

# CRESS to be Fielded to IBCTs:

## *Chemical Reconnaissance and Explosives Screening Sets Bring Detecting Precursors of HMEs to the Force*

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The Chemical Reconnaissance and Explosives Screening Set (CRESS) is Joint Program Executive Office (JPEO) for Chemical, Biological, Radiological and Nuclear Defense's (CBRND) solution to requirements developed by the U.S. Army Maneuver Support Center of Excellence (MSCOE). The CRESS enables members of a maneuver squad, or any out-front unit, to determine if unknown bulk solids, liquids, and trace chemicals are likely to be "prohibited" compounds (precursors for homemade explosives [HME]).

Typically target compounds (as well as prohibited compounds) are chemical fuels and oxidizers used to produce HME. Current product focus is on fuels such as ammonium and nitrate and oxidizers such as perchlorate and urea, as well as strong acids and bases. Detection of strong acids and bases would indicate materials used in the extraction process for HME. The CRESS uses colorimetric technology allowing users easy detection of precursors and pH paper to detect a strong acid or strong base. Testing has proven CRESS can detect unknown bulk solids, liquids, and trace chemicals.

The CRESS is currently being fielded to seven active-duty infantry brigade combat teams (IBCTs) and two National Guard IBCTs. One CRESS kit will be issued per squad. The remaining IBCTs are expected to purchase the CRESS kits based on mission requirements. One CRESS kit consists of five samplers, DVD (w/instructions), and an instruction sheet.

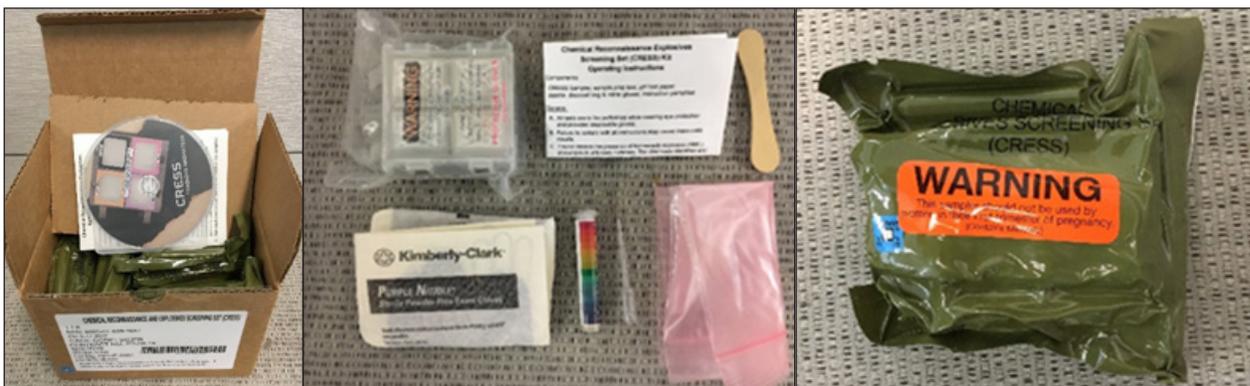
Each sealed (green) packet — or "sampler" — contains an assay sampler, instruction sheet, wooden sampling spoon, waste bag, pipette (for liquid samples), pH paper (3 strips in tube), and protective gloves. The CRESS kit sampler measures approximately 6 inches by 4.25 inches and weighs

approximately 6.9 ounces and fits in a uniform cargo pocket. Each sealed (green) packet — or "sampler" — contains an assay sampler, instruction sheet, wooden sampling spoon, waste bag, pipette (for liquid samples), pH paper (3 strips in tube), and protective gloves.

Two users can easily employ the kit in less than 15 minutes. The CRESS kit was designed with affordability in mind at less than \$380 per kit, which contains five samplers. The CRESS kit is a common table of allowances (CTA) item and can be purchased by any military unit (NSN 6665-01-669-4847, CAGE Code: 3XUS9). CRESS has a 48-month shelf life and should be stored in an arms room or other room temperature-controlled storage locations and should not be exposed to freezing temperatures and temperatures over 160 degrees Fahrenheit. The box and the sampler have a temperature label (for temperatures over 160 degrees Fahrenheit) on each of them that when its color changes from white to black indicates the sampler is no longer functional and should be disposed of as a Code F item. It is a Code F item because of the Nessler's Reagent (contains small amount of mercury) in the ammonium detection chamber. The amount of mercury in a sampler is roughly 2,000 times less than a compact fluorescent bulb (CFL), approximately 218 micrograms vs. 4-6 milligrams in a CFL. After use, a sampler should be disposed of as a Code F item and should be placed in the included red bag for disposal.

For additional information, contact Jeffrey Matz, the program manager for CRESS, at (410) 417-3417.

MAJ (Retired) Howard Beardsley currently serves as a science and technology analyst with the Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Analytics & Response Systems (Huntington Ingalls Industries) at Aberdeen Proving Ground, MD.



The Chemical Reconnaissance and Explosives Screening Set (CRESS)