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ANALYSIS OF EXPLOSIVITY PARAMETERS AND ENVIRONMENTAL SAFETY FOR COMBUSTIBLE DUSTS

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Abstract

In industrial plants many types of combustible dusts are generated, processed, handled and stored. When ignited, they can burn rapidly and with a considerable explosion force, when mixed with air in proper proportions. This is the reason why adequate precautions have to be adopted, to ensure all equipment is appropriately protected so that the ignition likelihood of the explosive atmosphere is diminished.

Explosion preventing and protection precautions aim to stop explosion occurrence, by eliminating or avoiding the conditions leading to explosions. The paper presents methods of determining dust explosion characteristics and combustion as well as their importance for a proper development and selection of prevention and protection measures. Once known, the protection/prevention measures can be correlated with the safety characteristics. For explosion protection and prevention a series of minimum mandatory requirements have to be fulfilled, for a safe handling and processing of solid materials having fine particle dimensions, among which some are mentioned: knowing the characteristics influencing safety, control and monitoring dust releases in technological processes, installations design for migrating and accumulation of dusts, respectively implementing a rigorous cleaning program at workplaces.

Key words: combustible dusts, explosion protection, potentially explosive atmosphere, protective systems

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