



institute of makers of explosives

Strengthen OSHA Regulations Covering Ammonium Nitrate (AN)

Issue: After more than 45 years, should the regulations covering manufacture and storage of AN under OSHA rules found at 29 CFR 1910.109(i) be updated?

Background: After the 2013 tragedy of the West Fertilizer explosion and fire, later to be determined by the ATF to be intentionally set, IME worked with the Chemical Safety Board (CSB) to educate the CSB on industry practices as they investigated the matter. IME also worked with safety organizations and our industry partners to determine if there was room to improve the current regulations.

Since 1974, the manufacture and storage of AN has been regulated under OSHA rules found at 29 CFR 1910.109(i) that specifically address the unique properties of this material. There has been no known accidental detonation of AN where a facility has been compliant with this OSHA standard. In addition, AN is subject to a number of other ATF, EPA, DHS, and DOT safety and security regulations and advisories. The insensitivity of AN renders the material highly unlikely to mass-detonate during manufacturing, storage, and transportation. DOT acknowledges AN's insensitivity, classifying it as a Division 5.1 oxidizer and listing it as a "Table 2" not "Table 1" material. The "technical" grade of AN (TGAN) used in the explosives industry has the same chemical composition as the "fertilizer" grade of AN (FGAN) used in agriculture; only the density of the prill is different. Pure AN, in either form, is not self-reactive and does not pose a threat of an accidental release of energy or fumes unless subjected to substantial and sustained heat (e.g., fire) or shock from high explosives.

Discussion: EPA considered expanding the Risk Management Program (RMP) to cover AN, eventually deciding against it. OSHA has also determined in several prior rulemaking actions that AN-based blasting agents do not pose the type of threat that Process Safety Management (PSM) requirements are intended to address. In 2017, OSHA initiated a regulatory review to determine if additional chemicals - including AN - should be covered by PSM, however, the review ended when the Administration moved the rulemaking to long term action.

While these agencies conducted their reviews of AN, IME, the safety and security arm of the commercial explosives industry, developed and published Safety Library Publication Number 30 (SLP-30) describing the best practices used by the explosives industry to safely manage AN. SLP-30 can be found under publications at www.ime.org.

Recommendations: SLP-30 captures all relevant federal regulations and industry best practices in one document. IME continues to believe that existing regulations, if followed, are protective of workers and the public, with two major exceptions. OSHA's 29 CFR 1910.109(i) regulations should be updated: (1) to require noncombustible materials for bins and structures used to store AN; and, (2) to train emergency responders to evacuate at-risk populations when fire has engaged AN, not to attempt to fight such fires. The current regulations, as evidenced by a 45-year safety record of no accidental detonations, have proven effective for decades. By updating the regulations IME hopes to keep workers and the public safe for the next 45 years.