

Tables taken from “Chemical Analysis of Firearms, Ammunition, and Gunshot Residue”
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Table 10.1 Single-Based Propellants (% composition)

Nitrocellulose (NC)	89.0	99.0	97.7	90.0	79.0	85.0	87.0	96.25	94.25	94.0	98.0	99.4	92.4
Barium nitrate	6.0						6.0						
Potassium nitrate	3.0						2.0				.25		
Starch	0.75												
Paraffin oil							4.0						
Diphenylamine	1.0	1.0	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.6	0.6
Dinitrotoluene				8.0		10.0							6.5
Methyl centralite								2.0	2.0	1.75			
Dibutyl phthalate				1.0		4.0			2.0	1.75			
Glyceryl triacetate						5.0							
Tin			0.75							0.8			
Graphite					0.2			With NC	With NC		0.5		0.5
Potassium sulfate			0.75					0.75	0.75	0.75			
Dye (aurine)	0.25												
Trinitrotoluene					15.0								

Table 10.2 Double-Based Propellants (% composition)

Nitrocellulose	77.45	52.15	56.50	59.65	85.45	59.40	58.00	76.5	89.4	79.25	51.5
Nitroglycerine	19.50	43.00	28.00	36.00	9.00	36.00	40.00	21.5	8.0	15.00	43.00
Diethylphthalate		3.00								3.50	3.25
Dibutylphthalate				0.40	0.40	0.40					
Diphenylphthalate					1.10						
Dinitrotoluene			11.00	0.35	0.65	0.55					
Potassium sulfate		1.25	1.50*						0.8		1.3
Potassium nitrate	0.75										
Ethyl centralite	0.60	0.60	4.50					2.0	1.0		1.00
Graphite	0.30			1.05	0.25	1.00	0.60			0.60	0.20*
Barium nitrate	1.40										
Candelilla wax			0.08*								
Methyl cellulose			0.50*								
Sodium sulfate				0.10	0.10	0.10	0.10			0.10	
Calcium carbonate				0.40	0.40	0.40	0.10			0.10	
Diphenylamine				1.00	1.00	1.00	0.50			0.50	
Water				0.50	0.90	0.55	0.40			0.60	
Methyl centralite									5.0*		
Tin									0.8		

* Added to basic composition.