

SAFETY DATA SHEET

1. Identification

Product identifier 2,4-Dinitrophenol (min 15wt% water)

Other means of identification

Item N-10641

Recommended use For Laboratory Use Only

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information**Manufacturer**

Company name Chem Service, Inc.

Address
660 Tower Lane
West Chester, PA 19380
United States

Telephone Toll Free 800-452-9994
Direct 610-692-3026

Website www.chemservice.com
E-mail info@chemservice.com

Emergency phone number Chemtrec US 800-424-9300
Chemtrec outside US +1 703-527-3887

2. Hazard(s) identification

Physical hazards Flammable solids Category 1

Self-reactive substances and mixtures Type A

Health hazards Acute toxicity, oral Category 3

Acute toxicity, dermal Category 3

Acute toxicity, inhalation Category 3

Specific target organ toxicity, repeated exposure Category 2

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment, long-term hazard Category 1

OSHA defined hazards Not classified.

Label elements**Signal word** Danger**Hazard statement**

Flammable solid. Heating may cause an explosion. Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement**Prevention**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Keep/Store away from clothing and other combustible materials. Keep only in original container. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Avoid breathing dust/fume. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing. Wear protective gloves/eye protection/face protection.

Response

If swallowed: Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor. Specific treatment (see this label). Rinse mouth. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish. In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store at temperatures not exceeding 25°C / 77°F. Store away from other materials.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
2,4-Dinitrophenol (min 15wt% water)		51-28-5	85
De-ionized water		7732-18-5	15

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician.

Skin contact

Take off immediately all contaminated clothing. Wash off with soap and plenty of water. Call a POISON CENTER or doctor/physician if you feel unwell. Get medical attention if irritation develops and persists.

Eye contact

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms/effects, acute and delayed

Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

Take off immediately all contaminated clothing. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

Fire-fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. In the event of fire and/or explosion do not breathe fumes.

General fire hazards

Flammable solid.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Collect spillage.
	Large Spills: Wet down with water and dike for later disposal. Following product recovery, flush area with water.
	Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Minimize dust generation and accumulation. All equipment used when handling the product must be grounded. Use explosion-proof equipment. Do not taste or swallow. Avoid breathing dust. Avoid contact with skin. Avoid contact with eyes. Avoid contact with clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Do not empty into drains.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks and open flame. Store in original tightly closed container. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from other materials. Keep in an area equipped with sprinklers.
8. Exposure controls/personal protection	
Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Ventilate as needed to control airborne dust. Use explosion-proof ventilation equipment if airborne dust levels are high. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear eye/face protection. If contact is likely, safety glasses with side shields are recommended.
Skin protection	
Hand protection	Wear protective gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
9. Physical and chemical properties	
Appearance	
Physical state	Solid.
Form	Solid. Crystalline Solid
Color	Yellow to Yellowish
Odor	Not available.
Odor threshold	Not available.
pH	2.6 - 4.4 Colorless pH 2.6; yellow ph 4.4
Melting point/freezing point	233.6 - 237.2 °F (112 - 114 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.

Flammability (solid, gas) Flammable solid.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 0 kPa at 20 °C

Vapor density 6.35

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) 1.7

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

Density 1.683 g/cm³

Molecular formula C₆H₄N₂O₅

Molecular weight 184.11 g/mol

Percent volatile 0 %

Specific gravity 1.68

VOC (Weight %) 0 %

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Heat, flames and sparks. High temperatures. Contact with incompatible materials.

Incompatible materials Alkaline metals.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion Toxic if swallowed.

Inhalation Toxic by inhalation.

Skin contact Toxic in contact with skin.

Eye contact Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Toxic by inhalation. Toxic if swallowed. Toxic in contact with skin.

Product	Species	Test Results
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2,4-Dinitrophenol (min 15wt% water)

Acute

Oral

LD50

Dog

20 mg/kg

Mouse

45 mg/kg

Rabbit

30 mg/kg

Rat

30 mg/kg

Product	Species	Test Results
Other		
LD50	Dog	20 mg/kg
	Mouse	26 mg/kg
	Rat	20 mg/kg
Components	Species	Test Results
2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5)		
Acute		
<i>Oral</i>		
LD50	Dog	20 mg/kg
	Mouse	45 mg/kg
	Rabbit	30 mg/kg
	Rat	30 mg/kg
<i>Other</i>		
LD50	Dog	20 mg/kg
	Mouse	26 mg/kg
	Rat	20 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Not available.

