

# **BLASTING AGENTS FOR USE IN FLAMMABLE ATMOSPHERES**

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Reference to specific products does not imply endorsement by the Bureau of Mines.

## **ABSTRACT**

As part of the Bureau of Mines research into the hazards associated with the mining and processing of oil shale, experimental mine tests have been conducted to evaluate preferred combinations of explosives and inerting materials to prevent ignition of oil shale dust and mixtures of oil shale dust and methane.

The relative incendivity of several blasting agents was evaluated in the Bruceton Experimental Mine (BEM). The minimum charge weights resulting in the ignition of predispersed oil shale dust clouds were measured for each of the explosives. Several stemming materials were evaluated in the BEM for their effectiveness in preventing the ignition of near stoichiometric methane-air mixtures.

Results are encouraging and indicate that there is merit in pursuing explosive composition as a means of reducing ignition probability of oil shale and sulfide dust clouds generated during normal blasting operations.

The proper selection of explosives and stemming materials should significantly reduce the probability of secondary dust explosions in oil shale and sulfide ore mining.