A METHOD TO ESTIMATE HE DETONABILITY BY DETONATION TURN ANGLE CRITERION

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Regulation of HE detonation characteristics, such as detonation velocity, relative flying capability, shockwave sensitivity, etc., is a key aspect of RFNC – VNIITF gas dynamic activities.

In the work, a method is suggested to determine HE detonability by detonation turn angle, Θ , which is the angle between the axis of a loaded HE sample and detonation direction from the loaded sample flange center at which it was initiated up to the maximum turn of the detonation wave upon its arrival at the loaded sample surface.

High-speed streak photography and pulsed radiography were used to obtain detonation turn angles for a wide range of high-explosives involving plastic and thermal plastic, high-sensitive and insensitive HEs. HE classification by detonability is suggested based on the determined criterion Θ .