



G-M-I, Inc. Product Data Sheet Rubber Polymers (Elastomers)

Compound: NBR (Nitrile/Buna-N) **No.**

BX50	BX70
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Curing Agent: Sulfur X = Color*

Physical Properties:

Test Method	Property	50 Durometer		70 Durometer	
		Specification	Typical	Specification	Typical
ASTM D-2240	Durometer Hardness Shore A, Points	50±5	50	70±5	71
ASTM D-412	Tensile Strength (Yield Stress), Min. PSI / mPa	1015/7	1083/7	1305/9	1451/10
ASTM D-412	Ultimate Elongation, % Min	350	784	250	381
ASTM D-297	Specific Gravity (Density), lb/ft ³ / kg/m ³	1.40±.03/22.6±.5	1.40/22.5	1.33±.02/21.3±.3	1.33/21.3
ASTM D-624	Tear Resistance Die B, Min. PPI / N/mm	100/19	118/21	150/26.3	214/37.5
ASTM D-395	Compression Set, 22 hrs at 100°C, % Max.	50	47	50	39
ASTM D-573	Heat Aged, 70 hrs at 100°C: Hardness Change, Pts Tensile Strength Change, % Max. Ultimate Elongation Change, % Max.	±15	+11	±15	+6
		±30	+6	±30	+6
		-50	-46	-50	-19
ASTM D-471	Water Resistance, 70 hrs at 100°C: Hardness Chg Pts Volume Change, % Max.	±10	+8	±10	+8
		±15	+4	±15	+2
ASTM D-412	Modulus;	100%, PSI/mPa	---	---	452/3
		200%, PSI/mPa	---	---	834/6
		300%, PSI/mPa	---	---	994/7
Temperature Range	-20/+230°F (-29/+110°C)				
Shelf Life	Maximum Storage Life: 15 Years per SAE ARP5316 Rev D and 15 Years per MIL-HDBK-695F.				
*Colors: A = Gray, B = Black, G = Green, K = Khaki, L = Purple, N = Brown, O = Orange, R = Red, U = Blue, W = White and Y = Yellow.					

Applications:

NBR (Nitrile/Buna-N) has very good abrasion, gasoline, heat and oil resistance and permeability. Its resistance to acids and alkalis increase as the Nitrile content increases. NBR must be specifically compounded for resistance to natural aging, ozone and sunlight. It has poor resistance to oxygenated solvents. NBR is superior to CR (Neoprene) in oils and solvent resistance but is not recommended for exposure in severe weather.

Standards/Regulations, Independently Tested and Certified Compliant:

Standard/Regulation	Description
ISO 9001	Quality Management System
US Food and Drug Administration	Title 21, Part 177, SubPart C, Sec. 177.2600, Substances for Use Only as Components of Articles Intended for Repeated Use in Food, CITE: 21CFR177.2600.
USDA	US FSIS (Food Safety Inspection Service) per the FDA 21CFR7.12 and 21CFR7.13 Regulations for Direct and Incidental Food Contact Materials for Intended Use as Specified in the above FDA 21CFR177.2600 Regulations.
3-A Sanitary Standards	Multiple Use-Rubber and Rubber-Like Materials Used as Product Contact Surfaces in Dairy Equipment, 18-___. Authorization No.: 1294.
USDA, NSF/3-A/ANSI 14159-3-2005	Standards for the Sanitary and Hygiene Design and Fabrication of Dairy Processing Equipment.
EU 1935/2004(03)EC	Food Contact Regulations, excluding Organoleptic (Sensory) testing.
US Pharmacopeia	USP Class VI, 2004; USP 27, NF 22, 2004, <88> Biological Reactivity, <i>In Vivo</i> . USP MEM Cytotoxicity, 2004; USP 27, NF 22, 2004, <87> Biological Reactivity, <i>In Vitro</i> . Compounds: BB70 & BW70
US FDA 9CFR94.18, FDA 21CFR589, US Pharmacopeia Vol 30<5>, EU 2004/C 24/03, EU 2002/195/EC, EU EMEA/410/01, CPMP/QWP/227/02, CVMP/134/02 & CVMP/145/197	AH/TSE Free™ Animal and Human / Transmissible Spongiform Encephalopathy Free (Animal and Human Derived Ingredient Free)
EU RoHS Directive 2002/95/EC	Restrictive Substances, EIA Material Composition Annex A: Level A Materials, Table I & Table II.
China RoHS Directive SJ/T11363-2006	Hazardous Substances, Table I.
CODEX Std 192-1995	Not yet listed.

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