O-Rings Product Overview

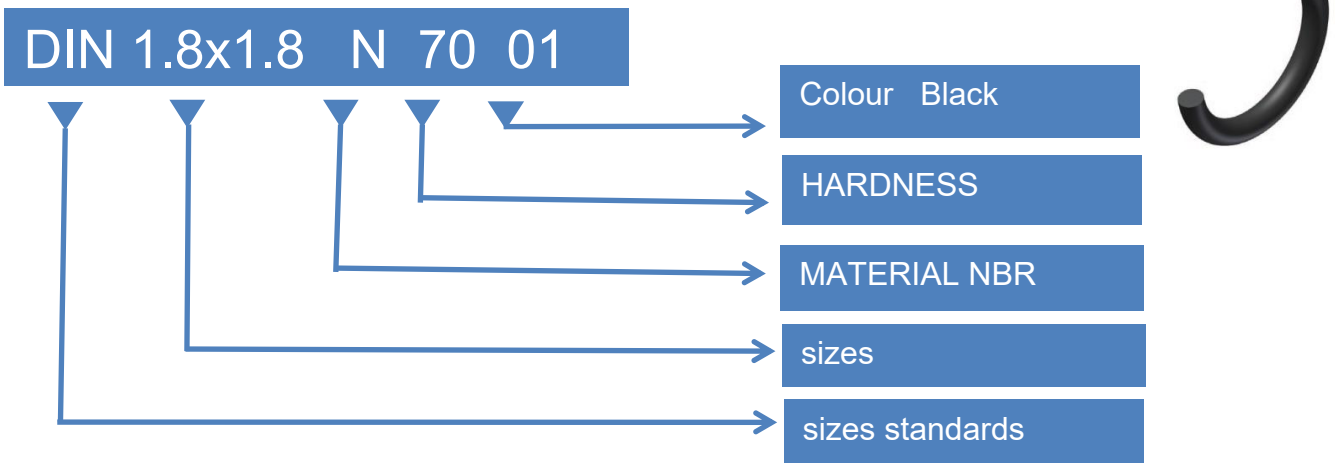
Product Overview

1)The most common type of static seal is the flexible elastomer O-ring. O-rings provide an affordable seal that in most cases are simple to install and subject to correct material selection, give acceptable life between maintenance checks.

2)Available in a variety of materials to suit every sealing application, fully moulded O-rings are manufactured to several international sizes standards, including DIN3771,BS1806, BS4518, AS568 and ISO 3601.

3)Alternatively non-standard custom sizes, up to1.5m diameter can be produced to specific requirements.

ORK specification



Elastomer	Material Family Designator	Compound Reference	Colour	Hardness Shore A	Temperature	Application
Nitrile, NBR, Buna N	NBR	N7001	Black	70	-55℃ to +110℃	Standard compound with good compression-set values and medium acrylonitrile content for use with hydraulic oils, vegetable oils, animal fats, acetylene, alcohols, water, air, fuels and many other fluids

Ethylene Propylene, EPDM, EPM	EPDM	E7001	Black	70	-40℃ to +130℃	Standard, sulphur cured EPDM compound with very good compression set for use with solvents, alcohols, ketones, esters, organic and inorganic acids. Not recommended for animal fats, vegetable or mineral oils.
Ethylene Propylene, EPDM, EPM	EPDM	E7001P	Black	70	-40℃ to +150℃	High performance peroxide cured EPDM compound with very good compression-set, steam, ozone and weathering resistance.
Silicone, VMQ	SIL	S7001	Red	70	-55℃ to +230℃	General purpose silicone with excellent physical and temperature resistance up to 220℃. Extremely high and low temperature range for use in air, oxygen dry heat, ozone, hot water to 150℃, and glycol based brake fluids. Silicones are recommended only for static applications.
Fluorocarbon FKM, FPM Viton® A	FPM	V7001	Black	70	-25℃ to +230℃	General purpose compound with very low compression-set characteristics at high temperatures and chemical resistance to oils, fats, fuels. Suitable for vacuum applications.
		V7004	Green			

PerFluoroelastomer, FFKM	FFKM	FV7501	Black	75	‘+275°C	Broadest range of chemical and temperature resistance for chemical processing industry. Suitable for acids, basics, amines, steam, ethylene oxide and many other aggressive chemicals.
		FV7501TT			+310°C	High temperature compound with superb compression-set characteristics and improved resistance against steam and amines. Very suitable for temperature cycle applications.

