

Little Queens Incident

Boise National Forest, Idaho City RD

8-27-13

Quaternary Ammonia incident and potential hazard

Subject: Potential accidental mixing of hazardous chemicals.

Background: Quaternary Ammonia, also known as “Quat” or “ Quat 128”, is an ammonia based product that is used as a disinfectant to rid vessels of water carrying diseases that may contaminate other water sources with diseases hazardous to aquatic life. Mixing with chlorine based materials with Quat may result in the creation of toxic gases that could become life threatening.

Incident with serious potential: Quat and a chlorine based product were procured and provided to the Little Queens incident. The items were delivered in the same box and nearly mixed together while setting up a Quat station for treatment of incident equipment. The near miss was caught by incident personnel before mixing occurred avoiding a potentially serious accident.

Concerns to Incident Personnel:

- Mixing [bleach with ammonia](#) is potentially hazardous or fatal as it can create toxic vapors.
- Hydrochloric acid is formed and then the ammonia and chlorine gas react to form chloramine, which is released as a vapor. If ammonia is present in excess (which it may or may not be, depending on the mixture) toxic and potentially explosive liquid hydrazine may be formed.

Mitigation Measures:

What to Do If You Mix Bleach and Ammonia - First Aid

If exposed to fumes from mixing bleach and ammonia, immediately remove yourself from the vicinity to fresh air and seek emergency medical attention. The vapors can attack your eyes and mucous membranes, but the biggest threat comes from inhaling the gases.

1. Get away from the site where the chemicals were mixed. You can't call for help if you are overwhelmed by the fumes.
2. Call Incident Communications or 911 for emergency help. For minor incidents, call Poison Control for advice on handling the after-effects of exposure and cleaning up the chemicals. Poison Control can be reached at: 1-800-222-1222.
3. If you find someone who you think has mixed bleach and ammonia, chances are he or she will be unconscious. If you can, remove the person to fresh air, preferably outdoors. Call Incident Communications or 911 for emergency assistance. Do not hang up until instructed to do so.
4. Thoroughly ventilate the area before returning to dispose of the liquid. Seek specific instructions from Poison Control so that you don't hurt yourself. You're most likely to make this mistake in a closed room, so leave and seek assistance, return later to open a window, allow time for the fumes to dissipate, and then go back to clean up. Dilute the chemical mixture with plenty of water. Wear gloves, just as you would for either bleach or ammonia.