

Material Properties: V178 (FKM)

Specification: **ASTM D2000** / SAE J200 M2HK 710 A1-10 B37 B38 EF31 F15 Z

1. Tested and Certified to USP Class VI
2. This material meets FDA requirements, 21 CFR 177.2600, for repeated food contact
3. This material has been tested to and is certified to USDA 3A Sanitary Standard Number 18-02 Classes I, II, III, and IV

Original Properties (710)	Specification	V178
Hardness, Shore A, ASTM D2240 (Z = 75 ± 5)	75 ± 5	74
Tensile Strength, MPa, ASTM D412 Die C	10.0 min.	15.2
Tensile Strength, psi, ASTM D412 Die C	1450 min.	2204
Ultimate Elongation, %, ASTM D412 Die C	175 min.	182
Air Aging ASTM D573, 70 hrs. at 250°C (A1-10)		
Hardness change, Shore A, ASTM D2240	+10 max.	+1
% Tensile Strength change, ASTM D412 Die C	-25 max.	-7
% Elongation change, ASTM D412 Die C	-25 max.	-8
Compression Set, ASTM D395 Method B, 22 hrs. at 200°C, Plied discs (B37)		
% Permanent set	50 max.	7.6
Compression Set, ASTM D395 Method B, 22 hrs. at 200°C, Plied discs (B38)		
% Permanent set	50 max.	8.0
ASTM Reference Fuel C Immersion, ASTM D471, 70 hrs. at 23°C (EF31)		
Hardness change, Shore A, ASTM D2240	± 5	-3
% Tensile Strength change, ASTM D412 Die C	-25 max.	-21
% Elongation change, ASTM D412 Die C	-20 max.	-15
% Volume change, ASTM D471	0 to +10	+3
Low Temperature Brittleness, ASTM D2137 (F15)		
3 minutes at -25°C	No cracks	Pass

NOTE - International Seal, Co. (ISC) is a wholly owned subsidiary of Freudenberg-NOK.

The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

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1. Tested and Certified to USP Class VI
2. This material meets FDA requirements, 21 CFR 177.2600, for repeated food contact

Original Properties	Specification	V178
Hardness, Shore A, ASTM D2240	As determined	74
Air Aging ASTM D573, 166 hrs. at 100°C		
Hardness change, Shore A, ASTM D2240	± 10 max.	0
Butter Oil Immersion, ASTM D471, 22 hrs. at 70°C		
Hardness change, Shore A, ASTM D2240	± 6	-3
% Weight change, ASTM D412 Die C	± 5	+0.2
% Volume change, ASTM D471	± 5	+0.4
Milk Fat Immersion, ASTM D471, 22 hrs. at 70°C		
Hardness change, Shore A, ASTM D2240	± 5	-3
% Weight change, ASTM D412 Die C	± 5	+0.4
% Volume change, ASTM D471	± 5	+0.5
Distilled Water Immersion, ASTM D471, 22 hrs. at 70°C		
Hardness change, Shore A, ASTM D2240	± 5	-1
% Weight change, ASTM D412 Die C	± 5	+0.4
% Volume change, ASTM D471	± 5	+0.7
Acid Cleaner, 0.5% Nitric Acid in Water Immersion, ASTM D471, 22 hrs. at 82°C		
Hardness change, Shore A, ASTM D2240	± 5	-1
% Weight change, ASTM D412 Die C	± 5	+2.1
% Volume change, ASTM D471	± 5	+3.9
Alkaline Cleaner, 1.0% Sodium Hydroxide in Water Immersion, ASTM D471, 22 hrs. at 82°C		
Hardness change, Shore A, ASTM D2240	± 5	-2
% Weight change, ASTM D412 Die C	± 5	+0.3
% Volume change, ASTM D471	± 5	+0.5
Chlorine Sanitizer, 200 ppm Chlorine in Water Immersion, ASTM D471, 22 hrs. at 24°C		
Hardness change, Shore A, ASTM D2240	± 5	-1
% Weight change, ASTM D412 Die C	± 5	+0.1
% Volume change, ASTM D471	± 5	+0.3

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