



**institute of makers of explosives**

Statement for the Record  
Of the Institute of Makers of Explosives  
By

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President

To the U.S. Chemical Safety and Hazard Investigation Board  
On

West Fertilizer Company Investigative Report and Recommendations  
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The Institute of Makers of Explosives (IME) applauds the thorough investigation conducted by the U.S. Chemical Safety and Hazard Investigation Board (CSB) and the release of the report and recommendations addressing the tragic loss of life and property in West, TX to an accidental explosion involving ammonium nitrate (AN). IME also appreciates the willingness of the CSB to become educated about the commercial explosives industry in order to more comprehensively understand the safety practices and guidelines our industry follows in managing the technical grade of AN (TGAN) used in blasting operations.

Founded over a century ago, IME is a non-profit association dedicated to providing accurate information and comprehensive recommendations concerning the safety and security of commercial explosive materials. IME represents U.S. manufacturers, distributors and transporters of commercial explosives materials and oxidizers as well as other companies that provide related services. Our mission is to promote safety and the protection of employees, users, the public and the environment and to encourage the adoption of uniform rules and regulations in the manufacture, transportation, storage, handling, use and disposal of explosive materials used in blasting and other essential operations. The primary vehicle IME uses to communicate best practices in safety and security in the industry are through *Safety Library Publications* (SLP), along with guidelines and best practices. A number of the SLPs have been incorporated into federal regulations.

Millions of metric tons of high explosives, blasting agents, and oxidizers are consumed annually in the U.S. These materials are essential to the U.S. economy. AN, classified as an oxidizer, is an indispensable ingredient in blasting agents used in mining, construction, and other essential industries. Currently, upwards of 75 percent of the millions of metric tons of AN consumed annually is manufactured for the explosives

industry. AN-based blasting agents have become the most widely used explosive materials in the world since their introduction in the 1950's. There is no viable alternative. Because of our industry's long association with AN and the nature of our business, we necessarily have an in-depth technical and scientific understanding of AN's potentially volatile properties.

The TGAN used in the explosives industry has the same chemical composition as the "fertilizer" grade of AN (FGAN) used in the agricultural sector; only the density of the prill is different. AN is a stable chemical substance. Its behavior is known, understood, and predictable, and it does not present a hazard to workers or the public when managed properly in accordance with existing regulatory requirements, good industry practices, and IME's Safety and Security Guidelines for Ammonium Nitrate (AN Guidelines). (See attachment.) IME's AN Guidelines were drafted in collaboration with the International Association of Fire Chiefs, the International Society of Explosives Engineers, and the National Stone, Sand & Gravel Association, and include provisions that go beyond current Occupational Safety and Health Administration (OSHA) regulations.

In addition to publishing our own guidelines, IME also provided extensive technical advice to the Environmental Protection Agency (EPA), OSHA, and the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), on the agencies' June 2015 publication: *Chemical Advisory: Safe Storage, Handling, and Management of Solid Ammonium Nitrate Prills* (EPA 550-F-15-001).

IME has also been extensively involved in the work of the National Fire Protection Association that resulted on the update of the Association's standards for AN safety that the CSB recommends in its report. (Chapter 11, Hazardous Materials Code, NFPA 400-2016.) These consensus standards mirror many of the recommendations made in the IME Guidelines. Congress has directed agencies to use consensus standards when they exist. Adoption of these standards by reference would significantly raise the bar for AN safety.

The commercial explosives industry's long-term and continued dedication to regulatory compliance and the development of state-of-the-art safety standards and risk assessment tools will ensure the industry remains one of the safest in the nation going forward. Our industry handles millions of tons of TGAN annually and has an impeccable safety record stretching back decades. With that in mind, IME appreciates CSB's recognition that properly followed regulatory safety standards and best practices for storing and handling TGAN used in the explosives industry have been effective and do not warrant new regulatory programs to protect our workers and surrounding communities.

Since 1971, the manufacture and storage of AN has been regulated under OSHA rules that specifically address the properties of this material [29 CFR 1910.109(i)]. The effectiveness of these regulations is borne out by the fact that in the past 45 years,

there has been *no known accidental detonation* of AN where a facility has been compliant with this OSHA standard.

Nevertheless, knowing that safety could be further enhanced, IME has urged OSHA to update their regulations dealing with AN. Specifically, these regulations should be upgraded to incorporate a number of safety provisions in the recently released National Fire Protection Association (NFPA) Code 400 and IME's AN Guidelines, including provisions against fighting fires involving AN, a prohibition on the use of wooden storage bins, and a requirement for the preparation of written emergency response plans and associated training. For this reason, IME supports the CSB's recommendation to OSHA that the agency update its regulations at 29 CFR 1910.109(i). We believe that these modifications to the current standard will help ensure that AN is properly and safely managed and that future accidents will be avoided.

Precisely because of the proven effectiveness of the OSHA regulations, IME disagrees with imposing additional regulations intended for highly hazardous chemicals on AN. OSHA's Process Safety Management standard (PSM) and EPA's Risk Management Plan program (RMP) were designed to reduce the risk of another Bhopal-like disaster. AN does not pose the type of threat that the extensive PSM or RMP requirements are intended to address. Adding another layer of complex regulations on top of existing regulations is unlikely to increase safety and would not likely lead to facilities to adopt safety standards and best practices different than those that already exist. We believe it would be a better use of an agency's limited resources to focus on improving OSHA's existing 1910.109(i) standards, compliance assistance, and enforcement initiatives that would capture outlier facilities.

Except for the recommendations to include AN under PSM and RMP, IME otherwise agrees with CSB's recommendations. However, we ask that the Board reconsider the finding that OSHA "inadvertently omitted" AN from the list of materials subject to PSM (Section 10.4b, Key Findings, Draft Board Vote Report). When the PSM rule was being developed, IME worked closely with OSHA to ensure that AN would continue to be regulated under 29 CFR 1910.109(i). A pre-proposal draft of the list of PSM-covered chemicals did, in fact, include AN, but IME believes that it was subsequently removed because OSHA determined that the manufacturing of blasting agents was not the type of process that PSM was intended to cover, and further, that 29 CFR 1910.109(i) was sufficiently comprehensive and protective.

IME and its member companies are dedicated to worker and public safety and support efforts to prevent tragedies that greatly impact families and communities, which is a mission shared by CSB and expressed in this report. IME would welcome any future opportunity to work with OSHA to improve its existing regulations on AN. Thank you for allowing us to provide these comments.

***Attachment:***

IME's Safety and Security Guidelines for Ammonium Nitrate (AN Guidelines) (2013)