MATERIAL SPECIFICATION

[illegible] the seal industry and is a copolymer of two monomers; acrylonitrile (ACN) and butadiene. The properties of this elastomer are ruled by the ACN content which is broken down into three classifications:

High Nitrile: >45% ACN content
Medium Nitrile: 30 – 45% ACN content
Low Nitrile: <30% ACN content

The higher the ACN content, the better the elastomers resistance to hydrocarbon oils. With lower ACN content, the material offers better flexibility at low temperatures. Medium nitrile is, therefore, the most widely specified due to its good overall balance in most applications.

Typically, nitrile rubber can be compounded to work over a temperature range of -35°C to +120°C and is superior to most other elastomers in regard to compression set, tear and abrasion resistance.

Nitrile rubbers posses excellent resistance to oil-based fluids, vegetable oils, greases, water and air.

MATERIAL SPECIFICATION

Ethylene Propylene Diene Monomer (EPDM)

Ethylene Propylene is available as a copolymer (EPR) or as a terpolymer (EPDM).

These elastomers have excellent resistance to heat, water, steam, weathering and ozone.

Ethylene Propylene based compounds are not recommended for use with mineral or petroleum based fluids.

Sulphur cured grades offer a typical temperature range of –50°C to +120°C and optimal mechanical properties.

Peroxide-cured grades can reach a maximum temperature of approximately +150°C in hot water, alcohols, organic and inorganic acids and bases.

EPDM is not suitable for use in mineral oils.

MATERIAL SPECIFICATION

Silicone (VMQ) / Fluorosilicone (FVMQ)

Silicone elastomers are commonly used for extreme temperature ranges (-90°C to +230°C) and offer good low temperature flexibility. They also offer good resistance to ultra violet radiation (UV), oxygen and ozone.

Silicone is best suited to non-dynamic applications, as this elastomer type possess relatively low tear strength and abrasion resistance, although higher strength grades are

They are also compliant with engine and transmission oils, vegetable oils and some brake fluids.

MATERIAL SPECIFI

Flourocarbon Rubber (FKM)

FKMs (sometimes known as FPMs in Europe) are frequentl
harsh chemicals. The strong carbon-fluorine bonds that mal
thermo-chemical resistance, giving excellent ageing charac
elevated temperatures.

FKMs offer excellent resistance to mineral oils and greases
hydrocarbons, petrol and diesel fuels, silicone oils and grea
to ethers, esters and amines.

FKMs are available as a copolymer (two monomers), terpol
tetrapolymer (four monomers). Each type determines both f
which in turn significantly impact the chemical resistance an

More recent innovations include the development of FKM m
applications, where with a glass transition of -40℃

Types of Fluorocarbon Rubber

ASTM D1418 Designation	Common Name	Typical Cure System	Typical Fluorine Content
Type 1	Viton® A	Bisphenol or amine	66%
Type 2	Viton® B, F or GF	Bisphenol, amine or peroxide	66-70%
Type 3	Viton®GLT	Peroxide	64-67%
Type 4	Aflas	Peroxide	55%
Type 5	Viton®ETP	Peroxide	67%

Ultra-low temp	Ultra-low temp	Peroxide	66%

Viton is a registered trademark of DuPont Performance Chemicals
Aflas is a registered trademark of Asahi Glass

ICATION

y used to resist extreme temperatures and
ke up the polymer structure provide high
teristics shown by low compression set at

, aliphatic, aromatic and some chlorinated
ses. However FKMs show poor resistance

ymer (three monomers) or as a
luorine content and chemical structure
ıd temperature performance of the polymer.

ıaterials for use in low temperature

Description
General purpose with excellent mechanical properties
Improved fluid and oil/solvent resistance, including improved fuel resistance. Peroxide cured materials offer improvements in coolant and water resistance
Improved low temperature resistance but reduced chemical resistance
Excellent resistance to lubricating oils, corrosion inhibitors and coolants
Speciality grade, excellent chemical resistance, including increased resistance to amines and fuel additives

Speciality polymers are available that further extend the low temperature performance of FKMs