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# -Dinitrophenol- An Explosive Supplement

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Figure 1: Commercial Hype Over Dinitrophenol (DNP) Supplementation

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## INTRODUCTION

In recent years a long-banned nutritional supplement has reemerged. The supplement, known as Dinitrophenol (DNP), poses a potential danger to first responders. DNP is sometimes used by those who desire to simply lose weight, but is most often seen utilized in the world of body builders as an aid to cut body fat percentages ([Figure 1](#)). In addition to being effective as a means for the shedding of pounds, DNP is capable of undergoing violent chemical decompositions if improperly handled. Cases have been encountered where this material has been indicated as the cause of accidental explosions. This bulletin will give first responders an understanding of DNP, and indicators and warning signs for its presence.

## HISTORY OF DNP

DNP had a brief history in the production of military explosives, but it was replaced by safer materials after World War I. After vanishing from the explosive field the material found a much more welcoming home as a potential weight loss drug in 1933.[1] In the year after this discovery one clinic alone distributed over 1,200,000 capsules of DNP.[2] DNP is so powerful that a single 100 mg dose can raise metabolism 11%. The old adage, containing some irony when applied to weight loss, of “There is no free lunch” can be applied to DNP usage. The increase in metabolism created by DNP brings along numerous undesirable side effects.[3] The most pronounced and potentially lethal side effect being extreme hyperthermia (increase in body temperature). Perhaps most telling is the publication of an article by the same scientist who first touted the potential benefits of DNP, just two years after this discovery, titled “Treatment of Acute Dinitrophenol Poisoning”. [4] It took five years after its first usage in weight loss before DNP was labelled as ‘extremely dangerous and not fit for human consumption’ by the Federal Food, Drug and Cosmetic Act of 1938. Unfortunately, this message from over 80 years ago appears to have failed to reach the ears of some modern day fitness fanatics.

DNP was “rediscovered” by a Russian-born doctor, Nicholas Bachynsky. During World War II the Russians tapped into the hyperthermia effect of DNP to keep soldiers warm in the winter. The doctors noticed the soldiers taking DNP also experienced weight loss. Bachynsky re-discovered this effect while translating Russian medical journals for the United States government. In 1981, Dr. Bachynsky pressed DNP into tablets he called “Mitcal” and marketed them through his private weight loss clinic. Despite being convicted of drug law violation and being fined \$86,000 in 1986 he continued to promulgate DNP until he was finally jailed for fraud in 2008.

In a twist of fate Bachynsky met a man called Dan Duchaine while in prison. Dubbed the “steroid guru” Duchaine (who was in prison for selling illegal steroids) became enthralled with

DNP. Once released from jail he began to aggressively market DNP to the body building community as “the king of the fat-loss drugs”.

The influence of Dr. Bachynsky and Duchaine lived on into the time period of maturation of the Internet. It did not take long for other unscrupulous individuals and companies to set up Internet sales of DNP under names such as “Dinosan”, “Dnoc”, “Solfo Black”, “Nitrophen”, and “Chemox”. Some DNP products can be seen in [Figure 2](#).



Figure 2: Packaging of DNP Products From Early 2000s Found on Internet

Commercial marketing of these illicit supplements hit an apex in the early 2000s, until the United Kingdom made the supplement illegal in 2003. However, the supplement still keeps appearing to meet the illicit demand for a community where it has gained an underground following.

## CURRENT DNP TRENDS & DANGERS

It needs to be stressed that DNP is not just a dangerous dietary supplement. This chemical compound is an explosive capable of undergoing violent and catastrophic decomposition. Responders need to be aware of the forms it comes in, and the hazards they can pose. DNP can be encountered in various fashions.

To this day DNP remains a product with an almost cult like following. To feed the demand for DNP, individuals with aspirations of acquiring quick wealth sell dubious wares across the Internet. Typically, DNP is sold in pill form. An example of such products is shown in [Figure 3](#).



Figure 3: DNP in Gel Caps

Pure DNP is light yellow in color. The tablets on the left hand side of [Figure 3](#) represent the ideal coloration. Impure material, or material that has aged and decomposed, will take on a darker color. The tablets on the right hand side of [Figure 3](#) show quite starkly the lack of quality control in the illegal DNP market. Tablets pose little explosive hazard, as the DNP is typically “cut” with inert powders and packed in small discretely separate capsules. However, DNP typically starts off in larger bulk quantities before it finds its way into the smaller gel capsules.

DNP supplements are in many ways akin to any other illegal drug produced for sale. They are made by individuals with no regard for safety or chemical (and often times personal) hygiene. Those producing the capsules need to first procure bulk DNP. Various companies such as Alibaba are well known clearing houses for a variety of questionable chemicals. Preliminary research seems to indicate that DNP mainly comes from Chinese chemical distributors, with some American competition to be found. One patriotic website decries the inferior Chinese product, showing a side by side comparison with its American



Figure 4: Two Different DNP Vendor Products

variant. Both are seen in [Figure 4](#). Again, first responders should be cognizant that DNP can run a gamut of appearances from brown and paste-like to bright yellow and crystalline. When found in bulk, as seen in [Figure 4](#), DNP should be considered an explosive. Those encountering it should call in bomb technicians to safely collect and dispose of the material.

The author has recently talked to one public safety bomb squad which has run across three labs where bulk DNP was present over the last year. In one case, an explosion in a lab set off by a “chemist” interacting with DNP while in possession of a lit cigarette buckled out a hotel room wall. The Internet has web pages that instruct budding entrepreneurs in the finer aspects of supplement production. Pictures from one of these Satanic “pill mills” can be seen in [Figure 5](#). Of particular note is the photo on the right hand side. DNP is typically shipped wetted with water. A Pyrex® glass dish loaded with DNP can be seen placed on the stove top to drive off the



Figure 5: DNP Supplement Home Lab

water. The resulting explosion from a mass of DNP of that volume will also drive off the stove, walls, ceiling and any inhabitants within the kitchen.

Other activities taking place at these supplement “home factories” include grinding coarse powders down and blending them with a cutting agent such as corn starch. Some operations take loose powder and compress it into tablets in a metal pill press. Grinding, crushing, pressing, pounding, poking (and all other such boisterous activities) do not sit well with explosive compounds. If encountered, such labs should be treated as highly dangerous.

Responders can also look to the physical attributes of suspects and surroundings for other indicators of the presence of DNP. Not only is DNP a metabolic enhancer and an explosive, it has a third attribute that was historically used. It is a strong dye. DNP dyes things a distinct yellow color. Suspects making DNP capsules can have yellowed clothing, hair and even skin.

## **SUMMARY**

The prevalence of DNP within the body building community reached an apex in the 2000's, and although in decline, to this day does not show any indication of vanishing. DNP is a dangerous explosive. In capsule form the product possesses minimal explosive hazard, although any amount of explosive needs to be treated with caution and should only be handled by properly trained professionals. In bulk form the powder poses very real and immediate dangers to those who encounter it. Responders need to be aware of the existence of this material, and indicators of its presence.

As DNP sold in bulk does not come from legitimate vendors, there is no guarantee it will be packaged in well labeled containers. In the absence of such labelling, large quantities of brown or yellow powders found in non-commercial containers, or located in conjunction with gel capsules, should be treated with caution. If a doubt exists to the nature of any material present in what appears to be a “home lab”, assistance from certified HazMat and explosive specialists should be sought out.



## ACKNOWLEDGMENTS

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