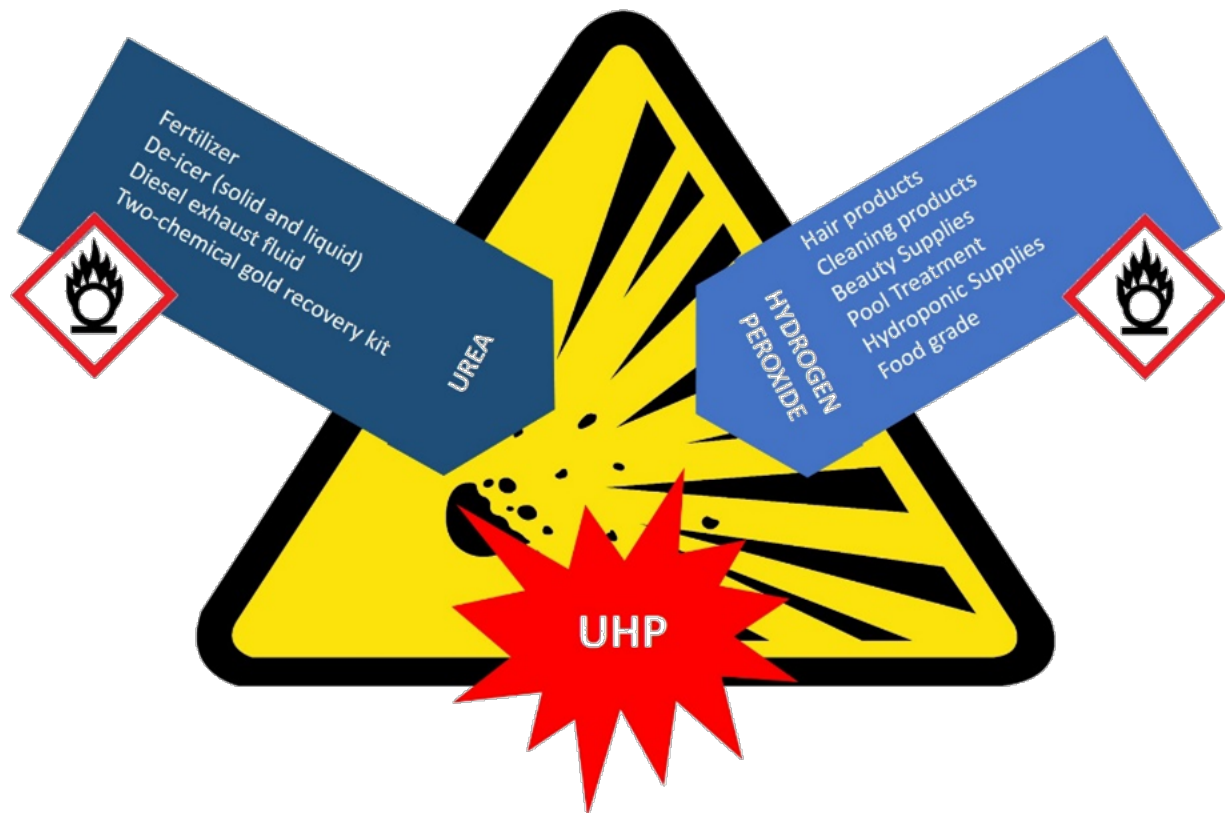


Urea Hydrogen Peroxide (UHP): Indicators of Acquisition and Manufacturing, and Considerations for Response

Terrorists will likely continue exploring the use of UHP because of the ready availability of inexpensive precursor materials coupled with online instructions, resulting in a threat to public safety and first responders. UHP is a chemical found in low concentrations of teeth whitening, earwax removal, and commercial antiseptic products. The low concentrations of UHP in these products are not sufficient to synthesize an HME, and they should not be considered a threat. UHP can be an explosive material in its pure form.

SCOPE: First responders may encounter clandestine efforts to manufacture homemade explosives (HMEs) during the course of their normal duties. Recognizing efforts to mix and synthesize explosive materials, and awareness-level knowledge of explosive precursor chemicals, are critical components of public safety.



WARNING: Upon discovery of suspicious chemicals, evidence of an unauthorized or suspicious chemical process, and the presence of UHP and precursors, personnel should immediately follow established organizational procedures, contact the bomb squad and establish standoff distances. Certain precursor chemicals, materials and components, and even the most rudimentary of explosive devices are inherently dangerous and should be treated accordingly, until rendered safe by certified subject matter experts.



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AUTHORED BY NCTC, DHS, FBI

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IMPORTANT: The following lists of indicators of acquisition and manufacturing may be innocuous or constitutionally protected activities. Instances without a reasonable alternative explanation should be evaluated while considering the totality of the circumstances, additional indicators, or observed behaviors reasonably indicative of terrorism before being reported as suspicious activity.

IDENTIFICATION: The two chemical components of UHP are urea and hydrogen peroxide. Both have legitimate uses and their presence alone does not constitute illegal activity.

