



Imperial Single 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 ³	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

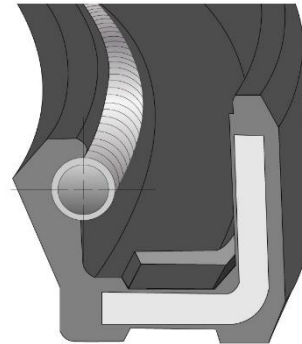
Aging Property	Test Method	Time (h)	Temperature (°C)	Hardness	Tensile Strength (%)	Ultimate Elongation (%)	Volume (%)
Air	ASTM D 573	70	100	+1	+4	-11	
ASTM Oil No. 1	ASTM D 471	70	100	+3	+3	-14	-3
ASTM Oil 903	ASTM D 471	70	100	-2	-3	-18	+6
Fuel A	ASTM D 471	70	23	0	-9	-17	+0.2
Fuel B	ASTM D 471	70	23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



Single Lip Oil Seal Profile

Tolerance Chart:

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

<i>House Tolerance</i>		<i>Shaft Tolerance</i>	
Bore Diameter (mm)	Bore Tolerance	Shaft Diameter (mm)	Tolerance
Over 6 to 10	+0.022/-0.000	Over 3 to 6	0/-0.075
Over 10 to 18	+0.027/-0.000	Over 6 to 10	0/-0.090
Over 18 to 30	+0.033/-0.000	Over 10 to 18	0/-0.110
Over 30 to 50	+0.039/-0.000	Over 18 to 30	0/-0.130
Over 50 to 80	+0.046/-0.000	Over 30 to 50	0/-0.160
Over 80 to 120	+0.054/-0.000	Over 50 to 80	0/-0.190
Over 120 to 180	+0.063/-0.000	Over 80 to 120	0/-0.220
Over 180 to 250	+0.072/-0.000	Over 120 to 180	0/-0.250
Over 250 to 315	+0.081/-0.000	Over 180 to 250	0/-0.290
Over 315 to 400	+0.089/-0.000	Over 250 to 315	0/-0.320
Over 400 to 500	+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
2270813	33.325	49.200	4.750	1.312	1.937	0.187	1 5/16"	15/16"	3/16"
2270802	30.150	44.450	4.750	1.187	1.75	0.187	3/16"	1 3/4"	3/16"
2270823	25.400	34.925	4.750	1	1.375	0.187	1"	1 3/8"	3/16"
2270775	19.050	31.750	4.750	0.75	1.25	0.187	3/4"	1 1/4"	3/16"
2270772	15.875	25.400	4.750	0.625	1	0.187	5/8"	1"	3/16"
2270798	28.575	44.450	5.329	1.125	1.75	0.2098	1 1/8"	1 3/4"	13/64
2270814	34.925	52.375	6.350	1.375	2.062	0.25	1 3/8"	2 1/16"	1/4"
2270817	38.100	50.800	6.350	1.5	2	0.25	1 1/2"	2"	1/4"
2270803	30.150	50.800	6.350	1.187	2	0.25	1 3/16"	2"	1/4"
2270795	24.501	47.625	6.350	0.9646	1.875	0.25	31/32"	1 7/8"	1/4"
2270805	31.750	44.450	6.350	1.25	1.75	0.25	1 1/4"	1 3/4"	1/4"
2270824	25.400	41.275	6.350	1	1.625	0.25	1"	1 5/8"	1/4"
2270779	19.050	34.925	6.350	0.75	1.375	0.25	3/4"	1 3/8"	1/4"
2270785	19.837	31.750	6.350	0.781	1.25	0.25	25/32"	1 1/4"	1/4"
2270774	19.050	28.575	6.350	0.75	1.125	0.25	3/4"	1 1/8"	1/4"
2270764	12.700	22.225	6.350	0.5	0.875	0.25	1/2"	7/8"	1/4"
2270822	25.400	9.525	6.350	1	0.375	0.25	1"	3/8"	1/4"
2270810	31.750	57.150	7.925	1.25	2.25	0.312	1 1/4"	2 1/4"	5/16"
2270818	38.100	50.800	7.925	1.5	2	0.312	1 1/2"	2"	5/16"
2270815	34.925	50.800	7.925	1.375	2	0.312	1 3/8"	2"	5/16"
2270811	31.750	50.800	7.925	1.25	2	0.312	1 1/4"	2"	5/16"
2270782	19.050	41.275	7.925	0.75	1.625	0.312	3/4"	1 5/8"	5/16"

2270780	19.050	38.100	7.925	0.75	1.5	0.312	3/4"	1 1/2	5/16"
2270783	19.050	44.450	7.938	0.75	1.75	0.3125	3/4"	1 3/4"	5/16"
2270787	22.225	34.925	7.938	0.875	1.375	0.3125	7/8"	1 3/8	5/16"
2270761	306.324	635.000	9.525	12.06	25	0.375	12 1/16"	25"	3/8"
2270820	44.450	57.150	9.525	1.75	2.25	0.375	1 1/4"	2 1/4"	3/8"
2270800	28.575	57.150	9.525	1.125	2.25	0.375	1 1/8"	2 1/4"	3/8"
2270828	25.400	57.150	9.525	1	2.25	0.375	1"	2 1/4"	3/8"
2270794	23.800	44.450	9.525	0.937	1.75	0.375	15/16"	1 3/4"	3/8"
2270792	22.225	44.450	9.525	0.875	1.75	0.375	7/8"	1 3/4"	3/8"
2270797	28.575	41.275	9.525	1.125	1.625	0.375	1 1/8"	1 5/8"	3/8"
2270793	23.800	38.100	9.525	0.937	1.5	0.375	15/16"	1 1/2	3/8"
2270791	22.225	38.100	9.525	0.875	1.5	0.375	7/8"	1 1/2	3/8"
2270788	22.225	34.925	9.525	0.875	1.375	0.375	7/8"	1 3/8	3/8"
2270771	15.875	34.925	9.525	0.625	1.375	0.375	5/8"	1 3/8	3/8"
2270766	12.700	31.750	9.525	0.5	1.25	0.375	1/2"	1 1/4"	3/8"
2270770	15.875	28.575	9.525	0.625	1.125	0.375	5/8"	1 1/8"	3/8"
2270806	31.750	44.450	9.921	1.25	1.75	0.3906	1 1/4"	1 3/4"	25/64"
2270826	25.400	46.990	11.100	1	1.85	0.437	1"	1 27/32"	7/16"
2270804	30.163	44.450	11.113	1.1875	1.75	0.4375	1 3/16"	1 3/4"	7/16"
2270812	31.750	50.800	12.700	1.25	2	0.5	1.25"	2"	1/2"
2270801	28.575	50.800	12.700	1.125	2	0.5	1 1/8"	2"	1/2"