

M.S.O. SEALS & GASKETS
4702 STEFFANI LANE
HOUSTON, TX 77041

MSO-PUR

MATERIAL DESCRIPTION: POLYURETHANE (CREAM, RED, BLUE)
TEMPERATURE RANGE: -30°C TO +110°C -22°F TO + 230°F

PROPERTIES

HARDNESS- SHORE A	95-96
SHORE D	50-51
25°C (77°F)	
100% MODULUS, PSI (MPA)	2200 (15.2)
200% MODULUS, PSI (MPA)	2900 (20.0)
300% MODULUS, PSI (MPA)	4600 (31.8)
TENSILE, PSI (MPA)	6400 (44.1)
ELONGATION, %	350
D-470 APLIT TEAR, PLI (KN/M)	140 (24.5)
DIE C TEAR, PLI (KN/M)	650 (111)
BASHORE REBOUND	44
COMPRESSION SET METHOD B	
22 HRS. @ 158°F	36
SPECIFIC GRAVITY	1.13
100°C (212°F)	
100% MODULUS, PSI (MPA)	1800 (12.4)
200% MODULUS, PSI (MPA)	1900 (13.1)
300% MODULUS, PSI (MPA)	2300 (15.9)
TENSILE, PSI (MPA)	4000 (27.6)
ELONGATION, %	410
D-470 SPLIT TEAR, PLI (KN/M)	70 (12.3)
125°C (257°F)	
100% MODULUS, PSI (MPA)	1530 (10.0)
200% MODULUS, PSI (MPA)	1630 (11.3)
300% MODULUS, PSI (MPA)	1960 (13.5)
TENSILE, PSI (MPA)	2400 (16.5)
ELONGATION, %	340
D-470 SPLIT TEAR, PLI (KN/M)	55 (9.6)

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MSO-TFV

MATERIAL DESCRIPTION: VIRGIN TEFLON (WHITE)

TEMPERATURE RANGE: -200°C TO + 260°C -380°F TO +500°F

PROPERTIES	UNIT	
BALL PRESSURE HARDNESS	N/mm ²	25
TENSILE STRENGTH LONGITUDE	N/mm ²	27
TENSILE STRENGTH CROSS	N/mm ²	26
ELONGATION AFTER CRACK-LONGITUDE	N/mm ²	390
ELONGATION AFTER CRACK-CROSS	N/mm ²	450
DENSITY	g/cm ³	2,16
YOUNG'S MODULUS (TENSION)	N/mm ²	750
IMPACT-TENACITY	kJ/m ²	0.8
STABILITY OF SHAPE AT HIGH TEMPERATURE		
ISO 75B	°C/°F	121/250
COEFFICIENT OF LINEAR EXTENSION	K-1	1,2 10-4
COEFFICIENT OF FRICTION		0,13
ON STEEL DYNAMICS		
MELTING POINT	°C/°F	327/620
HEAT CONDUCTIVITY	W/mk	0,25
SPEC. HEAT CAPACITY	J/gk	1.0
ELECTRICAL INSULATION VALUE	Ohm.co	10-18
SPECIFIC INDUCTIVE COEFFICIENT		2,1
LINEAR EXPANSION COEFFICIENT	K-1	16° 10-5

APPLICATION: FOR ROTATION AND SLIDE BEARINGS WITH LOWEST STARTING FRICTION BUT LOW STRESS, NOT WEAR RESISTANT.

THE MATERIAL IS SUITABLE FOR TEMPERATURES BETWEEN -200°C TO 260°C (-392°F/500°F)

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MSO-TFN

MATERIAL DESCRIPTION: NICKEL FILLED TEFLON (GREY)

TEMPERATURE RANGE: -200°C TO + 260°C -380°F TO +500°F

PROPERTIES	UNIT	
BALL PRESSURE HARDNESS	N/mm ²	26
HARDNESS	SHORE D	68
SPECIFIC GRAVITY	g/cm ³	2,4+0,1
TENSILE STRENGTH	N/mm ²	15
LINEAR EXPANSION COEFFICIENT	K1	11 5
DEFORMATION UNDER LOAD 14N/mm ² , 100h/23°C	N/mm ²	7,1

APPLICATIONS: FOR HEAVILY STRESSED, WEAR-RESISTANT, LUBRICATED BUSHINGS AND GUIDES (E.G. HYDRAULIC SYSTEM) AS WELL AS SLIDE RING PACKINGS FOR PISTON AND ROD.

