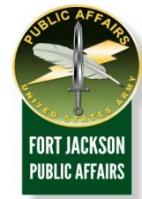




## United States Army Training Center Public Affairs Fort Jackson, South Carolina 29207



### Nitrotoluene (NT) FACT SHEET

#### **What is Nitrotoluene?**

Nitrotoluene (NT) is a man-made chemical that does not occur naturally in the environment. There are several chemical forms of NT (called isomers), including o-nitrotoluene, a liquid, and p-nitrotoluene, a crystalline solid. Both are pale yellow in color, have a scent similar to bitter almonds, and have low solubility in water. Nitrotoluene is typically used in the production of synthetic dyes, agricultural and pharmaceutical chemicals, and as intermediates in the manufacture of explosives. NT can also be found as a breakdown product of explosives such as trinitrotoluene (TNT) and dinitrotoluene (DNT).

#### **How might I be exposed to Nitrotoluene?**

Exposure to NT in the U.S. is expected to occur primarily to workers during production and use. The general population can be exposed to NT from inadvertent spills, emissions directly into the environment, or breakdown products of TNT and DNT. NT can enter the body through inhalation of contaminated dust or soil, absorption of contaminated water through the skin, or ingestion of contaminated water through drinking or using it for food preparation. Ingesting contaminated water would most likely introduce a higher amount of NT into the body than through inhalation or absorption through the skin.

*NOTE: The U.S. Environmental Protection Agency (EPA) Regional Screening Levels for o-NT and p-NT are 0.27 parts per billion (ppb) and 3.7 ppb, respectively. [1 ppb = 1 microgram/liter (ug/L)]. Regional screening levels are levels considered by EPA to be protective for humans (including sensitive groups) over a lifetime. Although sample results indicate that very little NT is present in private wells, the U.S. Army is committed to conducting a thorough assessment to protect the health of our Fort Jackson community members.*

#### **How may Nitrotoluene affect my health?**

There is very little direct information available about the potential negative health effects of NT on humans from environmental exposures. At high exposures, in occupational settings, negative health effects have included headache, weakness or exhaustion, dizziness, nausea, vomiting, anemia, rapid heartbeat or difficulty breathing. Additionally, animal studies show that NT can cause an anemic condition called methemoglobinemia at high, continuous exposures. However, methemoglobinemia can also be caused by exposure to certain medication, such as lidocaine or benzocaine, or other chemicals such as nitrites. Environmental exposures to low levels of NT have not been associated with methemoglobinemia or any other acute or chronic diseases.

#### **Will exposure to Nitrotoluene cause cancer?**

There is inadequate evidence that NT causes cancer in humans but there is sufficient evidence that o-NT can cause cancer in laboratory animals exposed to high doses for long periods of time. However, animal studies involving doses closer to environmental exposure levels of NT have not been conducted. Based on the animal studies, the National Toxicology Program has concluded

that o-NT is reasonably anticipated to be a human carcinogen while the International Agency for Research on Cancer has concluded that o-NT is probably carcinogenic in humans. A human cancer determination for p-NT has not been made.

### **How can Nitrotoluene affect children?**

At this time there is no information available about potential negative health effects of NT specific to children as there have been no known studies of children exposed to NT.

### **I (my spouse, my child) have/has/had (insert medical condition or disease here). Could exposure to Nitrotoluene have caused this?**

Negative health effects related to NT exposure would not be expected at the residences where private well samples indicate its presence because of the low amounts detected. However, if you have any health concerns you are encouraged to discuss those concerns with your private physician. Most diseases and medical conditions do not have one cause, but result from multiple contributing factors. Therefore, your private physician is the best person to determine your personal risk factors, if any, for your medical condition.

### **How can I reduce my risk of exposure to Nitrotoluene?**

In homes where tap or well water has tested positive for the presence of NT, exposure can be reduced by drinking and cooking with bottled water. Negative health effects would not be expected from bathing in water with low levels of NT.

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