

**QuickLOAD® V.3.6 © Copyright 1987-2010 - H.Broemel, Babenhausen, Germany**

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.**

QuickLOAD® V.3.6.02 #130542, © Copyright 1987-2010 - H.Broemel, Babenhausen, Germany

|                                   |                             |                         |                                       |                                                     |
|-----------------------------------|-----------------------------|-------------------------|---------------------------------------|-----------------------------------------------------|
| <b>User Data:</b>                 | <b>Date:8-Apr-2015</b>      | <b>Time:21:33:22</b>    | <b>File: xpert 204 ruger 33gr.dat</b> |                                                     |
| <b>Cartridge / Caliber</b>        | <b>.204 Ruger</b>           | <b>Bullet</b>           | <b>.204, 33gr, XPERT TM</b>           |                                                     |
| Maximum Average Pressure, allowed | 58740 psi.                  | 4050 bar (Piezo CIP)    | with flatbase                         |                                                     |
| Groove Caliber                    | 0.204 in.                   | 5.18 mm                 | Bullet Weight                         | 33.0 gr. 2.14 gm                                    |
| Case Capacity, overflow           | 30.96 gr. H2O               | 2.01 cm <sup>3</sup>    | Bullet Length                         | 0.697 in. 17.7 mm                                   |
| Case Length                       | 1.843 in.                   | 46.81 mm                | Bullet Seating Depth                  | 0.335 in. 8.51 mm                                   |
| Cartridge O.A. Length             | 2.205 in.                   | 56.01 mm                | Barrel/Tube Length                    | 24.0 in. 609.6 mm                                   |
| Shot Start / Init Pressure        | 3625 psi.                   | 249.94 bar              | Cross Section Area of Bore            | 0.03216 in. <sup>2</sup> 0.2075 cm <sup>2</sup>     |
| <b>Propellant type</b>            | <b>Somchem S321</b>         |                         |                                       |                                                     |
| Charge Weight                     | 26.0 gr.                    | 1.685 gm                | Load Density                          | 232.9 gr./in. <sup>3</sup> 0.921 gm/cm <sup>3</sup> |
| Heat of Explosion, Potential      | 259.8 J/gr.                 | 4010 J/gm               | Energy Density of Charge              | 60501 J/in. <sup>3</sup> 3692 J/cm <sup>3</sup>     |
| Propellant Solid Density          | 409.68 gr./in. <sup>3</sup> | 1.62 gm/cm <sup>3</sup> | Used Ratio of Specific Heats cp/cv    | 1.221                                               |
| Burning Rate Factor Ba            | 0.56 1/s                    |                         | Weighting Factor                      | 0.6                                                 |
| Burning Function Limit Z1         | 0.39                        |                         | Prog.-/ Degressivity Factor a0        | 1.649                                               |
| Factor b                          | 1.641                       |                         | Bulk Density                          | 250.4 gr./in. <sup>3</sup> 0.990 gm/cm <sup>3</sup> |

**Calculated and Estimated Data:**

|                                    |                         |                      |                                     |                        |                      |
|------------------------------------|-------------------------|----------------------|-------------------------------------|------------------------|----------------------|
| Bullet Shank Seating Depth         | 0.335 in.               | 8.51 mm              | Capacity Displaced by Seated Bullet | 0.011 in. <sup>3</sup> | 0.18 cm <sup>3</sup> |
| Useable Case Capacity              | 0.1117 in. <sup>3</sup> | 1.83 cm <sup>3</sup> | Bullet Travel at Muzzle Exit        | 22.49 in.              | 571.3 mm             |
| Loading Ratio("Density") / Filling | 93.0 %                  |                      | Charge Fraction Burnt at Shot Start | 1.32 %                 |                      |

**Predicted Data:**

|                          |             |            |                       |           |         |
|--------------------------|-------------|------------|-----------------------|-----------|---------|
| Maximum Chamber Pressure | 45026 psi.  | 3104 bar   | Bullet Travel at Pmax | 1.98 in.  | 50.2 mm |
| <b>at Muzzle Exit:</b>   |             |            |                       |           |         |
| Bullet Velocity          | 3611 fps.   | 1100.5 m/s | Pressure at Muzzle    | 7511 psi. | 518 bar |
| Bullet Energy            | 955 ft.lbs. | 1295 Joule | Bullet Barrel Time    | 0.979 ms  |         |
| Propellant Burnt         | 92.8 %      |            | Ballistic Efficiency  | 19.2 %    |         |

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.

