

KES

Evaluation Standard of
Solution Polymerization BR
(Poly Butadiene)

KES T – L444

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1. Scope of Application

This standard shall be applied to standard composition chemicals, composition prescription, mixing order and testing method for evaluation and production management of butadiene rubber (BR) manufactured according to solution vulcanization.

2. Quoted ASTM

- | | |
|--------|---|
| D 88 | Shaybolt viscosity test |
| D 412 | Tense characteristics test of rubber |
| D 1485 | Rubber test according to natural or composition <ul style="list-style-type: none">- Sampling and preparation |
| D 1646 | Rubber test according to natural or composition <ul style="list-style-type: none">- Viscosity and vulcanizing characteristics (Pattern viscous meter) |
| D2084 | Measurement of rubber composition <ul style="list-style-type: none">– Vulcanizing characteristics according to oscillating disk cure meter |
| D 2161 | Conversion from shaybolt · universal viscosity or shaybolt prol viscosity of dynamic viscosity |
| D 2501 | Viscosity of petroleum-series – calculation of specific gravity constant |
| D 3182 | Recommended method about standard composition equipment and order used in mixing of rubber composition and vulcanized rubber specimen |

3. Standard Test Composition Prescription

Standard composition prescription

Composition	NBR SRM } No	Weight (Additional value)
Poly butadiene (BR)	—	100.00
Zinc oxide	370	3.00
Sulfur	371	1.50
Stearine acid	372	2.00
Oil 퍼니스 black	378	60.00
Vulcanization promoting chemical TBBS	384	0.90
ASTM type 103 petroleum-series	—	15.00
Summation		182.40
Roll composition		4.0
Batch petter International mixer - composition		7.13

(1) It can obtain a little different result but it may be good to use industry reference black used commonly with NBS 378 replaced.

(2) N-tert-butyl-2-benzothiazole Sulf enamide

(3) Viscosity shall be $16.8 \pm 1.2 \text{ mm}^2 / \text{S}$ at 100°C according to ASTM D 88 and D 2161.

Viscosity – Specific gravity constant shall be 0.889 ± 0.002 according to ASTM D 2501.

Can get it from Sun Oil Company in 1 gal and 5 gal units.

(4) Weigh rubber and carbon black with precision of 1 g, vulcanization promoting chemical with precision of 0.02 g and all other composition with precision of 0.1 g.

4. Preparation of Sample

Testing sample shall be collected and prepared according to ASTM D 1485.

5. Mixing Order

5.1 General mixing order shall refer ASTM D 3182 as recommended method.