



Standard Specification for Natural Rubber (NR) Technical Grades¹

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1. Scope

1.1 This specification covers minimum physical and chemical quality requirements or specifications for five grades of raw natural rubber.

2. Referenced Documents

2.1 ASTM Standards:

D 1278 Test Methods for Rubber from Natural Sources—Chemical Analysis²

D 1485 Test Methods for Rubber from Natural Sources—Sampling and Sample Preparation²

D 1646 Test Methods for Rubber—Viscosity, Stress Relaxation, and Pre-Vulcanization Characteristics (Mooney Viscometer)²

D 3157 Test Method for Rubber from Natural Sources—Color²

D 3194 Test Method for Rubber from Natural Sources—Plasticity Retention Index (PRI)²

D 3533 Test Method for Rubber—Nitrogen Content²

3. Detailed Requirements for Grades

3.1 The rubber shall conform to the requirements in Table 1.

3.2 Any rubber not meeting all the requirements for one of the five grades in Table 1 cannot be considered a technically graded rubber.

4. Significance and Use

4.1 The general end-use quality of manufactured rubber

TABLE 1 Specifications For Technically Graded Natural Rubber

Property	Rubber Grade ^A				
	Grade L	Grade CV ^B	Grade 5	Grade 10	Grade 20
Dirt, retained on 45 μm sieve, % max	0.050	0.050	0.050	0.100	0.200
Ash, % max	0.60	0.60	0.60	0.75	1.00
Volatile matter, % max	0.80	0.80	0.80	0.80	0.80
Nitrogen, % max	0.60	0.60	0.60	0.60	0.60
Initial plasticity, min	30	...	30	30	30
Plasticity retention index, min	60	60	60	50	40
Color index, max	6.0	...	...	...	...
Mooney viscosity	...	60±5	...	...	...

^A Skim rubber is not permitted in any grade, and Grades L, CV, and 5 must be produced from intentionally coagulated latex.

^B Other Mooney ranges of Grade CV are available, CV- 50 ± 5 and CV- 70 ± 5. CV without suffix is the 60 ± 5 as shown in the table.

products depends on the physical and chemical properties of the rubber.

5. Classification

5.1 *Types*—Table 1 covers the physical and chemical requirements for five grades of natural rubber: Grades L, CV, 5, 10, and 20.

6. Sampling

6.1 The sampling and sample preparation shall be in accordance with Test Methods D 1485.

7. Test Methods

7.1 Determine the properties enumerated in this specification in accordance with Test Methods D 1278, D 3533, D 3194, D 3157, and D 1646.

8. Keywords

8.1 natural rubber (NR); technical grade

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² *Annual Book of ASTM Standards*, Vol 09.01.