

KES

Testing Methods for Synthetic Rubber SBR

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1. Scope of application

This standard shall be applied to the testing method of synthetic rubber SBR (Styrene series, Butadiene synthetic rubber) that is manufactured by polymerization of oil.

2. Testing items and numerical arrangement of test result

Follow the EIS Z 8401 (Numerical conversion method) for testing items and numerical arrangement of test result, and this is shown in table 1.

Table 1

Testing item			Unit	Number below decimal point of test result
Chemical test	Volatile matter		%	2 less than decimal point
	Ash		%	“
	Organic acid		%	“
	Soap		%	“
	Amount of synthetic styrene		%	1 less than decimal point
	Stabilizer		%	“
Physical test	Mooney viscosity		ML ₁₊₄ (100°C)	Integer
	Tensile test	Tensile strength	Kg f / cm ² {MPa}	Integer
		Elongation	%	Two significant figures
		300% tensile stress	Kg f / cm ² {MPa}	Integer

3. Picking method of sample

Pick sample in the lot with products of uniform quality or equivalent one. Remove alien substance attached on the surface. Keep the sample in a sealed container before testing. However, the lot, from which the sample is picked, and number of sample are determined under agreement between the people in charge.

4. Chemical test method

4.1 Volatile matter

Use wheat oven method or heating roll method for measuring volatile matter. However, record the using method in test result.

(1) Wheat oven method

Pick about 250g of sample, set temperature of a roll surface about 30°C and set gap between rolls 0.20±0.05mm. Sample is thin sheet after it passes through adjusted rolls. Pick two about 50 g samples randomly, and measure exactly to the 0.01 g. Hang them in an air circulating drier which is kept at 105±1°C. After heating and drying them for an hour, leave them in a desiccator for cooling. Measure the weight again. Calculate amount of volatile matter from the following equation. Then, find mean and take it as test result.

$$V_0 = \frac{S - B_0}{S} \times 100$$

Where, V_0 : Volatile matter

S : Weight of sheet (g)

B_0 : Weight of sample after drying (g)

(2) Heating rolls method

Pick about 450g of sample and measure it to 0.1 g. Set temperature of testing roll surface about 100±5°C and set gap between rolls 0.20±0.05mm.

Make sample pass through the rolls two times or more. Measure exactly the weight to 0.1 g. Make sample pass through the rolls two times or more again. In addition, measure the weight of sample. If the difference of weight is less than 0.1 g, consider the sample dry.

If the difference is more than 0.1 g, make sample pass through the rolls until it is less than 0.1 g. Calculate amount of volatile matter from the following equation.

$$V_R = \frac{S - W_R}{S} \times 100$$