



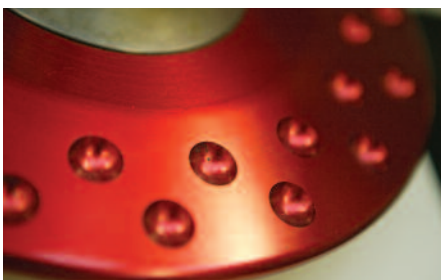
SPECIFYING COMPOUNDS

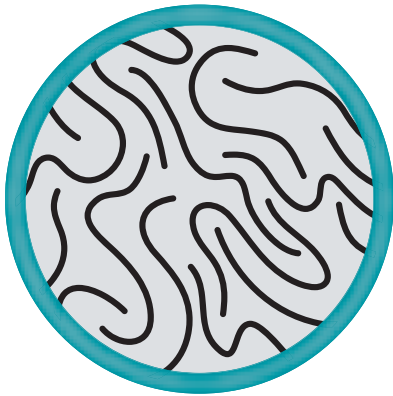
THE SUPERIOR COMPOUNDS TABLE

SPECIFYING COMPOUNDS PRODUCING AN ORDER SPECIFICATION

To ease liaison with our Sales Department and ensure the correct compound and size of seal is ordered, we advise that you apply the following considerations to your specification:

- Highest peak temperature/duration
- Highest operating temperature
- Lowest temperature at which components are expected to still function
- Media contact on assembly and during operation
- Approval for Water, Gas or other legislative requirements
- Static or dynamic working condition (cycle rates/duration)
- Weathering/ozone resistance required
- Likely material being considered: refer to Materials Reference Guide or provide compound designation number (eg, MN70)
- Specific physical property minimums eg. Tensile Strength, Elongation, Compression Set
- System Pressure
- Colour/hardness requirements
- Quality and Documentation requirements
- Lead time plan
- Size of seal (in the case of 'O' rings, inside diameter and cross section)





Molecular structure of rubber, before (left) and after (right) vulcanisation: cross-linking process

The term 'elastomer' describes a unique class of materials that derive from polymers.

Polymers, typically produced from oil-based by-products, consist of long winding chains of repeat monomer units that help to provide their unique properties.

To utilise these properties, compounding ingredients (eg, fillers, vulcanising agents, accelerators, ageing retardants) are mechanically incorporated into the polymer, tying the polymer chains into three-dimensional stabilised structures through heat vulcanisation during moulding.

This structure imparts elasticity into the elastomer from which all its recognisable rubber-like properties are derived.

These cross-linked elastomers are available in a range of different chemical families; they are selected relative to the particular environment that the finished article will experience.

Overall, elastomer types can cover a range of properties including dynamic situations from -70° to $+300^{\circ}\text{C}$, while exhibiting extensive elongation and the capability to seal against such diverse media as gas, water and steam to concentrated aggressive chemicals.



SPECIFYING COMPOUNDS THE SUPERIOR COMPOUNDS TABLE

Compound	ISO 1629 Designation	Hardness	Colour	Temperatures			Material characteristics	Specific applications
				Min	Contin	Max		
MN 40	NBR	40+/-5	Black	-40	+80	+100	Good resistance to aliphatic and low aromatic hydrocarbons (eg, mineral oils & greases, diesel fuel, butane, propane, heating oil and hydraulic HFA, HFB and HFC fluids). Good general mechanical properties.	Meets requirements of BS 2751
MN 50	NBR	50+/-5	Black	-40	+100	+120		
MN 60	NBR	60+/-5	Black	-40	+100	+120		
MN 70	NBR	70+/-5	Black	-40	+100	+120		
MN 80	NBR	80+/-5	Black	-30	+100	+120		
MN 90	NBR	90+/-5	Black	-30	+100	+120		
MN 8/01/15	NBR	75+/-5	Yellow	-40	+90	+110		
MN 1700	NBR	70+/-5	Black	-40	+100	+120		
MN 1759	NBR	80+/-5	Black	-30	+100	+120		
MN 7/0/1	NBR	70+/-5	White	-40	+80	+100		
MN 10/4/1	NBR	70+/-5	Red	-40	+100	+120	Coloured	
MN 12/4/4	NBR	70+/-5	Green	-40	+100	+120	Coloured	
HN 65	NBR	65+/-5	Black	-30	+100	+120	Good resistance to petroleum, mineral oils and greases of a higher aromatic content. Higher resistance to fuels than MN range.	Low permeability and outgassing
HN 75	NBR	75+/-5	Black	-30	+100	+120		
HN 85	NBR	85+/-5	Black	-30	+100	+120		
HN 3/01/11	NBR	85+/-5	Black	-30	+100	+120		
WN 50/1	NBR	50+/-5	Black	-40	+90	+110	Characteristics as per MN range with the addition of good resistance to water.	Drinking water (WRAS + KTW), FDA listed, cold applications
WN 60/1	NBR	60+/-5	Black	-40	+90	+110		Drinking water (WRAS), FDA listed ingredients, low levels of extractables and outstanding hot water resistance
WN 70/2	NBR	70+/-5	Black	-40	+80	+100		Drinking water (NSF 61), FDA listed ingredients, AAA dairy products
WN 12/7/1	NBR	70+/-5	Black	-40	+90	+110		Drinking water (WRAS, KTW, ACS, NSF 61), hot & cold applications. NSF 51 & FDA listed ingredients for food contact, AAA dairy products. Good compression set resistance. Low levels of extractables and very good hot water resistance
FN 70	NBR	70+/-5	Black	-30	+80	+100		FDA listed ingredients (177.2600 and 180.22). Very low levels of extractables

