

# TATP Fact Sheet

## Safety Risks for First Responders



**Explosives** are arguably the greatest terrorism threat faced today, specifically, peroxide-based explosives such as Triacetone triperoxide (TATP).

Nicknamed “The Mother of Satan,” TATP is a sensitive and easily-produced high explosive used traditionally by terrorist organizations, but also homegrown “garage chemists” and clandestine drug manufacturers. It is popular in terrorist bombings because the ingredients are readily available, it is very powerful, and is difficult to detect after detonation due to the lack of solid by-products. The most likely scenarios for first responders to encounter TATP would be responding to fires and/or explosions at clandestine laboratories (i.e. experiments gone wrong), or in potential bomb threat scenarios where responders are responsible for the protection and preservation of life, property, evidence, and the environment.

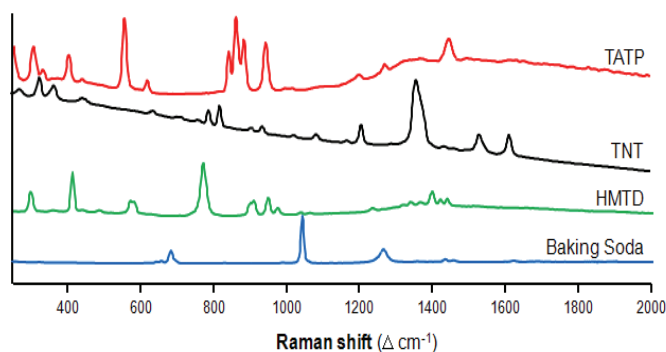


### TATP Characteristics

TATP is a white crystalline powder that can resemble sugar or methamphetamine. Extreme caution must be taken to safely identify any white powders in a suspected lab or improvised explosive device (IED). TATP is inherently very volatile, has the potential to sublime from a solid to a vapor, and can be detonated by the slightest friction from handling it, impact, and/or moderate temperature changes. The stability of TATP varies greatly depending on the level of residual sulfuric acid present. TATP is highly unstable when the sulfuric acid used in the manufacturing process is not thoroughly removed.

Raman spectra of TATP, TNT, HMTD (another easily improvised peroxide-based explosive), and baking soda. Each material can be uniquely identified based on its Raman spectrum.

**The FirstDefender® chemical identification system can safely and positively identify TATP and its primary ingredients, whether pure or in mixtures, without disturbing the sample.**



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## Peroxide-based Explosive Incidents

Among numerous other events, TATP or other peroxide-based explosives were involved in the following events:

**1999:** Millennium bomber Ahmed Ressam was arrested with 124 pounds of peroxide-based HMTD at the U.S.-Canadian border

**2001:** Richard Reid carried TATP in his shoe bomb aboard a flight

**2005:** Terrorists bombed the London subway with TATP

**2005:** Joel Hinrichs III detonated his backpack filled with TATP outside a packed University of Oklahoma football stadium

**2006:** "Garage chemist" Matthew Rugo dies from a TATP explosion in his apartment building in Texas City, Texas

**2006:** Terrorists planned to use peroxide-based explosives to blow up several airliners flying from Britain to the United States

**2006:** Routine police investigation finds TATP inside apartment in Arizona

**2007:** TATP was likely the intended explosive to be used by terrorists targeting the Frankfurt International Airport and Ramstein Air Base in Germany



## About FirstDefender

Ahura Scientific's FirstDefender is a ground-breaking addition to a first responder's toolbox. Based on Raman spectroscopy, FirstDefender enables users to analyze a sample through sealed translucent glass or plastic containers, improving responder safety and speeding response time. FirstDefender is a lightweight, MIL-STD-810F rugged instrument for rapid (typically within 30 seconds) and accurate non-contact identification of more than 7,600 explosives, industrial materials, narcotics and other chemicals. FirstDefender is an ideal chemical identification device for bomb squads and other organizations tasked with handling explosives as well as TICs, TIMs, and other potentially hazardous unknowns.



FirstDefender is now equipped with a Scan Delay feature, which enables users to delay laser activation for up to 120 seconds, allowing the operator to leave the hazard zone as an additional safety precaution if desired. FirstDefender can also be paired with an optional FlexProbe extension probe which allows the user to fix the sampling tip in place for hard-to-reach locations.

Based on Ahura Scientific's patented optical technology and mixture analysis software, FirstDefender offers superior performance, accuracy and reliability and is extremely easy to use. Federal agencies and military organizations, hazmat teams and law enforcement agencies across the United States are actively using the product, along with hundreds of other organizations worldwide.

## For More Information

To learn more about FirstDefender, or to schedule a demonstration, please contact Ahura Scientific.

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