National Bureau of Standards

Certificate

Standard Reference Material 1495

Isobutylene-Isoprene (Butyl) Rubber

(Low Mooney Viscosity Number)

This Standard Reference Material consists of a solution polymerized isoprene-isobutylene copolymer rubber containing nominally 2% isoprene by weight. It is to be used in checking the performance of Mooney Viscometers when applied to rubber and rubber-like materials.

Bales of the dried rubber weighing approximately 34 kg were wrapped in polyethylene film and packaged in cardboard cartons. One thousand gram samples were taken at the start and during the baling of each fifth bale of rubber. Two measurements of the Mooney Viscosity Number were made on each sample at both 100° and 125° C according to the procedures described in ASTM Method D1646-74. Both ML 1+4 and ML 1+8 values of the Mooney Viscosity Number were recorded at each temperature.

Temperature	Mooney Viscosity (ML1 + 4)*	Mooney Viscosity (ML1 + 8)**	Standard Deviation***	Range of Measured Values
100 °C	56.3		0.42	55.0 - 57.0
100		53.0	.31	52.5 - 53.7
125	40.4		.62	39.0 - 41.7
125		37.3	.60	36.2 - 38.3

*ML1 + 4 indicates that a large rotor was used; the sample was warmed in the viscometer for one minute before starting the motor; and the readings were taken 4 minutes after starting the motor.

**ML1 + 8 indicates that a large rotor was used; the sample was warmed in the viscometer for one minute before starting the motor; and the readings were taken 8 minutes after starting the motor.

***The standard deviation (based on 60 measurements) expresses the variation to be expected by a user and represents the combined effects of method imprecision and material variability.

This lot of rubber was evaluated in the Center for Materials Science, Polymer Science and Standards Division, by G. W. Bullman and G. B. McKenna.

The technical and support aspects involved in the certification and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by R. K. Kirby.

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George A. Uriano, Chief
Office of Standard Reference Materials