



Wetted Pump Materials

Polypropylene (Natural)

Polypropylene is a good general purpose plastic material used in a wide variety of pumping applications. All-Flo does not use glass fillers in the polypropylene. (Glass fillers will attack hydrofluoric acid and similar chemicals) Temperature range 32 to 150F. Natural polypropylene needs to be protected from direct sunlight. Natural polypropylene will allow light to pass through to the pumped material. (not suitable for UV sensitive paints or inks).

PVDF

Polyvinylidene Fluoride or PVDF is a specialty plastic material in the fluoropolymer family and is used generally in applications requiring the highest purity, strength, resistance to solvents, acids, bases and low smoke generation during a fire event. Temperature range 10 to 200F. PVDF is an FDA accepted material.

Nylon

Nylon is a material used when pumping solvents, oils, paints and inks. Temperature range 10F to 150F.

Conductive Nylon

Conductive Nylon is Nylon with stainless steel fillers to allow the pump to be groundable. Conductive nylon is used for pumping solvents that have the potential to cause an explosion from an electrical spark from static electricity. Temperature range 0F to 150F.

Aluminum

Aluminum is a light weight metal used for many non corrosive chemicals, oils and solvents. Do not use aluminum when pumping halogenated solvents. Temperature limit of 212F.

316 SS

316 Stainless Steel (ANSI CF-8M) is used on moderately corrosive liquids and halogenated solvents and has excellent abrasion resistance. Temperature limit of 212F.

Electro Polished and passivated 316SS

Electro polishing or electrochemical polishing is a process that removes material from a metallic service. Passivation is the formation of a hard nonreactive surface film that inhibits further corrosion by dipping the stainless steel in a nitric acid solution. Electro Polished and passivated 316SS pumps are normally used on food applications where FDA approved materials are required. Temperature limit of 212F.

Wetted Elastomers

Nitrile

Nitrile is a general purpose elastomer used on water and most oils. Temperature range 10F to 180F.

EPDM

EPDM is a general purpose elastomer with good resistance to many acids and bases. Temperature range -40F to 212F.

Viton®

Viton® is an elastomer with good corrosion resistance to a wide variety of chemicals. Temperature range -20F to 212F.



Geolast®

Geolast® is an injection molded thermoplastic material with characteristics similar to Nitrile. Has excellent abrasion resistance. Temperature range 10 to 180F.

Santoprene®

Santoprene® is an injection molded thermoplastic material with characteristics similar to EPDM. Has excellent abrasion resistance. Temperature range -40 to 212F.

PTFE

PTFE or polytetrafluoroethylene is a thermoplastic polymer that is inert to most chemicals. Temperature range 40 to 212F. PTFE is an FDA accepted material.

Urethane

Urethane is a general purpose elastomer that has excellent abrasion resistance. Temperature range 10 to 150F.

FDA Nitrile, FDA EPDM, FDA Viton®, FDA Santoprene® and FDA Hytrel® are FDA accepted materials.

Viton® is a registered trademark of DuPont Performance Elastomers L.L.C.

Geolast® is a registered trademark of ExxonMobil Chemical Co.

Santoprene® is a registered trademark of ExxonMobil Chemical Co.



Elastomer Properties & Applications

PURE GUM RUBBER (PGR)

Excellent resiliency, tensile strength, and abrasion resistance. Generally good for most weak chemicals, wet or dry organic acids, sodium hydroxide (caustic), alcohols and ketones.

Affected By: Ozone, strong acids, fats, oils, greases, wet chlorine gas, methane and most hydrocarbons.

Operating Temperature Range: -50° F to +180° F

NEOPRENE

Generally resistant to moderate chemicals, ozone, fats, sodium hydroxide (caustic), methane and most hydrocarbons.

Affected By: Strong oxidizing acids, acetic acid, ketones, wet chlorine gas, chlorinated and nitro-hydrocarbons, and aromatic hydrocarbons.

Operating Temperature Range: -50° F to +230° F

WHITE FOOD GRADE NEOPRENE

Generally resistant to moderate chemicals, ozone, fats, sodium hydroxide (caustic), methane and most hydrocarbons.

Affected By: Strong oxidizing acids, acetic acid, ketones, wet chlorine gas, chlorinated and nitro-hydrocarbons, and aromatic hydrocarbons.

Operating Temperature Range: -50° F to +230° F

EPDM (NORDEL)

Excellent abrasion and chemical resistance at elevated temperatures. Good with dilute acids (sulfuric & acetic), steam, ketones, sodium hydroxide (caustic), hydrogen sulfide and domestic wastewater. Good UV resistance. Also used with radioactive wastewaters.

Affected By: Petroleum oils, hydrochloric acid, concentrated methane, wet chlorine gas.

Operating Temperature Range: -50° F to +300° F

WHITE FOOD GRADE EPDM (NORDEL)

Excellent abrasion and chemical resistance at elevated temperatures. Good with dilute acids, (sulfuric & acetic), steam, ketones, sodium hydroxide (caustic), hydrogen sulfide and domestic wastewater. Good UV resistance. Also used with radioactive wastewaters.

Affected By: Petroleum oils, hydrochloric acid, concentrated methane, wet chlorine gas.

Operating Temperature Range: -50° F to +300° F



BUNA-N

Resistant to many hydrocarbons, fats, oils, grease, kerosene, and moderate chemicals. Excellent with methane.

Affected By: Ozone, strong acids, hydrogen sulfide and ketones.

Operating Temperature Range: -30° F to +230° F

WHITE FOOD GRADE BUNA-N

Resistant to many hydrocarbons, fats, oils, grease, kerosene, and moderate chemicals. Excellent with methane.

Affected By: Ozone, strong acids, hydrogen sulfide and ketones.

Operating Temperature Range: -30° F to +230° F

HYPALON

Resistant to heat, ozone, weathering, sodium hydroxide (caustic), and oxidizing chemicals. Good resistance to strong acids at room temperature and methane. Resistant to some hydrocarbons, alcohols

Affected By: Aromatic ketones, acetyl compounds, benzene compounds, petroleum oils, wet chlorine gas.

Operating Temperature Range: -50° F to +300° F

VITON

Resistant to many halogenated hydrocarbons, fats, oils, grease, sodium hydroxide (caustic), solvents and most chemicals. Excellent resistance to ozone, oxygen, methane, and weathering.

Affected By: Ketones, esters, hydrogen sulfide, and anhydrous ammonia.

Operating Temperature Range: -10° F to +400° F

WHITE FOOD GRADE VITON

Resistant to many halogenated hydrocarbons, fats, oils, grease, sodium hydroxide (caustic), solvents and most chemicals. Excellent resistance to ozone, oxygen, methane, and weathering.

Affected By: Ketones, esters, hydrogen sulfide, and anhydrous ammonia.

Operating Temperature Range: -10° F to +400° F
