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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:23:07:01

File: xpert 270 win 105gr.dat

**Cartridge / Caliber**

.270 Win. (CIP)

**Bullet**

.277, 105 gr, XPERT

Maximum Average Pressure, allowed	62366 psi.	4300 bar (Piezo CIP)	with flatbase	
Groove Caliber	0.277 in.	7.04 mm	Bullet Weight	105.0 gr. 6.8 gm
Case Capacity, overflow	67.0 gr. H2O	4.35 cm <sup>3</sup>	Bullet Length	1.189 in. 30.2 mm
Case Length	2.540 in.	64.52 mm	Bullet Seating Depth	0.540 in. 13.72 mm
Cartridge O.A. Length	3.189 in.	81.0 mm	Barrel/Tube Length	24.0 in. 609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.05971 in. <sup>2</sup> 0.3852 cm <sup>2</sup>

**Propellant type**

Somchem S365

Charge Weight	55.0 gr.	3.564 gm	Load Density	236.2 gr./in. <sup>3</sup>	0.934 gm/cm <sup>3</sup>
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	56404 J/in. <sup>3</sup>	3442 J/cm <sup>3</sup>
Propellant Solid Density	404.63 gr./in. <sup>3</sup>	1.6 gm/cm <sup>3</sup>	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. <sup>3</sup>	0.915 gm/cm <sup>3</sup>

**Calculated and Estimated Data:**

Bullet Shank Seating Depth	0.54 in.	13.72 mm	Capacity Displaced by Seated Bullet	0.0326 in. <sup>3</sup>	0.534 cm <sup>3</sup>
Useable Case Capacity	0.2329 in. <sup>3</sup>	3.816 cm <sup>3</sup>	Bullet Travel at Muzzle Exit	22.0 in.	558.8 mm
Loading Ratio("Density") / Filling	102.1 % = compressed		Charge Fraction Burnt at Shot Start	1.26 %	

**Predicted Data:**

Maximum Chamber Pressure	48459 psi.	3341 bar	Bullet Travel at Pmax	2.52 in.	63.9 mm
<b>at Muzzle Exit:</b>					
Bullet Velocity	3241 fps.	987.8 m/s	Pressure at Muzzle	10576 psi.	729 bar
Bullet Energy	2449 ft.lbs.	3320 Joule	Bullet Barrel Time	1.110 ms	
Propellant Burnt	99.6 %		Ballistic Efficiency	25.3 %	

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.

