PALL Laboratory

# Chemical Compatibility

## *Media Materials*

| | Acids | | | | | | | | | | | Alcohols | | | | | | Bases | | | | | Esters | | | | | | Ethers | | | Glycols | | | Aromatic Hydrocarbons | | | Halogenated Hydrocarbons | | | | | Ketones | | | | Oils | | Miscellaneous | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Acetic acid, glacial | Acetic acid, 90% | Acetic acid, 30% | Acetic acid, 10% | Hydrochloric acid, conc. (35%) | Hydrochloric acid, 6N (20%) | Hydrochloric acid, 1N (3.3%) | Nitric acid, conc. (67%) | Nitric acid, 6N (27%) | Sulfuric acid, conc. (96%) | Sulfuric acid, 6N (16%) | Amyl alcohol | Benzyl alcohol | Butanol | Ethanol | Isopropanol | Methanol | Ammonium hydroxide, 3N (5.7%) | Ammonium hydroxide, 6N (11.4%) | Potassium hydroxide, 3N (15%) | Sodium hydroxide, 3N (11%) | Sodium hydroxide, 6N (22%) | Amyl acetate | Butyl acetate | Cellosolve acetate | Ethyl acetate | Isopropyl acetate | Methyl acetate | Ethyl ether | Tetrahydrofuran | Tetrahydrofuran/water (50/50,v/v) | Ethylene glycol | Glycerol | Propylene glycol | Benzene | Toluene | Xylene | Carbon tetrachloride | Chloroform | Ethylene dichloride | Methylene chloride | Tetrachloroethylene | Acetone | Cyclohexanone | Methyl ethyl ketone (MEK) | Methyl isobutyl ketone | Cottonseed | Peanut | Acetonitrile | Dimethyl formamide (DMF) | Dimethyl sulfoxide (DMSO) | Formaldehyde, 37% | Formaldehyde, 4% | Hexane, dry | Kerosene | Pyridine | 18 Megohm water |
| **Biodyne® Membrane** | N | N | N | N | N | N | N | N | N | N | N | R | N | R | R | R | R | L | L | N | L | N | R | R | R | R | R | R | R | R | R | N | R | L | L | L | L | L | L | L | L | L | R | N | R | R | R | R | R | R | R | R | R | R | R | L | R |
| **Bio-Inert® (Nylon) Membrane** | N | N | N | N | N | N | N | N | N | N | N | R | R | R | R | R | R | L | L | N | L | N | R | R | R | R | R | R | R | R | R | N | R | L | L | L | L | L | L | L | L | L | R | N | R | R | R | R | R | R | R | R | R | R | R | L | R |
| **BioTrace™ NT Membrane** | N | - | - | - | N | - | - | N | - | N | - | R | N | L | N | R | N | - | - | N | - | - | N | N | N | N | N | N | N | N | - | N | R | R | R | R | R | R | R | R | N | R | N | N | N | N | R | R | N | N | N | N | - | R | R | N | R |
| **Emflon® II (PVDF) Membrane** | R | R | R | R | R | R | R | R | R | N | - | R | R | R | R | R | R | - | N | N | N | N | R | R | L | R | R | R | R | N | - | R | R | R | R | R | R | R | R | R | R | R | N | L | N | N | R | R | R | N | N | R | R | R | R | N | R |
| **Fluorodyne® II (PVDF) Membrane** | R | R | R | R | R | R | R | R | R | N | - | R | R | R | R | R | R | N | N | N | N | N | R | R | L | R | R | R | R | N | - | R | R | R | R | R | R | R | R | R | R | R | N | L | N | N | R | R | R | N | N | R | R | R | R | N | R |
| **FluoroTrans® W (PVDF) Membrane** | R | R | R | R | R | R | R | R | R | N | - | R | R | R | R | R | R | - | N | N | N | N | R | R | L | R | R | R | R | N | - | R | R | R | R | R | R | R | R | R | R | R | N | L | N | N | R | R | R | N | N | R | R | R | R | N | R |
| **GLA-5000 (PVC) Membrane** | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | N | N | N | N | N | N | N | N | - | R | R | R | N | N | N | R | N | N | N | N | N | N | N | N | R | R | N | N | N | R | R | R | R | N | R |
| **Glass Fiber Media** | R | R | R | R | R | R | R | L | - | R | R | R | N | R | R | R | R | R | R | N | - | - | R | R | R | R | R | R | R | L | - | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| **GN Metricel® (MCE) Membrane** | N | - | - | - | N | - | - | N | - | N | - | R | N | L | N | R | N | - | - | N | - | - | N | N | N | N | N | N | N | N | - | N | R | R | R | R | R | R | R | R | N | R | N | N | N | N | R | R | N | N | N | N | - | R | R | N | R |
| **Metricel Black Membrane** | R | R | R | R | R | R | - | N | - | N | N | R | R | R | R | R | R | R | R | R | R | R | R | R | R | N | R | N | R | N | - | R | R | R | R | R | R | R | N | N | N | R | N | N | N | R | R | R | N | N | N | R | R | L | R | N | R |
| **Mustang® E Membrane*** | R | R | R | R | R | R | R | N | - | N | - | N | N | R | R | R | R | R | R | R | R | R | R | R | R | N | R | N | R | N | - | R | R | R | R | R | R | R | N | N | N | R | N | N | N | R | R | R | R | N | N | R | R | L | R | N | R |
| **Mustang Q Membrane*** | R | R | R | R | R | R | R | N | - | N | - | N | N | R | R | R | R | R | R | R | R | R | R | R | R | N | R | N | R | N | - | R | R | R | R | R | R | R | N | N | N | R | N | N | N | R | R | R | R | N | N | R | R | L | R | N | R |
| **Mustang S Membrane*** | R | R | R | R | R | R | R | N | - | N | - | N | N | R | R | R | R | R | R | R | R | R | R | R | R | N | R | N | R | N | - | R | R | R | R | R | R | R | N | N | N | R | N | N | N | R | R | R | R | N | N | R | R | L | R | N | R |
| **Nylaflo™ (Nylon) Membrane** | N | N | L | R | R | R | R | N | L | N | L | L | N | L | R | L | L | R | L | R | R | L | L | R | - | R | N | N | N | R | - | R | R | - | R | L | L | R | R | N | R | L | L | R | L | L | R | R | - | N | - | R | R | L | L | N | R |
| **Posidyne® Nylon Membrane*** | R | R | R | R | R | R | R | N | - | N | - | N | N | R | R | R | R | R | R | R | R | R | R | R | R | N | R | N | R | N | - | R | R | R | R | R | R | R | N | N | N | R | N | N | N | R | R | R | R | N | N | R | R | L | R | N | R |
| **Supor®, Supor EKV (PES) Membrane** | R | R | R | R | R | R | R | N | - | N | - | N | N | R | R | R | R | R | R | R | R | R | R | R | R | N | R | N | R | N | - | R | R | R | R | R | R | R | N | N | N | R | N | N | N | R | R | R | R | N | N | R | R | L | R | N | R |
| **Teflo, TF (PTFE) Membrane** | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| **Ultipor® N66 Membrane** | N | N | N | N | N | N | N | N | N | N | N | R | N | R | R | N | R | L | L | N | L | N | R | R | R | R | R | R | R | R | R | R | R | R | L | L | L | L | N | N | L | - | R | N | R | R | R | R | R | R | - | R | R | R | - | L | R |
| **Versapor® Membrane** | N | - | - | - | N | - | L | N | - | N | - | R | R | R | R | R | R | R | R | R | R | R | R | L | R | R | R | R | R | N | - | R | R | R | R | R | R | N | N | N | N | R | N | N | N | L | L | R | N | N | N | R | R | R | R | L | R |
| **wwPTFE Membrane** | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |

