

kuraray



**Advantages of Kuraray
Polyols in Foam Applications**



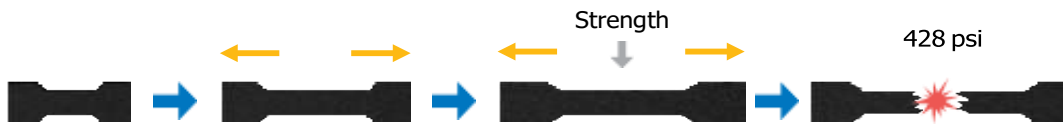


Test 1

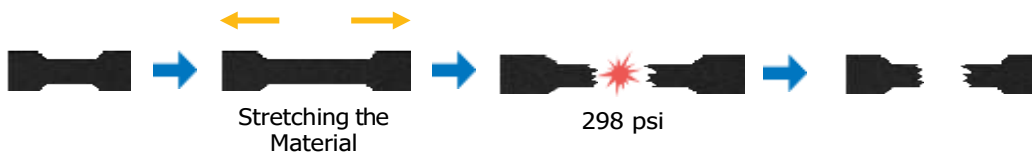
Tensile Strength at Break

Tensile strength is the resistance of a material to breaking under tension. The tensile strength of a material is the maximum amount of tensile stress that it can take before failure, for example breaking.

Foam made with Kuraray Polyol



Common Foam Material



Results

The Kuraray sample's tensile strength is 1.4 times stronger than the sample made from common materials.

Tensile Strength at Break:

Kuraray: 428 psi
Common: 298 psi

Test 2

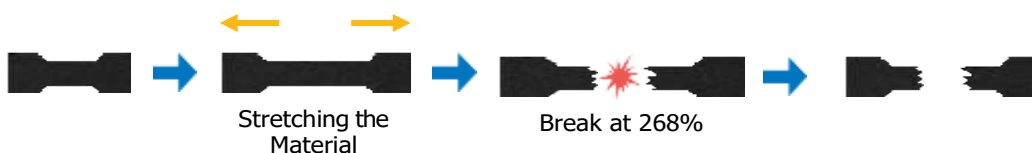
Tensile Elongation at Break

Elongation at Break is the ratio between increased length and initial length after breakage of the tested material.

Foam made with Kuraray Polyol



Common Foam Material



Results

The elongation of the foam made with Kuraray Polyols is longer than that of foam made with common materials. Tensile elongation is improved when using Kuraray Polyols due to the flexibility of the foam.

Tensile Elongation at Break:

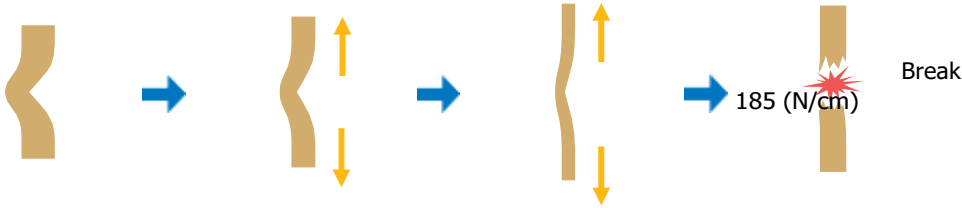
Kuraray: 373% of the original material's length
Common: 268% of the original material's length

Test 3

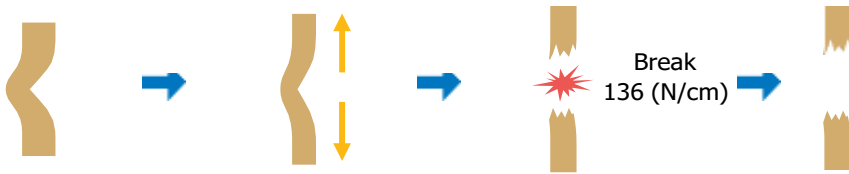
Tear Strength

Tear Strength is a measure of how well a material can withstand the effects of tearing.

Foam made with Kuraray Polyol



Common Foam Material



Results

The tear strength of the foam made with Kuraray Polyols is greater than that of foam made with common materials. Kuraray Polyols withstand the power of force better than other common materials used.