THE MATERIAL IS SUITABLE FOR TEMPERATURES BETWEEN -200°C TO +260°C (-392°F/+500°F)

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MSO-HNBR

MATERIAL DESCRIPTION: 90A HYDROGENATED NITRILE (BLACK)
TEMPERATURE RANGE: -35°C TO +150°C

PROPERTIES	UNIT	
HARDNESS	D2240	90A
TENSILE STRENGTH	D412	4150 PSI
ELONGATION	D412	165%
TENSILE STRENGTH @ 100%	D412	2060 PSI
TENSILE STRENGTH @ 50%	D412	904 PSI
BRITTLE POINT	D1329	-49°F
TR-10	D746	8°F
COMPRESSION SET	D365B	
AGED 22 HR. @ 257°F		5%
AGED 70 HR. @ 300°F		23%
AIR AGING 336 HR. @ 300°F	D573	
HARDNESS CHANGE		+5 PTS.
TENSILE CHANGE		-16.4%
ELONGATION CHANGE		-57.6%
IMMERSION ASTM#3 – 70 HR. @ 250°F	D471	
HARDNESS CHANGE		-3 PTS.
TENSILE CHANGE		-11.3%
ELONGATION CHANGE		-22.5%

100% TS CHANGE	-8.2%
VOLUME CHANGE	+11.0%
CO2 AGING- 24 HR. @ 74°F NACE PROPOSED METHOD	
CO2 PRESSURE WAS REDUCED TO 0 WITHIN 10 SECONDS.	
PROPERTIES WERE MEASURED 1 HR. AFTER DECOMPRESSION	
HARDNESS	-10 PTS.
TENSILE	-34.3%
100% TENSILE STRESS	-14.1%
ELONGATION	-21.2
WT. CHANGE	(IMMEDIATE) +11.9%
	(AFTER 1 HR.) +4.3%

APPLICATIONS: AN ELASTOMER BASED ON HYDROGENATED ACRYLONITE BUTADIENE RUBBER. SUITABLE FOR APPLICATIONS INVOLVING ALIPHATIC HYDROCARBONS SUCH AS FUEL, PROPANE AND BUTANE, MINERAL OILS AND GREASES, VEGETABLE AND ANIMAL FAT OR OIL. IT ALSO CAN BE USED IN MANY DILUTED ACIDS, ALKALIES AND SALT SOLUTION, AS WELL AS IN GLYCOL WATER MIXTURES.

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MSO-NBR

MATERIAL DESCRIPTION: BUNA RUBBER (BLACK)
 TEMPERATURE RANGE: -40°C TO +100°C

PROPERTIES	UNIT	
HARDNESS	ASTM D2240	85A
TENSILE STRENGTH	ASTM D412	2739 PSI
ELONGATION	ASTM D412	180%
TENSILE STRESS @ 100%	ASTM D412	1841 PSI
COMPRESSION SET	ASTM D395B	9.6%
AGED 70 HR. @ 180°F		
AIR AGED 70 HR. @ 180°F	ASTM D573	
TENSILE CHANGE		-4.1%
ELONGATION CHANGE		-10.0%
TENSILE STRESS CHANGE		+1.9%
VOLUME CHANGE		-0.8%
HARDNESS CHANGE		+4 PTS.

FLUID AGED 70 HR. @180°F	ASTM D471	
FLUID MEDIUM: ASTM #3 OIL		
TENSILE CHANGE		-5.0%
ELONGATION CHANGE		-15.0%
TENSILE STRESS CHANGE		+8.4%
VOLUME CHANGE		+13.3%
HARDNESS CHANGE		-3 PTS.

APPLICATIONS: AN ELASTOMER BASED ON ACRYLONITRILE BUTADIENE RUBBER, WHICH IS USED FOR U-CUP SEALS, LIP SEALS, CHEVRON PACKING, SPECIAL SEALS AND VARIOUS COMPONENTS. THIS MATERIAL STANDS OUT WITH ITS HIGH RESISTANCE TO MINERAL OILS AND GREASES OR HFA, HFB AND HFC PRESSURE FLUIDS. NBR HAS EXCELLENT MECHANICAL PROPERTIES SUCH AS ABRASION RESISTANCE AND ELASTICITY.

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MSO-VITON

MATERIAL DESCRIPTION: VITON (BROWN)
TEMPERATURE RANGE: -20°C TO +200°C

PROPERTIES	UNIT	
HARDNESS	ASTM D2240	90A
TENSILE STRENGTH	ASTM D412	2080 PSI
ELONGATION	ASTM D412	183%
TENSILE STRENGTH @ 100%	ASTM D412	1409 PSI
COMPRESSION SET AGED 70 HR @ 350 °F ASTM D395B		12.8%
AIR AGED 70 HR. @ 350°F	ASTM D573	
TENSILE CHANGE		+10.3%

ELONGATION CHANGE	-10.9%
TENSILE STRESS CHANGE	+15.1%
VOLUME CHANGE	-0.1%
HARDNESS CHANGE	+2 PTS.
FLUID AGED 70 HR. @ 350°F	
FLUID MEDIUM: ASTM #3 OIL	
ASTM D471	
TENSILE CHANGE	-23.6%
ELONGATION CHANGE	+7.7%
TENSILE CHANGE	+14.6%
VOLUME CHANGE	+2.3%
HARDNESS CHANGE	0 PTS.

