

EXPERIMENTAL CHARACTERIZATION AND MODELING OF AN INSENSITIVE ENHANCED BLAST EXPLOSIVE KS23

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ABSTRACT

A family of plastic bonded explosives has been developed by MBDA-TDW during the last decades, all of them in regular service today. During the last fifteen years the interest in blast effects, especially internal blast, has led to extensive studies of enhanced blast devices. An offspring of these activities has been the development of a new insensitive enhanced blast explosive named KS23. It is a plastic bonded composite explosive with a HTPB based binder system containing RDX and fine aluminum powder (RDX/Al/Binder 58/27/15). The crucial issue with aluminized explosives is to guarantee a high afterburn rate of the aluminum particles. This is necessary to release the energy within a time frame that is relevant for air blast or internal blast effects. The present paper reports the results of experimental and theoretical characterization of this explosive with emphasis on internal blast.