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WARNING: Since we have no control over equipment or data which may be used with this program, no responsibility is implied or assumed for results obtained through its use. Input data and results may be incorrect or wrong. Therefore the use of this data for loading ammunition can cause serious injury to personnel and material. The computer-results had to be checked against data available in current loading manuals.

LOT-TO-LOT VARIATIONS OF POWDERS, PRIMER SUBSTITUTION AND COMPONENT CHANGE OFTEN RAISE PRESSURES TO UNSAFE LEVELS. THE USER MUST ASSUME THE ENTIRE RISK OF USING THIS DATA FOR LOADING PURPOSES.

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User Data:	Date:8-Apr-2015	Time:22:12:14	File: xpert 6mm muss 68 gr.dat	
Cartridge / Caliber	6 mm Musgrave	Bullet	.243, 68, XPERT Bullet	
Maximum Average Pressure, allowed	49313 psi.	3400 bar (Piezo SABS)	with flatbase	
Groove Caliber	0.243 in.	6.17 mm	Bullet Weight	68.0 gr. 4.41 gm
Case Capacity, overflow	47.01 gr. H2O	3.052 cm ³	Bullet Length	1.031 in. 26.2 mm
Case Length	2.192 in.	55.68 mm	Bullet Seating Depth	0.428 in. 10.87 mm
Cartridge O.A. Length	2.795 in.	70.99 mm	Barrel/Tube Length	24.0 in. 609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.04573 in. ² 0.295 cm ²
Propellant type	Somchem S365			
Charge Weight	39.0 gr.	2.527 gm	Load Density	234.4 gr./in. ³ 0.927 gm/cm ³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	55978 J/in. ³ 3416 J/cm ³
Propellant Solid Density	404.63 gr./in. ³	1.6 gm/cm ³	Used Ratio of Specific Heats cp/cv	1.239
Burning Rate Factor Ba	0.44 1/s		Weighting Factor	0.5
Burning Function Limit Z1	0.605		Prog.-/ Degressivity Factor a0	1.715
Factor b	2.271		Bulk Density	231.4 gr./in. ³ 0.915 gm/cm ³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.428 in.	10.87 mm	Capacity Displaced by Seated Bullet	0.0199 in. ³	0.326 cm ³
Useable Case Capacity	0.1664 in. ³	2.726 cm ³	Bullet Travel at Muzzle Exit	22.24 in.	564.79 mm
Loading Ratio("Density") / Filling	101.3 % = compressed		Charge Fraction Burnt at Shot Start	1.29 %	

Predicted Data:

Maximum Chamber Pressure	37465 psi.	2583 bar	Bullet Travel at Pmax	2.12 in.	53.8 mm
at Muzzle Exit:					
Bullet Velocity	3153 fps.	961.0 m/s	Pressure at Muzzle	9322 psi.	643 bar
Bullet Energy	1501 ft.lbs.	2035 Joule	Bullet Barrel Time	1.167 ms	
Propellant Burnt	94.2 %		Ballistic Efficiency	21.9 %	

Check Loading Manuals for Safe Minimum Charge Weight to Avoid Hazardous Ignition Conditions like Secondary Explosion Effects !
 Real maximum (peak) of pressure is reached while bullet moves within barrel.
 End of combustion occurs after the bullet's base passes muzzle.