APPLICATIONS: AN ELASTOMER BASED ON FLOURINE RUBBER. IT IS USED FOR U-CUPS, LIP SEALS, CHEVRON PACKING, WIPERS AND SPECIAL SEALS. ITS OUTSTANDING PROPERTIES ARE ITS HIGH RSISTANCE TO HEAT, CHEMICALS, WEATHERING AND OZONE. RESISTS MINERAL OILS AND GREASES CONTAINING SULFUR, HIGHLY INFLAMMABLE HFD FLUIDS.

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MSO-MDX

MATERIAL DESCRIPTION: MDX NYLON (GRAY)
TEMPERATURE RANGE: 220 TO 250°F

PROPERTIES	UNIT	
TENSILE STRENGTH	ASTM D638	10,000-12,000
ELONGATION	ASTM D638	30-45
TENSILE MODULAS	ASTM D638	450,000
COMPRESSIVE STRENGTH	ASTM D695	14,500

(10% DEF.)		
FLEXURAL STRENGTH	ASTM D790	15,000
FLEXURAL MODULAS	ASTM D790	420,000
NOTCHED IZOD IMPACT	ASTM D256	0.85-1.36
HARDNESS-ROCKWELL		116-120
SHORE D		80-84
COEFFICIENT OF FRICTION:		
DYNAMIC (DRY VS. STEEL)		0.13-0.2
BURN RATE	UL 94	V-2
FLAMMABILITY	ASTM D0639	SELF EXT.
MELTING POINT	ASTM D789	428-437
MAX. SERVICE TEMP:		
CONTINUOUS		220-250
INTERMITTENT		300-320
COEFFICIENT OF THERMAL EXPANSION	ASTM D696	5.5 X 10 ⁻⁵
DIELECTRIC STRENGTH:	ASTM D149	500-600
VOLUME RESISTIVITY	ASTM D257	10 15
DIELECTRIC CONSTANT:	ASTM D150	
60 HRTZ.		3.70
10 5 HRTZ.		3.70
SPECIFIC GRAVITY	ASTM D792	1.14
WATER ABSORPTION:	ASTM D570	
24 HRS.		0.2-0.5
EQILIBRIUM		1-2.5

APPLICATION: USED FOR ANIT-EXTRUSION RINGS, GUIDE RING BUSHES, SCRAPERS AND OTHER HIGH PRECISION ROTATING PARTS. GOOD MECHANICAL PROPERTIES, LOW WATER ABSORPTION AND GOOD CHEMICAL RESISTANCE.

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MSO-EPDM

MATERIAL DESCRIPTION: EPDM (BLACK OR BLUE)

TEMPERATURE RANGE: -45°C TO +150°C -49°F TO +302°F

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PROPERTIES		UNIT	
HARDNESS	SHORE A	85±5	DIN 53505
TENSILE STRENGTH AT BREAK	N/MM ²	10, 8	DIN 53504
ELONGATION AT BREAK	%	148	DIN53504
FLEXIBILITY	%	34	DIN53512
TEAR STRENGTH	N/MM	9	DIN53507B
DENSITY	G/CM ³	1, 24	DIN53479
ABRASION	MM ³	150	DIN53516
STRESS RATIO	%	19	DIN53517

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MSO-CARBOXYLATED NITRILE

Compound Data Sheet

Polymer:	Carboxylated Nitrile
Filler:	Mineral
Cure System:	Peroxide
Hardness:	90 +/-5
Specific Gravity:	1.32
Tensile Strength:	2000
Die "C" Tear:	150
Elongation%	400

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MSO-SILICONE

MATERIAL DESCRIPTION: Silicone

PROPERTIES

Specific Gravity	ASTM D297	1.47-1.53
Hardness	ASTM D2240	75-80
Tensile, PSI	ASTM D412	700 MIN
Elongation%	ASTM D412	100 MIN
Tear Strength	ASTM D624	50 MIN
Color		Red

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MSO-CIP

MATERIAL DESCRIPTION: Composite Material

PROPERTIES

Series 100 (dry running)	25,000 (250 spm)
Tensile Strength	10,000 PSI
Compressive Strength	
Perpendicular to Laminate	35,000 PSI
Perpendicular to Laminate (Breaking)	52,000 PSI
Compressive Strength	13,500 PSI
Tensile Modulus of Elasticity	470,000 PSI
Flexural Modulus of Elasticity	280,000 PSI
Hardness Rockwell M	100
Desity	.045#/cu in
Water Absorption	<.1%

Dry applications are best suited to pivoting, linear or very slow rotational.
Please consult with Technical Services on rotary applications.