

**APPLICATION NOTE** 

## 4C<sup>™</sup> TECHNOLOGY FOR PRECURSOR MONITORING

Expand capabilities for complete threat analysis
Assess entire scene for potential precursors
Respond more appropriately

Progeny<sup>™</sup> ResQ<sup>™</sup> provides first responders and HAZMAT personnel with a handheld tool for quick chemical identification using 1064nm Raman spectroscopy. However, chemical information does not always provide a complete picture of the test site as a whole, or its potential hazard level. In many cases, the individually identified chemicals are being used in combination as precursors to create an even more hazardous situation – such as the making of explosives or illicit drugs. Often a first responder is required to know these vast recipes or have immediate way of verifying with an off-site expert, which may cause delays.

## IN-FIELD CHEMIST AT THE TOUCH OF A BUTTON

In order to facilitate the ease of monitoring for these precursor chemicals and to assist first responders in identifying a further hazard threat level, Progeny ResQ now offers 4C<sup>™</sup> Technology. This new feature automatically monitors the individual chemical results and then utilizes on-board advanced search algorithms and expert knowledge to determine if a potential illicit or hazardous threat is present. If a certain number of precursors are present over a given time period, Progeny ResQ will automatically trigger a warning to the user that combinations of the identified chemicals pose a potential threat. The 4C library contains precursors for common explosives, toxic gases, chemical warfare agents (CWAs) and other hazardous materials.

As an example, Figure 1 shows the common precursors used to build an explosive mixture. By themselves the precursors may not be considered an immediate danger, however the combination of these chemicals may alarm for a hazardous situation. With the use of 4CTechnology, the first responder has an additional warning and can respond even more appropriately.



Figure 1. Individually the acetone and hydrogen may not pose immediate danger to the first responder. With new 4CTechnology, the user will be notified that these chemicals are precursors for TATP.



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