



# Imperial Double Lip Nitrile 70 ShA Oil Seals

Nitrile / NBR / Buna-N

Nitrile is the most cost effective and commonly available Oil Seal material. Commonly used in driveshafts, crankshafts and hydraulic cylinders where a rotating shaft is lubricated by oil or grease. NBR is good for applications where the Oil Seal requires resistance to lubrication oils, hydraulic fluids and grease. Nitrile Oil Seals are not suitable for use with brake oil, phosphoric ester and ester base.

*Colour: Black*

*Operating temperature range: -20°C to 90°C*

*Please see page 3 onwards for sizes.*

Physical Property	Test Method	Units	Typical Values
Hardness	ASTM D 2240	Shore A	70 ±5
Tensile Strength	ASTM D 412 C	MPa	18.9
Elongation	ASTM D 412 C	%	438
Specific Gravity	ASTM D 297	g/cm <sup>3</sup>	1.25 ± 0.03
Compression Set 22h / 200°C	ASTM D 395 B	%	10
Tear Resistance	ASTM D 624 B	N/mm	58
Low Temperature Resistance	ASTM D 2137 A	°C	-40

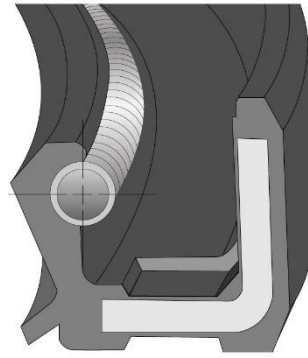
Aging Property	Test Method	Time (h)	Temperature (°C)	Hardness	Tensile Strength (%)	Ultimate Elongation (%)	Volume (%)
Air	ASTM D 573	70	100	+1	+4	-11	
ASTM Oil No. 1	ASTM D 471	70	100	+3	+3	-14	-3
ASTM Oil 903	ASTM D 471	70	100	-2	-3	-18	+6
Fuel A	ASTM D 471	70	23	0	-9	-17	+0.2
Fuel B	ASTM D 471	70	23	-14	-34	-33	+23
Water	ASTM D 471	70	100	-3			+5

### Chemical resistance

- Many hydrocarbons
- Fats
- Oils & Gasoline
- Petroleum based hydraulic fluid (HFD-R)

### Not compatible with:

- Ozone
- Esters
- Ketones
- Aldehydes
- Chlorinated
- Nitro Hydrocarbons



*Double Lip Oil Seal Profile*

### Tolerance Chart:

<i>Press-Fit Allowance</i>		
<b>Bore Diameter (mm)</b>	<b>Case</b>	<b>Permissible Eccentricity</b>
<b>Up to 50</b>	+0.15 - +0.30	0.25
<b>Over 50 to 80</b>	+0.20- +0.35	0.35
<b>Over 80 to 120</b>	+0.20- +0.35	0.5
<b>Over 120 to 180</b>	+0.25- +0.45	0.65
<b>Over 180 to 300</b>	+0.25- +0.45	0.8
<b>Over 300 to 500</b>	+0.30- +0.5	1.0

<i>House Tolerance</i>		<i>Shaft Tolerance</i>	
<b>Bore Diameter (mm)</b>	<b>Bore Tolerance</b>	<b>Shaft Diameter (mm)</b>	<b>Tolerance</b>
<b>Over 6 to 10</b>	+0.022/-0.000	Over 3 to 6	0/-0.075
<b>Over 10 to 18</b>	+0.027/-0.000	Over 6 to 10	0/-0.090
<b>Over 18 to 30</b>	+0.033/-0.000	Over 10 to 18	0/-0.110
<b>Over 30 to 50</b>	+0.039/-0.000	Over 18 to 30	0/-0.130
<b>Over 50 to 80</b>	+0.046/-0.000	Over 30 to 50	0/-0.160
<b>Over 80 to 120</b>	+0.054/-0.000	Over 50 to 80	0/-0.190
<b>Over 120 to 180</b>	+0.063/-0.000	Over 80 to 120	0/-0.220
<b>Over 180 to 250</b>	+0.072/-0.000	Over 120 to 180	0/-0.250
<b>Over 250 to 315</b>	+0.081/-0.000	Over 180 to 250	0/-0.290
<b>Over 315 to 400</b>	+0.089/-0.000	Over 250 to 315	0/-0.320
<b>Over 400 to 500</b>	+0.097/-0.000	Over 315 to 400	0/-0.360

MPN	Millimetres (mm)			Inches (")			Inches (Fraction)		
	Internal Diameter	Outside Diameter	Height	Internal Diameter	Outside Diameter	Height	Internal Diameter	Outside Diameter	Height
2270825	25.40	41.28	6.35	1	1.625	0.25	1"	1 5/8"	1/4"
2270796	26.97	38.10	6.35	1.062	1.5	0.25	1 1/16"	1 1/2"	1/4"
2270776	19.05	31.75	6.35	0.75	1.25	0.25	3/4"	1 1/4"	1/4"
2270773	17.46	28.58	6.35	0.6875	1.125	0.25	11/16"	1 1/8"	1/4"
2270768	14.27	28.58	6.35	0.562	1.125	0.25	1 9/16"	1 1/8"	1/4"
2270765	12.70	28.58	6.35	0.5	1.125	0.25	1/2"	1 1/8"	1/4"
2270763	9.53	19.05	6.35	0.375	0.75	0.25	3/8"	3/4"	1/4"
2270809	31.75	53.98	7.92	1.25	2.125	0.312	1 1/4"	2 1/8"	5/16"
2270816	36.50	50.80	7.92	1.437	2	0.312	1 7/16"	2"	5/16"
2270789	22.23	38.10	7.92	0.875	1.5	0.312	7/8"	1 1/2"	5/16"
2270781	19.05	38.10	7.92	0.75	1.5	0.312	3/4"	1 1/2"	5/16"
2270777	19.05	31.75	7.92	0.75	1.25	0.312	3/4"	1 1/4"	5/16"
2270769	15.88	28.58	7.92	0.625	1.125	0.312	5/8"	1 1/8"	5/16"
2270767	12.70	25.40	7.92	0.5	1	0.312	1/2"	1	5/16"
2270821	47.63	63.50	9.53	1.875	2.5	0.375	1 7/8"	2 1/2"	3/8"
2270819	42.85	63.50	9.53	1.687	2.5	0.375	11/16"	2 1/2"	3/8"
2270799	28.58	52.37	9.53	1.125	2.062	0.375	1 1/8"	2 1/16"	3/8"
2270808	31.75	47.63	9.53	1.25	1.875	0.375	1 1/4"	1 7/8"	3/8"
2270827	25.40	47.63	9.53	1	1.875	0.375	1"	1 7/8"	3/8"
2270786	20.62	38.10	9.53	0.812	1.5	0.375	13/16"	1 1/2"	3/8"