



Nitrocellulose (NC)

Propellant-Grade

Nitrocellulose (cellulose nitrate) manufactured from purified cellulose (typically cotton linters) nitrated to propellant-grade nitrogen levels. Supplied water-wet or alcohol-wet to ensure safe handling and transportation. Primary use is as the energetic binder/base in single-base and composite propellant systems and as an intermediate in energetic formulations. (General background on propellant NC use and viscosity methods follows NATO STANAG/AOP-4178 practice.

PERFORMANCE SPECS

Nitrogen Content (wt%)	12.6 ± 0.15; 13.2–13.4
Viscosity Class	AOP-4178
Fineness/Fiber length	Determined prior to wetting.
Nitrogen Content wt% (dry)	12.45–12.75 (Grade A) or 13.20–13.40 (Grade B)
Volatiles (wetting agent)	≥25 (water-wet or alcohol-wet, as ordered)
Ash wt% (dry)	≤0.20
Acidity wt% (dry)	≤0.02
Alcohol Content (if alcohol-wet)	Per order (≥25)
Viscosity	Grade-dependent (to order)
PH	Neutral to slightly acidic

COMPLIANCE / CLASSIFICATION

Military specification: MIL-DTL-244

NATO references: STANAG/AOP-4178 & AOP-7

UN / Transport (49 CFR / ADR / IMDG / IATA):

- UN 2555 – Nitrocellulose with water, ≥25% water by mass; Class 4.1.
- UN 2556 – Nitrocellulose with alcohol, ≥25% alcohol by mass and ≤12.6% N (dry); Class 4.1, PG II, ERG 113.
- UN 2557 – Nitrocellulose (mixture), ≤12.6% N (dry), with/without plasticizer/pigment; Class 4.1.

QUALITY ASSURANCE

- Conformance: Manufactured and accepted per MIL-DTL-244 requirements (grades/types/classes; examination & test matrix).
- NC-specific tests: Nitrogen %, ash, acidity/alkalinity, volatiles, insolubles, fineness, viscosity (MIL method).
- Stability / Surveillance: Tested and reported per STANAG/AOP-4178 protocols where applicable; material qualification per AOP-7.
- Lotting: Unique lot IDs; retain samples and QA records per contract.



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