INSTITUTE OF MAKERS OF EXPLOSIVES
SAFETY. SECURITY. STEWARDSHIP.

The safety and security institute of the commercial explosives industry since 1913

TNT | OUR ASKS

- Congress should work in cooperation with the U.S. Department of Defense and the Biden Administration to address the current TNT scarcity and identify ways to reduce barriers to the importation of TNT into the United States. While IME supports and understands the needs of the defense industry, the needs of the commercial explosives industry must not be displaced, and contracts and orders should not be interrupted. This will help ensure vital infrastructure projects and critical mineral development are completed in a timely and cost-effective manner.

- In order to maintain a strong domestic commercial explosives manufacturing industry, Congress should act to ensure that the commercial explosives industry is able to domestically source TNT.

- IME also supports federal funding and incentives for research and development of new, cost -effective, and sustainable high explosives which provide the commercial explosives industry with new tools to meet evolving customer needs and minimize environmental impacts.

Why Do We Have a TNT Shortage?

Current geopolitical conflicts have made it extremely difficult to source TNT from many of the countries the U.S. previously relied upon. Both the Army and the commercial explosives industry are experiencing difficulty securing the material. The current shortages compromise the U.S. defense sector and puts in limbo the many infrastructure priorities and projects created by the Bipartisan Infrastructure Law and the CHIPS and Science Act. The commercial explosives industry may not have the necessary tools to complete these projects without TNT and where TNT can be sourced, there will almost certainly be increased costs, leading to higher-cost projects.

[1] https://www.denix.osd.mil/awards/denix-files/sites/12/2016/03/P2_Team_Radford.pdf
[2] https://www.denix.osd.mil/awards/denix-files/sites/12/2016/03/P2_Team_Radford.pdf
[3] https://nepis.epa.gov/Exe/tiff2png.cgi/94004UYG.PNG?

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[4] https://www.defensenews.com/land/2024/02/06/us-army-hunts-for-explosives-to-meet-increased-munitions-output-goals/
[5] https://sam.gov/opp/bc7f217038864fa99bae591595b2c1c9/view#attachments-links

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What is TNT

TNT, or 2, 4, 6-trinitrotoluene, is a high explosive. The yellow, odorless substance is solid at room temperature and does not occur in nature. TNT is man-made by combining toluene with nitric and sulfuric acids.

How is TNT Used?

TNT is widely used by both the commercial explosives industry and the U.S. military. Due to its stability and shelf life, TNT is desirable for numerous applications. Unlike some high explosives, TNT is relatively insensitive and is not prone to detonation without shock (from another explosive or detonator), physical impact, static electricity, or extreme heat.

How does the military use TNT?

TNT is the Army's most widely used military explosive.[1] TNT is used by the defense industry for various applications, including the manufacture of artillery shells, grenades, and airborne bombs.

How does the commercial explosives industry use TNT?

TNT is an essential ingredient in the manufacturing of commercial explosives products like cast boosters, commonly used in the mining, quarrying, and construction industries. Thanks to innovation in the safety of our products, today's relatively insensitive blasting agents require the high output power of cast boosters to detonate.

Where does the U.S. Source TNT From?

Since 1986, TNT is no longer manufactured in the United States, leaving our nation highly vulnerable to shortages and solely dependent on foreign sources. The U.S. imports TNT from Poland, Turkey, South Korea, Australia, and India. Other major producers of TNT include China and Russia, however due to current geopolitical conflicts, the U.S. does not currently import TNT from either of these countries.

Why Did We Stop Producing TNT in the U.S.?

TNT was manufactured in the U.S. until 1986, when the Radford Army Ammunition Plant located in Virginia, ceased manufacturing the product because "environmental regulations became increasingly more stringent and costly to implement." [2]

Environmental Concerns

Production of TNT creates wastewater known as "red water" or "pink water" which, if not properly controlled, can be absorbed into soil leading to adverse health and environmental effects.[3] These potential environmental effects of TNT can be remediated through vacuum distillation, layer melt crystallization, and other proven control technologies.

Can we produce TNT Domestically?

In September 2023, the Army published a Sources Sought for the Construction and Operation of a TNT facility in the U.S.[5] The proposed facility would produce approximately 5 million pounds of TNT per year. The construction of the plant was funded through the Ukraine Supplemental in 2024. Currently, the Army is reviewing applications in response to the Sources Sought. However, the construction of this plant is not an immediate solution to the TNT shortage.

[1] https://www.denix.osd.mil/awards/denix-files/sites/12/2016/03/P2_Team_Radford.pdf
[2] https://www.denix.osd.mil/awards/denix-files/sites/12/2016/03/P2_Team_Radford.pdf
[3] https://nepis.epa.gov/Exe/tiff2png.cgi/94004UYG.PNG?

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[4] https://www.defensenews.com/land/2024/02/06/us-army-hunts-for-explosives-to-meet-increased-munitions-output-goals/
[5] https://sam.gov/opp/bc7f217038864fa99bae591595b2c1c9/view#attachments-links