

-- EXAMPLES OF SEVERAL PROPELLANTS GRADES OF NITROCELLULOSE --

Product : **NITROCELLULOSE, GRADE A, TYPE I**
wetted with 30% water

Property / Characteristic	Unit	Limit or Range	Method of Determination
Raw Material	-	Woodpulp Cellulose or Cotton Linters	MIL-DTL-244C w/ Amendment 1 (20.05.2014)
Nitrogen content	%	12.50 - 12.70	
Viscosity	seconds	9 - 15	
Moisture	%	27 - 32	
Fineness	ml / 10g dry	80 - 110	
Acetone insolubles	%	0.4 max.	
Bergmann-Junk stability test at 132°C	ml NO / g	2.5 max.	

Product : **NITROCELLULOSE, GRADE B, TYPE I**
wetted with 30% water

Property / Characteristic	Unit	Limit or Range	Method of Determination
Raw Material	-	Woodpulp Cellulose or Cotton Linters	MIL-DTL-244C w/ Amendment 1 (20.05.2014)
Nitrogen content	%	13.35 min.	
Viscosity	seconds	9 - 15	
Moisture	%	27 - 32	
Fineness	ml / 10g dry	80 - 110	
Acetone insolubles	%	0.4 max.	
Bergmann-Junk stability test at 132°C	ml NO / g	2.5 max.	

Product : **NITROCELLULOSE, GRADE C, TYPE I**
wetted with 30% water

Property / Characteristic	Unit	Limit or Range	Method of Determination
Raw Material	-	Woodpulp Cellulose or Cotton Linters	MIL-DTL-244C w/ Amendment 1 (20.05.2014)
Nitrogen content - Grade C blend	%	13.10 - 13.20	
-Nitrogen content of Gun Cotton	%	13.35 min.	
-Nitrogen content of Pyrocellulose	%	12.65 max.	
Viscosity	seconds	9 - 15	
Moisture	%	27 - 32	
Fineness	ml / 10g dry	80 - 110	
Acetone insolubles	%	0.4 max.	
Bergmann-Junk stability test at 132°C	ml NO / g	2.5 max.	

Product : **NITROCELLULOSE, GRADE C, TYPE I**
wetted with 30% water

Property / Characteristic	Unit	Limit or Range	Method of Determination
Raw material	-	Woodpulp Cellulose or Cotton Linters	-
Nitrogen content of Grade C, Type I	%	13.10 - 13.20	MIL-DTL-244C w/ Amendment 1 (20.05.2014)
- Nitrogen content of Gun cotton	%	13.35 min.	
- Nitrogen content of Pyrocellulose	%	12.65 max.	
Acetone insolubles	%	0.4 max.	
Bergmann- Junk stability test at 132°C	ml NO / g	2.5 max.	
Moisture	%	27 -32	
Fineness	ml / 10g dry	80 - 110	
Ether- Alcohol solubility	%	30 – 40	Internal API
Viscosity (2% solution in Acetone 99%)	mPa. s	30 - 50	