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Development of the Floret Test for Screening the Initiability of **Explosive Materials** MARK WRIGHT — The Floret test was developed as a small scale screening experiment to characterise the initiability and divergence of novel explosive train materials; providing a route to undertake initial optimisation of explosive formulations. The test utilises an explosively driven, aluminium flyer plate to impact a 12.6 mm diameter, by 4 mm long explosive sample; the output from which is characterised by profiling the dent imparted into an adjacent copper witness block. The aluminium flyer plate characteristics are varied in order to assess the initiability of the samples, yielding an estimate of the initiation spot size for the explosive. Additionally, the effect of density on initiability can be characterised to optimise the sample properties to those that best fit the programme requirements. A summary of the results on the use of the Floret test to optimise the formulation and density of booster materials will be reported. Furthermore, work undertaken to characterise and tune the aluminium flyer plate will be presented, including velocimetry measurements and studies to widen the initiation parameters of the test. These results have improved understanding of the initiation characteristics of the Floret test and, using a case study of optimising the test to study HMX based materials, provided insight into the initiation behaviour of explosive materials to flyer plate impacts.

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