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HAZARDOUS PROPERTIES OF AMMONIUM NITRATE AND MODELING OF EXPLOSIONS USING TNT EQUIVALENCY

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Abstract

The paper presents a study on the hazards associated with solid ammonium nitrate (AN) storage and handling, in particular the hazard of explosion. Due to its flammable and explosive characteristics, AN is largely used as an explosive material in the mining industry. Some specific problems encountered in the risk estimation are related to the determination of the explosive power of the AN, which depends on several characteristics. The simulation results of AN explosion using different TNT equivalents show significant differences in the distances at which certain overpressure effects are expected, leading to specific problems in decision making. The scope of the paper is to find solutions and give recommendations for the use of TNT equivalents of AN in the risk assessment procedure to support Land-use Planning in case of AN storage and handling.

Key words: ammonium nitrate, hazards, safety distance, simulation, TNT equivalency

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