

## Nebar - Overview of Grades and Applications

### **General**

Nebar is a range of rubber bonded cork gasket materials designed for sealing flat flanges against fluid leakage. They are suitable for use at moderate temperatures - generally not above 110°C - and at relatively low internal system pressures - generally below 5 bar, although in some cases it may be possible to seal system pressures up to 40 bar depending on flange design.

Various grades of Nebar can be used for sealing a wide range of fluids, but none can be used for sealing acids or alkalis, which would degrade the cork.

To specify a Nebar for a particular application it is often possible to give an immediate recommendation, but if the fluid is unknown to us we may need to research the properties of the fluid before recommending a grade. In some cases we may ask for a small sample of the fluid so that we can carry out immersion tests.

### Nebar White (formerly Nebar N6/25 SM)

A medium stiffness Neoprene based gasket, normally used as the prime grade on transformers and electrical switchgear filled with mineral oil. Nebar White is a very high quality material that can also be used in a wide range of industrial applications where a Neoprene/cork gasket is suitable, generally for use with mineral lubricating oils and greases.

### Nebar Brown (formerly Nebar N1, Standard Nebar)

A medium stiffness gasket for general purpose use in industrial applications. For historical reasons, thicknesses below 3mm are based on nitrile/SBR rubbers, and higher thicknesses are based mainly on Neoprene. A high quality material generally for use with mineral lubricating and hydraulic oils and greases, but also suitable for alcohols, glycols, cutting oils, detergents, water and a wide range of aqueous media.

### Nebar Purple

A medium to firm gasket based mainly on nitrile rubber and designed for use in transformers and electrical switchgear. It is suitable for use with all commonly used transformer fluids - mineral oil, Midel and silicone fluids. It was specifically designed to withstand overcompression better than normal rubber/cork gasket materials and has a good tolerance of transient high temperature conditions. It has been tested by a transformer manufacturer in vapour phase drying cycles and is believed to have given good results although a report was never published.

### Nebar Orange (formerly Nebar N2, N7/E, N10/E)

A medium stiffness gasket based on a blend of Neoprene, nitrile and SBR rubbers. This is a cost-effective gasket intended for use in transformers and switchgear filled with mineral oil. It is a high quality gasket and could be used in many industrial applications where a gasket resistant to mineral lubricating and hydraulic oils and greases, alcohols, glycols, cutting oils, detergents and a wide range of aqueous media is required.

### Nebar N75

A medium to firm gasket based on silicone rubber and is intended for use in transformers and switchgear filled with mineral oil. Its special properties are its suitability for use at both high and low temperatures - it withstands operating temperatures up to 150°C, but will also retain flexibility at temperatures down to -50°C. This makes it suitable for transformers in very cold climates, where at such low temperatures normal gaskets become brittle and lose their ability to maintain a reliable seal.

### Nebar Red (formerly Nebar HP)

A firm gasket based on Neoprene and designed for use in transformers and switchgear where high bolting loads are used. Whilst Nebar Red was intended for use with mineral oils, it has also been used successfully in silicone fluid transformers, although this would not be a general recommendation. Its special property is its ability to seal higher internal pressures than medium stiffness cork gaskets when high bolting stresses are used; this however is dependant on the flanges being sufficiently stiff to resist bending. This property also makes it suitable for use in general industrial applications where a neoprene/cork gasket is suitable and where significant internal pressures are involved. With a thin gasket and appropriate bolting and flange arrangement, internal pressures in excess of 20 bar can be sealed.

## Nebar Black (formerly Nebar C947/3)

A special purpose medium to firm gasket based on a blend of nitrile and Neoprene rubbers with a relatively low cork content. Nebar Black was specifically designed to seal hydrogen coolers and transformers filled with sulphur hexafluoride gas.

## Nebar Grey (formerly Nebar N80)

A medium stiffness nitrile gasket designed to meet ABB specifications for transformers. Generally used in mineral oil filled transformers, it is also suitable for Midel and silicone fluids. A high quality pure nitrile gasket which can also be used in general industry where good resistance is required to mineral lubricating and hydraulic oils and greases, diesel oils and fuels, animal and vegetable oils, alcohols, antifreeze, detergents, water and a wide range of aqueous media.

## Nebar Green (formerly Lioncelle CS)

A soft gasket material based on a blend of Neoprene and SBR rubbers, Nebar Green was designed to give a good seal with low bolt loadings on uneven or delicate flanges and low internal system pressures. Suitable for many industrial uses with mineral oils and greases, alcohols, antifreeze, detergents, water and various aqueous media.

## Nebar Yellow (formerly Nebar A/CT)

A medium stiffness gasket based mainly on nitrile rubber and designed specifically to comply with the Ministry of Defense specifications BS 2F66 and DEF22. It is used in mineral oil filled transformers and switchgear and can be used in industry where a nitrile gasket and compliance to these specifications is required.

## Nebar Blue (formerly Nebar PR)

A medium to soft gasket based on a high nitrile rubber. Originally designed for Askarel filled transformers, it has exceptionally good resistance to mineral oils, diesel fuels, kerosene and is suitable for use with hydrocarbon fuels having a relatively high aromatic content. For this reason it is recommended for use with unleaded petrol.

## Nebar GP1

A cost effective medium to firm nitrile based gasket material with good resistance to mineral lubricating and hydraulic oils and greases, diesel oils and fuels, animal and vegetable oils, alcohols, antifreeze, detergents, water and a wide range of aqueous media.

## Nebar GP2

A very cost effective medium stiffness gasket material based on a blend of nitrile and SBR rubbers. It has good resistance to paraffinic mineral oils and greases and is also suitable for use with alcohols, antifreeze, water and a wide range of aqueous media. Not intended for continuous use above 80°C.

## Nebar GP3

A cheap, medium stiffness gasket material based on a blend of nitrile and SBR rubbers, and having moderate resistance to paraffinic mineral oils. Not intended for general use with oils or fuels, but has good resistance to alcohols, antifreeze, detergents, water and a range of aqueous media. Not intended for continuous use above 80°C.

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