SKID TEST EVALUATION OF PBX 9407

J. H. Van Velkinburgh

DEVELOPMENT DIVISION

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Normal Process Development
Endeavor No. 216

MASTER

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ABSTRACT

Skid testing was done on PBX 9407 (nominal composition 94/6 RDX/Exon 461 by weight) to determine its sensitivity. Sensitivity of PBX 9407 appears to be similar to that of LX-04-1.

DISCUSSION

Skid testing was performed on PBX 9407 as a requirement in the request for approval of contact machining of this material at Pantex Plant. Prior to the present skid test series, drop hammer test results had indicated an H_{50} of 26 ± 2 cm on Type 12A tools. In general, values below 25 cm usually indicate high relative sensitivity to impact. Values of 25 - 70 cm indicate a material of moderate sensitivity. Since this material was rather borderline it was decided to verify the drop hammer results by large scale skid testing. Testing was done using the reduced charge skid test technique(1). Drop heights, impact angles and reactive events observed are tabulated in Table I. Of particular note is the fact that for all tests which produced no reaction there was visual evidence of a slight amount of melting at the contact spot. It appeared that the amount of melting increased with increasing drop height. PBX 9407 behaves very much like LX-04-1 with respect to its response to the skid test.

(1) J. H. Van Velkinburgh, Reduced Charge Skid Test, MHSMP-75-20Q (January - March 1975).

Table I. PBX 9407 Skid Test Results

14° Impact Angle		45° Impact Angle	
Height (m)	Reaction	Height (m)	Reaction
0.27	0,0,0	0.76	0
0.38	0,0,0	1.07	0
0.53	0,0,0	1.52	0
0.76	3		

NOTE: On two of the 14°/0.53 m tests there appeared to be a very slight indication of a scorch

On all tests wherein no reaction was observed there was a visual indication of a slight amount of melting at the contact spot