

Chemical Delivery Systems, Inc.

Chemical Delivery Systems, Inc. (CDS, Inc.) develops and manufactures a number of microencapsulated particle systems for controlled release of solid, liquid, or gaseous materials in various commercial and military products. CDS, Inc., believes that its technologies are applicable and adaptable to both detection and identification taggants for explosives.

Innovative Biosystems, Inc.

Innovative Biosystems, Inc., produces a GeneTag™ using unique DNA sequences that can be detected in small amounts and amplified using polymerase chain reaction (PCR) methods. The company proposed this method for post-blast identification tagging of explosives. Six-month stability and explosion survivability testing has been conducted by Innovative Biosystems on ammonium nitrate fertilizer.

Isotag LLC

Isotag LLC uses stable (non-radioactive) isotopes to develop “molecular twins” by substituting deuterium for hydrogen in materials to provide an internal identification technique. In some cases, rare-earth elements or rare stable isotopes of common elements are also proposed. Isotag provides the marker compounds, the services to add the tag and take samples of tagged liquids, and the laboratory analytical services to verify the tag presence and tag concentration. It is currently providing tagging services for gasoline supplies of several major oil companies. In a test, Isotag exploded one ton of ANFO tagged with its isotags to verify post-blast survivability and subsequent collection and analysis procedures. The company also has tagged ammonium nitrate at a manufacturing plant.

Micro Tracers, Inc.

Micro Tracers, Inc., produces Microtracers™—colored, uniformly sized iron grit, iron alloy, graphite, stainless steel, or silica gel particles that are analyzed via colorimetric techniques—currently used in the animal and poultry feed and building materials industries. They have been used in more than 300 million tons of animal and poultry feed since the 1960s at a reported cost of ten cents per ton. The company has only limited experience in explosives mixing operations, though it believes that its general approach could be adaptable to explosive applications.

Microtrace, Inc.

Microtrace, Inc., manufactures the Microtaggant® Identification Particle—a 0.6- to 1.1-millimeter, irregularly shaped, multicolor and multilayered plastic particle whose color sequence serves as an identification code. This concept was originally developed and patented by the 3M Corporation in the 1970s. A similar product, called HF 6, is also