Chronic effects May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results
2,4-Dinitrophenol (min 15wt% water)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 3.4 - 5.66 mg/l, 48 hours
Fish	LC50	Asiatic knifefish (Notopterus notopterus) 0.9 mg/l, 96 hours
Components	Species	Test Results
2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 3.4 - 5.66 mg/l, 48 hours
Fish	LC50	Asiatic knifefish (Notopterus notopterus) 0.9 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

2,4-Dinitrophenol (min 15wt% water) 1.67

Partition coefficient n-octanol / water (log Kow)

2,4-Dinitrophenol (min 15wt% water)

1.67

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations**Disposal instructions**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste P List: Reference

2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5) P048

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information**DOT****UN number** UN1320**UN proper shipping name** Dinitrophenol, wetted with not less than 15 percent water, by mass, MARINE POLLUTANT**Transport hazard class(es)**

Class 4.1

Subsidiary risk 6.1(PGI, II)

Label(s) 4.1, 6.1

Packing group

I

Environmental hazards**Marine pollutant** Yes**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Special provisions**

23, A8, A19, A20, N41

Packaging exceptions

None

Packaging non bulk

211

Packaging bulk

None

IATA**UN number** UN1320**UN proper shipping name** Dinitrophenol, wetted with 15% or more water, by weight**Transport hazard class(es)**

Class 4.1

Subsidiary risk 6.1(PGI, II)

Packing group

I

Environmental hazards**Marine pollutant** No.

3EP

Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

Other information**Passenger and cargo aircraft** Allowed.**Cargo aircraft only** Allowed.**IMDG****UN number** UN1320**UN proper shipping name** DINITROPHENOL, WETTED with not less than 15% water, by mass, MARINE POLLUTANT**Transport hazard class(es)**

Class 4.1

Subsidiary risk 6.1(PGI, II)

Packing group

I

Environmental hazards**Marine pollutant** Yes

F-B, S-J

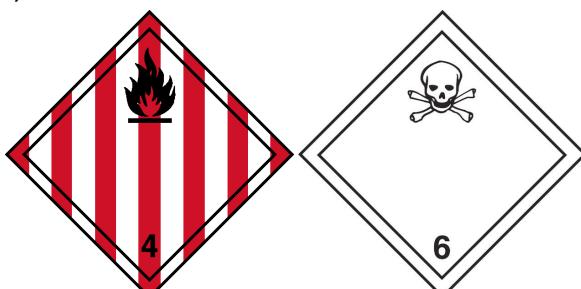
EmS

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

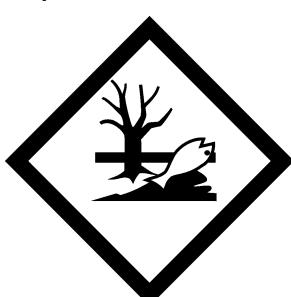
DOT



IATA; IMDG



Marine pollutant



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5) Listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - Yes
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SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
2,4-Dinitrophenol (min 15wt% water)	51-28-5	85

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Hazardous substance
Section 112(r) (40 CFR Priority pollutant
68.130) Toxic pollutant

Safe Drinking Water Act (SDWA) Monitoring

US state regulations

US. Massachusetts RTK - Substance List

2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5)

US. New Jersey Worker and Community Right-to-Know Act

2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5)

US. Rhode Island RTK

2,4-Dinitrophenol (min 15wt% water) (CAS 51-28-5)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 06-26-2014

Version # 01

NFPA ratings
Health: 3
Flammability: 3
Instability: 0

Disclaimer

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

Persons not specifically and properly trained should not handle this chemical or its container. This product is furnished FOR LABORATORY USE ONLY! Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticide products, food additives or as household chemicals.

This Safety Data Sheet (SDS) is intended only for use with Chem Service, Inc. products and should not be relied on for use with materials from any other supplier even if the chemical name(s) on the product are identical! Whenever using an SDS for a solution or mixture the user should refer to the SDS for every component of the solution or mixture. Chem Service warrants that this SDS is based upon the most current information available to Chem Service at the time it was last revised. THIS WARRANTY IS EXCLUSIVE, AND CHEM SERVICE, INC. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. This SDS is provided gratis and CHEM SERVICE, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES.

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