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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:22:59:59	File: xpert 6.5 x 57mm mauser 98gr.dat	
Cartridge / Caliber	6.5 x 57 mm Mauser	Bullet	.264, 98, XPERT	
Maximum Average Pressure, allowed	56565 psi.	3900 bar (Piezo CIP)	with flatbase	
Groove Caliber	0.264 in.	6.71 mm	Bullet Weight	98.0 gr. 6.35 gm
Case Capacity, overflow	59.0 gr. H2O	3.831 cm ³	Bullet Length	1.240 in. 31.5 mm
Case Length	2.232 in.	56.69 mm	Bullet Seating Depth	0.559 in. 14.19 mm
Cartridge O.A. Length	2.913 in.	74.0 mm	Barrel/Tube Length	24.0 in. 609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.05351 in. ² 0.3452 cm ²
Propellant type	Somchem S365			
Charge Weight	46.0 gr.	2.981 gm	Load Density	226.3 gr./in. ³ 0.895 gm/cm ³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	54077 J/in. ³ 3300 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	0.559 in.	14.19 mm	Capacity Displaced by Seated Bullet	0.0306 in. ³	0.502 cm ³
Useable Case Capacity	0.2031 in. ³	3.329 cm ³	Bullet Travel at Muzzle Exit	22.33 in.	567.1 mm
Loading Ratio("Density") / Filling	97.9 %		Charge Fraction Burnt at Shot Start	1.40 %	

Predicted Data:

Maximum Chamber Pressure	42137 psi.	2905 bar	Bullet Travel at Pmax	2.51 in.	63.7 mm
at Muzzle Exit:					
Bullet Velocity	3050 fps.	929.6 m/s	Pressure at Muzzle	9980 psi.	688 bar
Bullet Energy	2024 ft.lbs.	2744 Joule	Bullet Barrel Time	1.209 ms	
Propellant Burnt	98.9 %		Ballistic Efficiency	25.0 %	

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.