PLEASE NOTE

This compounds table is not exhaustive.
 If required, we are able to provide additional
 elastomers for other working conditions
 or specification.

LN 5/00/1	NBR	60+/-5	Black	-53	+100	+120	Excellent low temperature properties with reasonable resistance to low swell mineral oils and fuels.	Exceptional low temperature resistance
LN 12/8/14	NBR	70+/-5	Black	-53	+100	+120		Exceptional low temperature resistance
LFN 75-80	NBR	75-80	Black	-35	+100	+120		Graphite-filled low friction characteristics
TH 1/9/7	HNBR	70+/-5	Green	-30	+150	+170	Outstanding resistance at elevated temperatures to technical oils containing additives and crude oils.	Coloured
TH 4/7/8	HNBR	70+/-5	Black	-30	+150	+170	Improved ozone resistance compared to MN grade, reasonable low temperature performance and high resistance to abrasion.	Improved aromatic oil and fuel resistance with low temperature flexibility
TH 5/01/4	HNBR	65+/-5	Black	-35	+125	+150		Designed to offer very good flexibility fatigue performance for membrane applications. Approved WRAS hot and cold drinking water
TH 5/03/1	HNBR	70+/-5	Yellow	-40	+150	+170		Gas application, EN549 and DIN EN682 type GAL and GBL. Tested to DVGW's VP614
THX 6/01/2	HNBR	60+/-5	Black	-50	+150	+170		Designed for applications requiring low temperature down to -40°C
EP 50/1	EPDM	50+/-5	Black	-50	+120	+150	Excellent resistance to hot water & steam.	Drinking water (WRAS) hot and cold applications
EP 60/1	EPDM	60+/-5	Black	-50	+120	+150	Good resistance to weathering, ozone and oxidation. Broad acid resistance and glycol based brake fluids,	Drinking water (WRAS) hot and cold applications
EP 70	EPDM	70+/-5	Black	-50	+120	+150	polar solvents and select phosphate ester compatibility. EPDM are not resistant to mineral oils and greases.	Drinking water (WRAS) hot and cold applications
EP 80/2	EPDM	80+/-5	Black	-50	+130	+150		Drinking water (WRAS, KTW, ACS) hot and cold water applications
EP 90/4	EPDM	90+/-5	Black	-30	+120	+150		Drinking water (WRAS), hot and cold applications. Use in high-pressure valve seats and washers
EP 1/1/5	EPDM	70+/-5	Black	-50	+130	+150		Drinking water (WRAS, KTW, ACS, NSF61, KIWA ATA, W270, W534 B5014-1) FDA listed ingredients and EN681-1 for hot and cold water application
EP 1/1/6	EPDM	80+/-5	Black	-50	+120	+150		General purpose EPDM 80 with basic WRAS
EP 2/1/5	EPDM	75+/-5	Blue	-50	+130	+150		Coloured. Low levels of extractables. Applicable for braking systems
EP 2/9/10	EPDM	70+/-5	Black	-50	+130	+150		Excellent compression set resistance and heat ageing properties, drinking water (WRAS, W270 EN681-1) hot and cold applications. FDA listed ingredients.
EP 3/1/3	EPDM	75+/-5	Black	-40	+160	+180		Optimised to provide excellent resistance to Glycol/Water heat transfer fluids in Solar Heating sealing systems.
EP 7/01/28	EPDM	70+/-5	Black	-50	+130	+150		Improved elongation at break, very good compression set resistance

