



TOPARTS PTE LTD

196 PANDAN LOOP, #04-09, PANTECH INDUSTRIAL COMPLEX, SINGAPORE 138284

CO.REG.NO.: 20-0205761-R

Tel: 6316 1223 Fax: 6316 1823

LABORATORY REPORT

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MATERIAL : BUTADIENE ACRYLONITRILE RUBBER
 COMPOUND: N7096AA
 SPEC.: ASTM D2000 M2BG714 B14 EA14 EF11 EF21 EO14 EO34 F17

E-07-B

The basic material for NBR compounds is a caoutchouc and produced as natural rubber on plantations or manufactured by chemical companies.

NBR compounds consist of 70-80% cadulchouc and are often described simply as "rubber". The remainder is made up of fillers, vulcanizing agents, accelerators aging retardants and other additives which enable the properties of the raw material to be modified to meet the particular requirements of a definite application.

<u>Original Physical Properties</u>	<u>Requirements</u>	<u>Results</u>
Hardness, (Shore A) (ASTM D2240)	70±5	70
Tensile Strength, min.(psi) (ASTM D412)	2031	2638
Elongation, min, % (ASTM D412)	250	327
Tear resistance, min, (KN/m) (ASTM D624, die C)		48.5
Modulus at 100%, (psi) (ASTM D412)		578
Specific Gravity (g/cm ³)		1.243
<u>B14 Compression Set, 22 Hrs @ 100°C (ASTM D395,Method B), max</u>	25 % (button)	15
<u>EA 14 Water Resistance, 70Hrs@100°C (ASTM D471)</u>		
Hardness Change, pts.	±10	-5
Tensile Change, %		+1
Elongation Change, %		-14
Volume Change, %	±15	+7.1
<u>EO14 ASTM #1 Oil, 70 Hrs @ 100°C (ASTM D471)</u>		
Hardness Change, pts.	-5~+10	+7
Tensile Change, max, %	-25	+2
Elongation Change, max, %	-45	-19
Volume Change, %	-10~+5	-9.6
<u>EO34 IRM 903 Oil, 70 Hrs @ 100°C (ASTM D471)</u>		
Hardness Change, pts.	-10~+5	-1
Tensile Change, max, %	-45	+1
Elongation Change, max, %	-45	-13
Volume Change, %	0~+25	+1



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EF11 ASTM Fuel A Resistance, 70 Hrs @ 23°C (ASTM D471)

Hardness Change, pts.	±10	-2
Tensile Change, max, %	-25	-9
Elongation Change, max, %	-25	-12
Volume Change, %	-5~+10	+0.8

EF21 ASTM Fuel B Resistance, 70 Hrs @ 23°C (ASTM D471)

Hardness Change, pts.	0~-30	-13
Tensile Change, max, %	-60	-29
Elongation Change, max, %	-60	-26
Volume Change, %	0~+40	+19.1

F17 Low-Temperature Resistance, 3 min@-40°C(ASTM D2137)

nonbrittle	pass
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