- Commercial uses of urea include certain cold packs, fertilizer, de-icer products (in prill and granule form), diesel exhaust fluid, and urea and sodium metabisulfite gold recovery kits for electronic products. Urea is also an HME precursor in urea nitrate.
- Commercial uses of hydrogen peroxide include hair products, cleaning products, pool and spa maintenance products, hydroponic products for sterilization, and food bleaching products. Hydrogen peroxide is also an HME precursor in triacetone triperoxide (TATP), hexamethylene triperoxide diamine (HMTD), methyl ethyl ketone peroxide (MEKP), and concentrated hydrogen peroxide explosives.
- A concentrated powder form of UHP is used in manufacturing plastics.
- Evidence of attempts to produce UHP include containers for mixing and filtering equipment.
- UHP is detectable with common field detection instrumentation.



INDICATORS OF ACQUISITION:

- Purchase of abnormally large quantities of precursor chemicals.
- Missing or stolen UHP or precursor chemicals.
- Combined purchase of specific chemicals, protective equipment, and tools, particularly by someone exhibiting noteworthy behavioral cues or lack of familiarity with the legitimate use of the chemicals, protective equipment, and tools.
- Chemical precursor purchases spread across multiple stores in a chain.

INDICATORS OF MANUFACTURE:

- Requests for medical treatment, such as for blast injuries, inhalation, and or chemical exposure or burns.
- Byproducts that have a noxious or noticeable odor.



- Evidence of makeshift laboratories inside apartments, homes, sheds, garages, or other residential structures, often in the presence of other precursors or a finished HME.
- Signs of damage, corrosion, or discoloration (including bleaching) caused by precursor chemicals or chemical processes.
- Installation and use of makeshift exhaust and ventilation systems.
- Presence of store-purchased or makeshift laboratory equipment and tools, including glassware (beakers and flasks), thermometers, mixers, filtration systems, or distillation equipment in unusual locations.
- Precursor chemicals or chemical processes kept in ice baths and refrigerators.
- Large areas in a room or garage dedicated to drying chemicals.
- Evidence of common items used in a manner inconsistent with their legitimate purposes.
- Suspicious number of chemical containers and PPE-type consumables (rubber gloves, respirators) discarded in the trash.
- Improper disposal of chemical precursors or waste byproducts from chemical processes.
- Evidence of testing, such as unexplained explosions, damage, or injury.

RESPONSE CONSIDERATIONS:

- UHP will react with combustible and organic materials.
- Proper PPE and breathing apparatus are suggested to prevent inhalation and exposure during response to, or investigation of, unidentified chemicals or mixtures.
- If first responders suspect the manufacture of energetic materials or an unknown substance to be an HME, consult with your explosive ordnance disposal (EOD) or bomb squad immediately.
- **DO NOT** expose a suspected HME to shock, heat, or friction.
- A suspected HME laboratory may contain other explosives and booby traps. **DO NOT** touch, move, or remove suspicious chemicals or materials, as handling may cause injury or damage and contaminate forensic evidence.
- Certain illicit narcotics may resemble HMEs. Before field-testing, conduct a thorough threat assessment of the scene to help rule out the presence of HMEs.
- When field-testing suspected illicit narcotics, carefully follow instructions and procedures, testing the minimum amount of a sample required, using PPE, and keeping other personnel at a safe distance.

GENERAL CONSIDERATIONS FOR ANY HME:

- Many HME are similar in appearance. Always seek expert assistance in identifying suspected HME and associated hazards.
- The effectiveness of instructions found in books and magazines and online are highly dependent on the accuracy of those instructions and the competence of the would-be explosives maker.
- Most HME chemical precursors have legitimate commercial uses and are legal, inexpensive, and unregulated; therefore, they may not require identification or licensing or raise concerns when purchased.
- Establishing a relationship with businesses selling large quantities of precursor chemicals in your jurisdiction may encourage the business owners and operators to report suspicious activity.



- Understanding the typical quantities of noncommercial precursor chemical purchases may help identify abnormal purchase amounts.
- Interagency coordination and joint training can ensure a unified and effective response to an HME incident.

RESOURCES:

- **DHS OFFICE FOR BOMBING PREVENTION:**
<https://www.cisa.gov/bombing-prevention-training>
- **BOMBMaking MATERIALS AWARENESS PROGRAM (BMAP)**
<https://www.cisa.gov/bmap>
- **TECHNICAL RESOURCE FOR INCIDENT PREVENTION (TRIPwire)**
<https://tripwire.dhs.gov>
- **NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH; Searchable Pocket Guide to Chemical Hazards:**
<https://www.cdc.gov/niosh/npg/default.html>
- **1-855-TELL FBI (835-5324)** will direct callers to specially trained WMD operators; nonemergency use.
- **DHS & DOJ BOMB THREAT STANDOFF CARD:**
<https://tripwire.dhs.gov/reports/220482>
- **DEPARTMENT OF TRANSPORTATION EMERGENCY RESPONSE GUIDEBOOK (ERG); Urea hydrogen peroxide (ID# 1511; Guide# 140)**
 - **English:** <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2020-08/ERG2020-WEB.pdf>
 - **Spanish:** <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2020-07/GRE2020-WEB.pdf>
 - **French:** <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2020-07/GMU2020-WEB.pdf>





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