</sup> at 20 °C) | 1.683          |
| Melting point (°C)                   | 204-205        |
| PH value                             | 2,6            |
| Volatility (% at 21 °C)              | 0              |

### Section 10: Stability and Reactivity Data

**Stability:** The product is stable.  
**Instability Temperature:** Not available.  
**Conditions of Instability:** Not available.  
**Incompatibility with various substances:** Not available.  
**Corrosivity:** Non-corrosive in presence of glass.  
**Special Remarks on Reactivity:** Not available.  
**Special Remarks on Corrosivity:** Not available.  
**Polymerization:** No.

### Section 11: Toxicological Information

**Routes of Entry:** Dermal contact. Eye contact. Inhalation. Ingestion.  
**Toxicity to Animals:** LD 50 (oral, rat): 3940 mg/kg; LC50: Not available.  
**Chronic Effects on Humans:** Not available.  
**Other Toxic Effects on Humans:** Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant, permeator), of inhalation.

### Section 12: Ecological Information

**Ecotoxicity:** Not available.  
**BOD5 and COD:** Not available.  
**Products of Biodegradation:** Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.  
**Toxicity of the Products of Biodegradation:** The products of degradation are more toxic.  
**Special Remarks on the Products of Biodegradation:** Not available.

### Section 13: Disposal Considerations

**Waste Disposal:** Waste must be disposed of in accordance with state and local environmental control regulations.

#### Section 14: Transport Information

**DOT Classification:** Not a DOT controlled material (United States).

**Identification:** Not applicable.

**Special Provisions for Transport:** Not applicable.

#### Section 15: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

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