EP 7/3/7	EPDM	75+/-5	Black	-50	+150	+160	Excellent heat resistance, drinking water (WRAS, KTW) hot and cold applications
EP 8/8/6	EPDM	70+/-5	Black	-50	+120	+150	FDA listed ingredients and conforms with AAA sanitary standards
EP 10/00/2	EPDM	65+/-5	Black	-50	+120	+150	Excellent mineral acid resistance, drinking water (WRAS, KTW, ACS, NSF61) and USP class VI FDA listed ingredients
EP 11/8/3	EPDM	80-85	Black	-40	+120	+150	Internal lubrication, drinking water (WRAS, KTW, W270)
SEP 50	EPDM	50+/-5	Black	-40	+80	+100	Sulphur cured
SEP 70	EPDM	70+/-5	Black	-40	+80	+100	Sulphur cured
SEP 80	EPDM	80+/-5	Black	-40	+80	+100	Sulphur cured
SB 565	EPDM	55+/-5	Black	-40	+80	+100	Sulphur cured
NEO 60	CR	60+/-5	Black	-40	+90	+100	Good resistance to weathering and salt water. Fair resistance to low aromatic oils and greases. Good low temperature flexibility. Broad freon resistance. Flame retardant.
NEO 70	CR	70+/-5	Black	-40	+90	+100	
SIL 50	MVQ	50+/-5	Red	-60	+200	+250	Drinking water (WRAS)
SIL 60	MVQ	60+/-5	Red	-60	+200	+250	Drinking water (WRAS)
SIL 70	MVQ	70+/-5	Red	-60	+220	+250	Drinking water (WRAS)
SIL 8500	MVQ	50+/-5	White	-60	+220	+250	FDA listed ingredients
SIL 8600	MVQ	60+/-5	White	-60	+220	+250	FDA listed ingredients
SIL 8601	MVQ	60+/-5	Red	-60	+200	+250	FDA listed ingredients
SIL 8602	MVQ	60+/-5	Red	-60	+200	+250	Higher tensile strength and elongation at break for dynamic and physical environments. FDA listed ingredients and AAA dairy products
SIL 8700	MVQ	70+/-5	White	-60	+220	+250	FDA listed ingredients
SIL 8800	MVQ	80+/-5	Red	-60	+220	+250	FDA listed ingredients
FS 60	MFQ	60+/-5	Blue	-55	+180	+200	Mechanical and physical properties similar to silicone but with improved fuel and oil resistance.
FS 60	MFQ	60+/-5	Bright Red	-55	+180	+200	
FS 70	MFQ	70+/-5	Dull Red	-55	+180	+200	
PA 3/0/1	ACM	70+/-5	Black	-15	+135	+150	Excellent resistance to hot oil environments. Particularly applicable with engine oils and transmission fluids with aggressive additives packages.
VA 4/02/8	AEM	70+/-5	Black	-40	+150	+175	Used for automotive 'underbonnet'; broad media tolerance application

VF 55B	FPM	55+/-5	Black	-20	+220	+250	Excellent resistance to mineral and synthetic oils, fuels and additives, acids, aliphatic and aromatic hydrocarbons. Excellent resistance to high temperatures. High resistance to weathering, ozone and UV. Also exhibits low outgassing for vacuum use. Used with some hydraulic and HFD fluids.	Good compression set resistance
VF 65B	FPM	65+/-5	Black	-20	+220	+250		
VF 75B	FPM	75+/-5	Black	-20	+220	+250		
VF 80B	FPM	80+/-5	Black	-20	+220	+250		Improved extrusion resistance
VF 85B	FPM	85+/-5	Black	-20	+220	+250		Improved low temperature and fuel additive (eg, toluene, methanol) resistance
VB 75B	FPM	75+/-5	Black	-25	+220	+250		
VF 55G	FPM	55+/-5	Green	-20	+200	+250		
VF 60G	FPM	60+/-5	Green	-20	+200	+250		
VF 65G	FPM	65+/-5	Green	-20	+200	+250		
VF 75G	FPM	75+/-5	Green	-20	+200	+250		Drinking water (WRAS), hot and cold applications. Good compression set
VF 3/02/1	FPM	70+/-5	Green	-20	+200	+250		Solar application in contact with air
VF 3/1/4	FPM	70+/-5	Green	-20	+200	+250		
VF 5/4/4	FPM	75+/-5	Green	-25	+200	+250		Improved low temperature resistance and diesel-biodiesel applications
VF 60BR	FPM	60+/-5	Brown	-20	+200	+250		
VF 75BR	FPM	75+/-5	Brown	-20	+200	+250		
VF 9/2/10	FPM	85+/-5	Brown	-20	+200	+250		High pressure. Diesel fuel applications
VF 10/7/11	FPM	70+/-5	Brown	-20	+200	+250		FDA listed ingredients and conforms with AAA sanitary standards
VF 12/99/3	FPM	65+/-5	Grey	-20	+200	+250		Outstanding steam and hot water resistance (+190°C). FDA listed ingredients. Lead-free
VP 3/00/10	FPM	65+/-5	Grey	-20	+200	+250		Improved mineral acid resistance
VP 6/01/1	FPM	75+/-5	Black	-30	+200	+250	Designed to offer very good flexibility fatigue performance for membrane applications with low temperature resistance.	
VF 3/4/3	FPM	70+/-5	Violet	-20	+200	+250	Diesel and biodiesel fuels applications	

BB 2/3/3	IIR	60-65	Black	-50	+110	+130	Excellent resistance to aqueous media, ozone and weathering. Low gas permeability. Good electrical insulation.	Drinking water (WRAS)
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