

# BOYD CORPORATION

## TECHNICAL REPORT N140-90 NITRILE COMPOUND

### GENERAL PROPERTIES

The N140-90 Nitrile (BUNA-N) is a general-purpose copolymer of butadiene and acrylonitrile. This 90 durometer nitrile compound is exceptionally suited for high pressure applications and is resistant to petroleum products over a temperature range of -40F to +250F. This compound meets the following popular ASTM Specifications.

<u>ASTM Designation</u>	<u>ORIGINAL PROPERTIES</u>	<u>ASTM D2000 SPECIFICATION</u>	<u>N140-90 LABORATORY PROPERTY</u>
	Durometer, Shore A	90+/-5	91
	Tensile, psi (MPa), Minimum	1450 (10)	2270 (15.7)
	Elongation, % Minimum	100	125
	Specific Gravity	-	1.38
	<u>HEAT AGE, 70 HRS @ 100 C</u>		
	Durometer Change, Points	+/- 15	+4
	Tensile Strength Change, % Maximum	+/- 30	-6
	Elongation Change, % Maximum	-50	-22
B14	<u>COMPRESSION SET, 22 HRS @ 100 C</u>		
	Original Deflection, % Maximum	25 (Button)	19.8
EA14	<u>WATER RESISTANCE, 70 HRS @ 100C</u>		
	Durometer Change, Points	+/-10	+1
	Volume Change, %	+/-15	+4.4
EF11	<u>FUEL A RESISTANCE, 70 HRS @ 23C</u>		
	Durometer Change, Points	+/-10	0
	Tensile Change, % Maximum	-25	-2.4
	Elongation Change, % Maximum	-25	-3.1
	Volume Change, %	-5/+10	+0.5
EF21	<u>FUEL B RESISTANCE, 70 HRS @ 23C</u>		
	Durometer Change, Points	0/-30	-15
	Tensile Change, % Maximum	-60	-19.9
	Elongation Change, % Maximum	-60	-37.3
	Volume Change, % Maximum	0/+40	+19.6
EO14	<u>ASTM #1 OIL, 70 HRS @ 100C</u>		
	Durometer Change, Points	-5/+15	+1
	Tensile Change, % Maximum	-25	+3.1
	Elongation Change, % Maximum	-45	-16.7
	Volume Change, %	-10/+5	-1.5
EO34	<u>ASTM #3 OIL, 70 HRS @ 100C</u>		
	Durometer Change, Points	-10/+5	-4
	Tensile Change, % Maximum	-45	-2
	Elongation Change, % Maximum	-45	-13.2
	Volume Change, % Maximum	0/+25	+11.7
F16	<u>LOW TEMPERATURE BRITTLENESS ASTM D2137, Method A, 9.3.2</u>		
	3 Minutes @ -35 C	Non-Brittle	Pass

### SPECIFICATIONS MET

ASTM D2000-01 Grade M7BG910 B14 EA14 EF11 EF21 EO14 EO34 F16