

Materials of Construction for Housings, Elements and Seals

Carbon steel without coating – General purpose for non-corrosive and non-oxidizing liquids.

Carbon steel with protective internal coating – This internal coating protects against UV, abrasion and corrosion, and should be specified for water applications, such as river water, service water, cooling water, clear run water from sewage treatment facilities, etc.

304 Series stainless steel – Widely available, good general corrosion resistance, good cryogenic toughness. Excellent formability and weldability.

316 Series (L and Ti) stainless steel – Widely available, good general corrosion resistance, good cryogenic toughness. Excellent formability and weldability.

Polyamide (filter element end caps) – General-purpose polymer (amide) for use in applications such as hydraulics and pneumatics. Resistant to oils, hydraulic fluids, water fuels, gases, petroleum oils, cold water, silicone greases and oils Di-ester base lubricants (MIL-L-7808) ethylene glycol base fluids (Hydrolubes) not suited for use in brake fluids. Good abrasion resistance. Good resistance to compression set. High tensile strength. Characteristics: Stable plastic. Dull, matte finish.

PTFE / Teflon® (a registered trademark of DuPont Dow Elastomers) – General-purpose thermoplastic (Polytetrafluoroethylene) for use as a low friction, insulating product that is inert to most chemical substances.

Buna N / NBR (nitrile) – General purpose elastomer for use as seal energizer or low-pressure applications, such as hydraulics and pneumatics. Resistant to oils, hydraulic fluids, water fuels, gases, petroleum oils, cold water, silicone greases and oils. Di-ester base lubricants (MIL-L-7808), ethylene glycol base fluids (Hydrolubes) not suited for use in brake fluids. Good abrasion resistance. Good resistance to compression set. High tensile strength. Characteristics: Rubber-like elastomer. Dull, matte finish. Some NBR o-rings have a very shiny surface.

Silicone – General-purpose elastomer for use as seal material. Resists water and many chemicals such as some acids, oxidizing chemicals, ammonia and isopropyl alcohol. Note: concentrated acids, alkalines and solvents should not be used with silicone rubber. Characteristics: Soft rubber-like elastomer. High tear and tensile strength, good elongation, excellent flexibility.

Viton® (a registered trademark of DuPont Dow Elastomers) – Widely available elastomer for use as seal energizer or low-pressure applications, such as process fluids, hydraulics and pneumatics. Highly resistant to many aggressive fluids, such as fuels and chemicals. Characteristics: Rubber-like elastomer. ISO 9000 registration.

EPDM (Ethylene Propylene Diene) – Versatile and widely used synthetic rubber recognized for its resistance to heat, oxidation, weather, and electricity. Compatible with water, acids, alkalies, phosphate esters and many ketones and alcohols.

Cleaning Reusable Filter Elements – The cleaning methods for the reusable elements depend upon the type of service and the filter element design. The individual cleaning methods described here can be combined to achieve better results. It is not advisable to attempt most of these cleaning methods without the proper equipment and training. There are competent organizations best suited for this type of work. Upon request, we will provide a cleanliness certificate, including the results of a bubble-point test as well as the clean and fully laden element weights.

Pyrolysis – This method is based upon the removal of organic materials imbedded within the element. Organic material is vaporized at high temperature in an oxygen-depleted atmosphere. Exact control of the temperature and oxygen content is required to avoid damage to the element of the possibility of flame generation.

Vacuum Pyrolysis – This method is based upon the removal of plastic materials imbedded within the element using a two-step process. Organic material is vaporized at high temperature in an oxygen-depleted atmosphere within a vacuum chamber. In this process the material to be removed is melted into liquid and evacuated via vacuum in the first step, then further heating vaporizes the remaining material in the second step. Exact control of the vacuum, temperature and oxygen content is required to avoid damage to the element of the possibility of flame generation.

Boil Off – This method is based upon a process similar to a commercial dishwasher. Constant flowing of a flushing liquid (typically a solvent) at high temperature ensures removal of particles.

High Pressure Wash – This method is used mainly for the removal of coarse particles from the filter elements. It can be a manual or automatic process depending on the equipment available. A standard high pressure using water or water-based solvents can be used taking care not to damage the element. The wash direction must be consistent with the flow direction of the element.

Ultrasonic Cleaning – This method utilizes an ultrasonic bath, which easily loosens the particles imbedded in the filter element. Using water with a detergent additive, a 20 to 40 Hz frequency is recommended. Solvents other than standard detergents can be used also.

The information provided in this section is for reference only, and should be used as a guide when selecting the proper filters, elements, materials of construction and determining fluid compatibility. Schroeder Industries presents the information in this medium in good faith, and it is believed to be accurate and correct. No representations or warranties as to the completeness or accuracy of the information are made by Schroeder. The persons receiving or using this information must make their own determinations as to intended use, purpose and application. Schroeder will assume no responsibility for damages or be held liable for any misuse or misapplication based upon the data within this medium. For your specific application, contact Schroeder Industries at www.schroederpure.com by phone at 724.318.1100 or fax at 724.318.1200.