### Test Methods

The data presented in this chart is a compilation of testing by Pall Corporation with certain chemicals, manufacturer's data, or compatibility recommendations from the *Compass Corrosion Guide* by Kenneth M. Pruett. This data is intended to provide expected results when filtration devices are exposed to chemicals under static conditions for 48 hours at 25 °C (77 °F), unless otherwise noted. Membrane integrity for syringe filters was tested by bubble point.

This chart is intended only as a guide. Accuracy cannot be guaranteed. Users should verify chemical compatibility with a specific filter under actual use conditions. Because chemical compatibility is affected by many variables (including temperature, pressure, concentration, and purity), various chemical combinations prevent complete accuracy.

### Caution

Alcohol residues that are allowed to dry on a filter may cause stress cracks. Pall Corporation recommends that filters used in alcohol processing should remain alcohol wet or should be flushed with copious quantities of water to remove residuals prior to drying and subsequent reuse.

**R = Resistant**
No significant change was observed in flow rate or bubble point of the membrane. No visible indication of chemical attack was detected.

**L = Limited Resistance**
Moderate changes in physical properties or dimensions of the membrane were observed. The filter may be suitable for short term, non-critical use. Hardware or housing may be suitable for short-term exposure at low pressures and ambient temperatures.

**N = Not Resistant**
The membrane or housing is basically unstable and is not recommended for use.

**- = Insufficient Data**
Information is not available. Trial testing is recommended.

**Chemical compatibility refers to the base membrane. The effect of various chemicals on the surface chemistry has not been tested.*

PALL Laboratory

**Corporate Headquarters**
25 Harbor Park Drive
Port Washington, New York 11050

*Filtration. Separation. Solution.*℠

**Visit us on the Web at www.pall.com/lab**
**E-mail us at LabCustomerSupport@pall.com**

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