Tear Strength at Break:

Kuraray: 185 (N/cm)

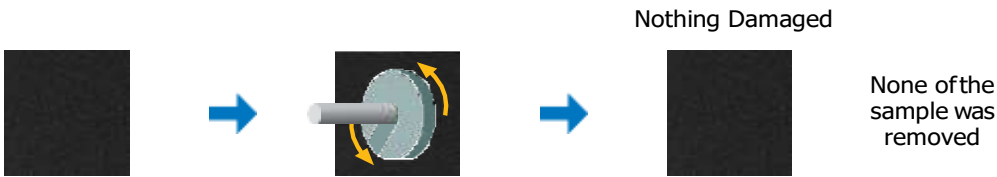
Common: 136 (N/cm)

Test 4

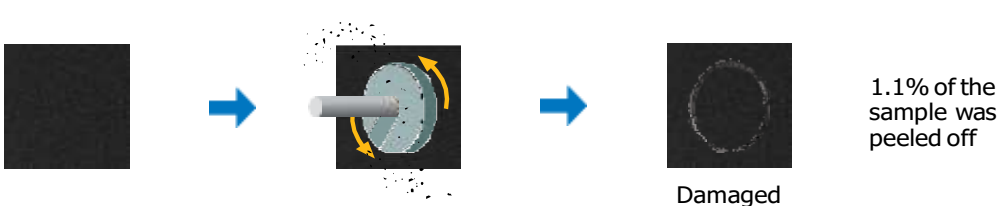
Abrasion Resistance

Abrasion resistance is the ability of a material to resist surface wear caused by flat rubbing contact with another material.

Foam made with Kuraray Polyol



Common Foam Material



Results

The abrasion resistance of the foam made with Kuraray Polyols is high compared to the foam made with common materials. Kuraray Polyols withstand the power of abrasion better than other common materials used.

Abrasion Resistance:

Kuraray: Loss of mass not observed

Common: 370 mg loss of mass observed

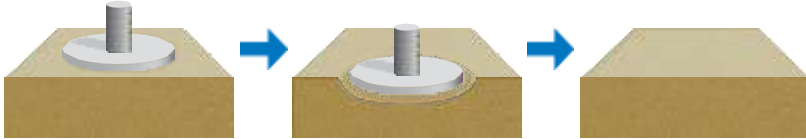


Test 5

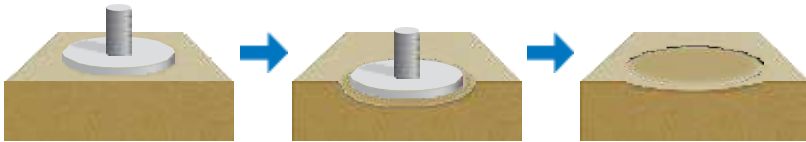
Compression set

Compression set is expressed as a percentage of the original thickness (50°C, 95%RH, 22hrs, 25% deflection).

Foam made with Kuraray Polyol



Common Foam Material



Results

Compression set of the foam made with Kuraray Polyols is low compared to the foam made with common materials.

Compression set % (wet aged condition)

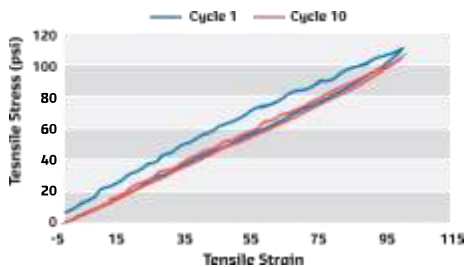
Kuraray Polyol: 11 (0.2x lower)
 Common PPG: 14
 Blend of above: 7 (0.5x lower)

Test 6

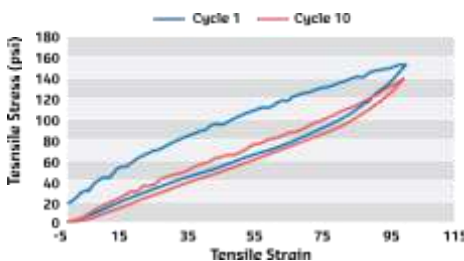
Hysteresis

Measurement of a foam's ability to maintain original support characteristics after flexing.

Kuraray Polyol



Common PPG



Results

Current research indicates that hysteresis values may provide a good indication of overall flexible foam durability. Lower hysteresis values are desirable. The force difference of Kuraray Polyols is smaller at cycle 1 and cycle 10 which indicates that the foam quality over time is higher quality.

Hysteresis

	Cycle 1	Cycle 2
Kuraray Polyol:	17.1 (0.5x lower)	5.9 (0.4x lower)
Common PPG (Polyether Polyol):	35.0	15.7

FOR
INQUIRIES

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