

Materials

Common Name/Designation/Composition/Min Temp/Max Temp F°

General Properties

Resistant To

Attacked By

Neoprene
CR
Chloroprene
-30/212°

Good weathering resistance, flame retarding, moderate resistance to petroleum-based fluids

Moderate chemicals and acids, ozone, oils, fats, greases, solvents

Strong oxidizing acids, esters, ketones, chlorinated, aromatic, and nitro hydrocarbons

EPDM
EPDM, EPM
Ethylene-propylene-diene
Ethylene-propylene
-40/300

Excellent ozone, chemical, and aging resistance. Poor resistance to petroleum-based fluids.

Animal and vegetable oils, ozone, strong and oxidizing chemicals.

Mineral oils and solvents, aromatic hydrocarbons.

Buna-N (Nitrile)
NBR
Nitrile-butadiene
-30/250

Excellent resistance to petroleum-based fluids. Good physical properties.

Many hydrocarbons, fats, oils, greases, hydraulic fluids, chemicals.

Ozone (except PVC blends), ketones, esters, aldehydes, chlorinated and nitro hydrocarbons.

Silicone
Q, Si
Polysiloxane
-80/420°

Excellent high and low temperature properties. Fair physical properties.

Moderate or oxidizing chemicals, ozone, concentrated sodium hydroxide.

Many solvents, oils, concentrated acids, dilute sodium hydroxide.

SBR (Red Rubber)
SBR
Styrene-butadiene
-20/212°

Good physical properties and abrasion resistance. Poor resistance to petroleum-based fluids.

Most moderate chemicals, wet or dry, organic acids, alcohols, ketones, aldehydes.

Ozone, strong acids, fats, oils, greases, most hydrocarbons.

Butyl
IIR
Isobutene-isoprene
-60/250°

Very good weather resistance. Excellent dielectric properties. Low permeability to air. Good physical properties. Poor resistance to petroleum-based fluids.

Animal and vegetable fats, oils, greases, ozone, strong and oxidizing chemicals.

Petroleum, solvents, coal tar solvents, aromatic hydrocarbons.

Natural Gum Rubber
NR
Isoprene, natural
-60/220°

Excellent physical properties including abrasion and low temperature resistance. Poor resistance to petroleum-based fluids.

Most moderate chemicals, wet or dry, organic acids, alcohols, ketones, aldehydes.

Ozone, strong acids, fats, oils, greases, most hydrocarbons.

Hypalon
CSM
Chloro-sulfonyl-polyethylene
-40/320°

Excellent ozone, weathering, and acid resistance. Good abrasion and heat resistance. Fair resistance to petroleum-based fluids.

Similar to Neoprene with improved acid resistance.

Concentrated oxidizing acids, esters, ketones, chlorinated, aromatic, and nitro hydrocarbons.

Urethane
AU, EU
Polyether-urethane,
Poly (oxy-1, 4, butylene) ether
-40/175°

Good aging and excellent abrasion, tear, and solvent resistance. Poor high temperature properties.

Ozone, hydrocarbons, moderate chemicals, fats, oils, greases.

Concentrated acids, ketones, esters, chlorinated and nitro hydrocarbons.

Viton, Fluoro-elastomer
FPM
Hexafluoropropylene-vinylidene fluoride
-10/400°

Excellent oil & air resistance both at high and low temperatures. Very good chemical resistance.

All aliphatic, aromatic and halogenated hydrocarbons, acids, animal and vegetable oils.

Ketones, low molecular weight esters and nitro containing compounds.

Fluoro-silicone
Fsl
Fluorocarbon
-60/350°

Offers superior heat resistance, resistant to cold, oils and solvents of fluorinated rubber. Good for special applications where general resistance to oxidizing chemicals, aromatic and chlorinated solvent bases are required. Narrower temp range than silicone but better fluid resistance.

Moderate or oxidizing chemicals, ozone, aromatic chlorinated solvents, bases.

Brake fluids, hydrazine, ketones.

Hydrogenated Nitrile
HNBR
Hydrogenated Acrylonitrile-butadiene rubber
-22/300°

Excellent heat and oil resistance, improved fuel and ozone resistance (approx 5x) over Nitrile. Good abrasion resistance. Decreased elasticity at low temperatures with hydrogenation over standard nitrile.

Many hydrocarbons, transmission fluids, refrigerants, diluted acids, hydraulic fluids, silicone oils, vegetable

Chlorinated hydrocarbons, ketones, strong acids.

Carboxylated Nitrile
XNBR
Carboxylated Nitrile
-20/250°

Excellent abrasion and tear resistance. Fair ozone and steam resistance. Poor to fair sunlight and outdoors. Good to excellent oil resistance.

Many hydrocarbons, fats, oils, greases, hydraulic fluids, chemicals.

Ozone (except PVC blends), ketones, esters, aldehydes, chlorinated and nitro hydrocarbons.