



Owner C.H.O	DOC. NO. SOP	REV. 2	DATE 12/9/19
DOC. TITLE SOP FOR A2,4-DINITROPHENOL			

Environmental Health & Safety

STANDARD OPERATING PROCEDURES (SOP) FOR WORKING WITH 2,4-DINITROPHENOL AT AMHERST COLLEGE

General Information

2,4-Dinitrophenol, common known as DNP, is a yellow crystalline solid that is classified as **acutely toxic** and very flammable compound. **When dry, heated, or exposed to shock or friction, DNP can become highly explosive. Due to this**, special procedures must be in place in regards to the storage and security of this chemical.

DNP sublimates and has a sweet, musty odor; it is soluble in most organic compounds. It is used in Biochemistry as a chemical in membrane transport processes; in industry it is used as a chemical in pesticides, antiseptics, and herbicides.

Personal Protective Equipment

When working with DNP, the following personal protective equipment (PPE) **must** be worn:

Splash goggles

Lab coat

Long pants

Close toed shoes

Nitrile Gloves – Double-gloving is mandatory when using this compound. Change gloves upon contact (dispose of gloves in a separate container, as P-coded waste)

Safety Devices

Fume hood – always work with DNP in a fume hood to prevent exposure by inhalation

Identify the location of all the safety devices in the room before starting your procedure. Also, familiarize yourself with all the possible means of egress

Specific Health Hazards



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There are no published exposure limits for DNP but precautions should be taken to ensure exposure via all routes of entry

Short term exposure to DNP may cause nausea, headache, dizziness, etc.; long term exposure may lead to cataracts, compromising of the central nervous and cardiovascular systems.



Pictogram:

Hazards: toxic, specific organ toxicity, flammable, and environment

Routes of Entry

Inhalation, skin/eye contact, ingestion

If *any part of your body* comes in contact with DNP, call the Amherst College Emergency phone number 413-542-2111. Also call this number if you begin to feel ill after working with or in the vicinity of DNP

Inhalation

If inhaled, move to fresh air, and get help. if you begin to feel ill during / after working with DNP, Call the Amherst College Police Department (ACDP) at x2111 to report it

Eye contact

Use eyewash to flush eyes with water for at least 15 minutes

Skin Contact

Wash skin with plenty of water for 15 minutes. Use safety shower, if needed.

If contact with clothes or shoes, remove contaminated clothing – (**do not leave the building with contaminated clothing**); contact Chemical Hygiene Officer or your department safety personnel

Ingestion

Rinse mouth with plenty of water

Do not induce vomiting

Do not perform mouth-to-mouth

Storage and Special Handling



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DNP must be stored locked up

Store in a tightly closed container in a cool, dry area that is well ventilated, such as a flammable cabinet

Store in original container inside of a secondary container with a lid

Label containers with the words: "Danger" and "Acutely Toxic"

Do not store on shelf

Store away from: oxidizers, heat sources, shock, friction.

If you have DNP that you no longer need, please contact Jason Williams, x2736, for disposal

Special Handling

Do not heat or evaporate this compound

Keep capped unless being poured

Thoroughly wash hands with soap and water before leaving the lab

Do not handle cell phones or other devices while working with this product

Do not touch skin while/after using this product unless hands have been thoroughly washed

Limit the touching of surfaces, clothing, body, personal items, door handles, lab materials while using this product

Spill clean up

Please do not attempt to clean up a DNP spill (regardless of volume or concentration) as this is an acutely hazardous compound

Contact Jason Williams (x2736) or call the emergency phone number, x2111 to report any spills of this compound

Alert everyone in the area

Leave the room

Close the door behind you

Call Jason Williams (Chemical Hygiene Officer) or The Amherst College emergency number (x2111) to report it.



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Disposal

Gloves, disposable pipets, pipet tips, Kim wipes, and other disposable materials that come in contact with DNP shall be disposed of separately from other waste (as P-coded Waste)

DNP waste should be disposed of by itself unless it is mixed with other chemicals. All dry waste of these compounds must be disposed of in a container **that has a liner.**

If you have DNP that you no longer need or if you have questions about waste disposal, contact the Chemical Hygiene officer

Questions

Contact Jason Williams or Environmental Health and Safety if you have any questions about this SOP or this compound.