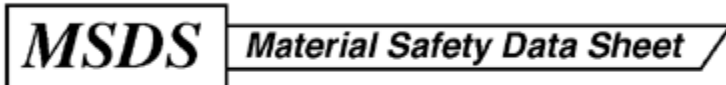


MSDS Number: **D7464** * * * * * *Effective Date: 05/04/07* * * * * * *Supersedes: 07/27/04*



From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

2,4-DINITROPHENYLHYDRAZINE

1. Product Identification

Synonyms: Hydrazine, (2,4-dinitrophenyl)-; 2,4 DNPH

CAS No.: 119-26-6

Molecular Weight: 198.14

Chemical Formula: C₆H₆N₄O₄

Product Codes: 2412

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
-----	-----	-----

2,4-Dinitrophenylhydrazine	119-26-6	70%
Yes		
Water	7732-18-5	30%
No		

3. Hazards Identification

Emergency Overview

WARNING! FLAMMABLE SOLID. KEEP WET. EXPLOSIVE IF DRY. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO EYES AND SKIN. MAY CAUSE CYANOSIS. MAY CAUSE ALLERGIC SKIN REACTION.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe

Flammability Rating: 3 - Severe (Flammable)

Reactivity Rating: 3 - Severe (Explosive)

Contact Rating: 3 - Severe (Life)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON;
VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Harmful if inhaled. Absorption into the body may cause cyanosis.

Ingestion:

Harmful if swallowed. May cause cyanosis.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain.

May cause allergic skin reactions. Absorption into body may cause cyanosis.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

Lengthy exposures may affect the ability of blood to carry oxygen (methemoglobinemia), resulting in bluish discoloration of lips and tongue (cyanosis).

Aggravation of Pre-existing Conditions:

No information found.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Flammable solid. May explode when heated. Classified as an explosive when dry. Fire fighting should be done from a remote position. Moist solid contains ca. 30% water.

Explosion:

Dangerous explosion hazard when dry. Sensitive to mechanical impact. Sensitive to static discharge.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

For related compound phenylhydrazine (may be used as a reference):

-OSHA Permissible Exposure Limit (PEL):

5 ppm (TWA), 10 ppm (STEL) skin

-ACGIH Threshold Limit Value (TLV):

0.1 ppm (TWA) skin, category A2, suspect human carcinogen.

-NIOSH recommended exposure limit (REL):

0.6 mg/m³/2H, ceiling concentration

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Wet, red or orange, crystalline powder.

Odor:

No information found.

Solubility:

Slightly soluble in water.

Specific Gravity:

No information found.

pH:

No information found.

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

No information found.

Melting Point:

198 - 202C (388 - 396F) Decomposes.

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Unstable above 160C (320F).

Hazardous Decomposition Products:

Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Oxidizing agents, heat.

Conditions to Avoid:

Heat, flame, ignition sources, shock, dryness, and incompatibles.

11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure. Irritation Data (rabbit, std Draize, 500mg/24H): Eye, mild. Investigated as a mutagen.

-----\Cancer Lists\-----

Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
2,4-Dinitrophenylhydrazine None (119-26-6)	No	No	
Water (7732-18-5) None	No	No	

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: FLAMMABLE SOLID, ORGANIC, N.O.S.
(2,4-DINITROPHENYLHYDRAZINE)

Hazard Class: 4.1

UN/NA: UN1325

Packing Group: II

Information reported for product/size: 100G

International (Water, I.M.O.)

Proper Shipping Name: FLAMMABLE SOLID, ORGANIC, N.O.S.
(2,4-DINITROPHENYLHYDRAZINE)

Hazard Class: 4.1

UN/NA: UN1325

Packing Group: II

Information reported for product/size: 100G

15. Regulatory Information

```
-----\Chemical Inventory Status - Part 1\-----
-----
Ingredient                                TSCA  EC   Japan
Australia
-----
2,4-Dinitrophenylhydrazine (119-26-6)    Yes  Yes  Yes
Yes
Water (7732-18-5)                         Yes  Yes  Yes
Yes

-----\Chemical Inventory Status - Part 2\-----
-----
Ingredient                                Korea  --Canada--
Phil.                                     DSL   NDSL
-----
2,4-Dinitrophenylhydrazine (119-26-6)    Yes   Yes   No
Yes
Water (7732-18-5)                         Yes   Yes   No
Yes

-----\Federal, State & International Regulations - Part 1\-----
-----
313-----
Ingredient                                -SARA 302-  -----SARA
Chemical Catg.                            RQ      TPQ      List
-----
2,4-Dinitrophenylhydrazine (119-26-6)    No      No      No
No
Water (7732-18-5)                         No      No      No
No
```

-----\Federal, State & International Regulations - Part 2\-----			
		-RCRA-	-
TSCA-			
Ingredient	CERCLA	261.33	8 (d)
2,4-Dinitrophenylhydrazine (119-26-6)	No	No	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
 Reactivity: No (Mixture / Solid)

WARNING:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

Australian Hazchem Code: 2[Y]

Poison Schedule: None allocated.

WHMIS:

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

16. Other Information

NFPA Ratings: Health: 1 Flammability: 2 Reactivity: 2

Label Hazard Warning:

WARNING! FLAMMABLE SOLID. KEEP WET. EXPLOSIVE IF DRY. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO EYES AND SKIN. MAY CAUSE CYANOSIS. MAY CAUSE ALLERGIC SKIN REACTION.

Label Precautions:

- Avoid breathing dust.
- Avoid contact with eyes, skin and clothing.
- Keep container closed.
- Use only with adequate ventilation.
- Wash thoroughly after handling.
- Keep away from heat, sparks and flame.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all

cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)