



# **FluoroGrip® - F**

Teflon® (FEP) Fluoropolymer

CHEMICAL RESISTANCE DATA

TABLE 1: FEP – Effect of Chemical Immersion (168 hr)

| Chemical                           | Test Temperature |     | % Retained Physicals |            | % Weight Gain |
|------------------------------------|------------------|-----|----------------------|------------|---------------|
|                                    | °C               | °F  | Tensile              | Elongation |               |
| <b>INORGANIC CHEMICALS</b>         |                  |     |                      |            |               |
| <b><u>Mineral Acid</u></b>         |                  |     |                      |            |               |
| Hydrochloric (Conc)                | 120              | 248 | 98                   | 100        | 0.0           |
| Sulfuric (Conc)                    | 120              | 248 | 95                   | 98         | 0.0           |
| Hydrofluoric (60%)                 | 23               | 73  | 99                   | 99         | 0.0           |
| Fuming Sulfuric                    | 23               | 73  | 95                   | 96         | 0.0           |
| <b><u>Oxidizing Acids</u></b>      |                  |     |                      |            |               |
| Aqua Regia                         | 120              | 248 | 99                   | 100        | 0.0           |
| Chromic (50%)                      | 120              | 248 | 93                   | 97         | 0.0           |
| Nitric (Conc)                      | 120              | 248 | 95                   | 98         | 0.0           |
| Fuming Nitric                      | 23               | 73  | 99                   | 99         | 0.0           |
| <b><u>Inorganic Bases</u></b>      |                  |     |                      |            |               |
| Ammonium Hydroxide (Conc)          | 66               | 150 | 98                   | 100        | 0.0           |
| Sodium Hydroxide (50%)             | 120              | 248 | 93                   | 99         | 0.4           |
| <b><u>Peroxide</u></b>             |                  |     |                      |            |               |
| Hydrogen Peroxide (30%)            | 23               | 73  | 93                   | 95         | 0.0           |
| <b><u>Halogens</u></b>             |                  |     |                      |            |               |
| Bromine                            | 23               | 73  | 99                   | 100        | 0.5           |
| Bromine                            | 59*              | 138 | 95                   | 95         | **            |
| Chlorine                           | 120              | 248 | 92                   | 100        | 0.5           |
| <b><u>Metal Salt Solutions</u></b> |                  |     |                      |            |               |
| Ferric Chloride                    | 100              | 212 | 93                   | 98         | 0.0           |
| Zinc Chloride (25%)                | 100              | 212 | 96                   | 100        | 0.0           |
| <b><u>Other Inorganics</u></b>     |                  |     |                      |            |               |
| Sulfuryl Chloride                  | 69*              | 156 | 83                   | 100        | 2.7           |
| Chlorosulfonic Acid                | 151*             | 304 | 91                   | 100        | 0.7           |
| Phosphoric Acid (Conc)             | 100              | 212 | 93                   | 100        | 0.0           |
| <b>ORGANIC CHEMICALS</b>           |                  |     |                      |            |               |
| <b><u>Acids / Anhydrides</u></b>   |                  |     |                      |            |               |
| Glacial Acetic Acid                | 118*             | 244 | 95                   | 100        | 0.4           |
| Acetic Anhydride                   | 139*             | 282 | 91                   | 99         | 0.3           |
| Trichloroacetic Acid               | 196*             | 384 | 90                   | 100        | 2.2           |
| <b><u>Hydrocarbons</u></b>         |                  |     |                      |            |               |
| Isooctane                          | 99*              | 210 | 94                   | 100        | 0.7           |
| Naphtha                            | 100              | 212 | 91                   | 100        | 0.5           |
| Mineral Oil                        | 180              | 356 | 87                   | 95         | 0.0           |
| Toluene                            | 110              | 230 | 88                   | 100        | 0.7           |

\* Boiling Point

\*\* No Data

| Chemical                           | Test Temperature |      | % Retained Physicals |            | % Weight Gain |
|------------------------------------|------------------|------|----------------------|------------|---------------|
|                                    | °C               | °F   | Tensile              | Elongation |               |
| <b>ORGANIC CHEMICALS</b>           |                  |      |                      |            |               |
| <b><u>Functional Aromatics</u></b> |                  |      |                      |            |               |
| O-Cresol                           | 191*             | 376  | 92                   | 96         | 0.2           |
| Nitrobenzene                       | 210*             | 410  | 90                   | 100        | 0.7           |
| <b><u>Alcohol</u></b>              |                  |      |                      |            |               |
| Benzyl Alcohol                     | 205*             | 401* | 93                   | 99         | 0.3           |
| <b><u>Amines</u></b>               |                  |      |                      |            |               |
| Aniline                            | 185*             | 365  | 94                   | 100        | 0.3           |
| nButylamine                        | 78*              | 172  | 86                   | 97         | 0.4           |
| Ethylenediamine                    | 117*             | 242  | 96                   | 100        | 0.1           |
| <b><u>Ether</u></b>                |                  |      |                      |            |               |
| Tetrahydrofuran                    | 66*              | 151  | 88                   | 100        | 0.7           |
| <b><u>Ketones / Aldehydes</u></b>  |                  |      |                      |            |               |
| Benzaldehyde                       | 179*             | 355  | 90                   | 99         | 0.5           |
| Cyclohexanone                      | 156*             | 312  | 92                   | 100        | 0.4           |
| Methyl Ethyl Ketone                | 80*              | 176  | 90                   | 100        | 0.4           |
| Acetophenone                       | 202*             | 396  | 90                   | 100        | 0.6           |
| <b><u>Esters</u></b>               |                  |      |                      |            |               |
| Dimethylphthalate                  | 220              | 392  | 98                   | 100        | 0.3           |
| nButylacetate                      | 125*             | 257  | 93                   | 100        | 0.5           |
| Tri-n-Butyl Phosphate              | 200              | 392  | 91                   | 100        | 2.0           |
| <b><u>Chlorinated Solvents</u></b> |                  |      |                      |            |               |
| Methylene Chloride                 | 40*              | 104  | 94                   | 100        | 0.8           |
| Perchloroethylene                  | 121*             | 250  | 86                   | 100        | 2.0           |
| Carbon Tetrachloride               | 77*              | 171  | 87                   | 100        | 2.3           |
| <b><u>Polymer Solvents</u></b>     |                  |      |                      |            |               |
| Dimethylformamide                  | 154*             | 309  | 96                   | 100        | 0.2           |
| Dimethylsulfoxide                  | 189*             | 372  | 95                   | 100        | 0.1           |
| Dioxane                            | 101*             | 214  | 92                   | 100        | 0.6           |

\* Boiling Point

\*\* No Data

| Chemical             | Exposure Results |                |
|----------------------|------------------|----------------|
|                      | % Concentration  | %Weight Change |
| Hydrochloric Acid    | 35               | 0.0            |
| Sulfuric Acid        | 98               | 0.0            |
| Nitric Acid          | 60               | -0.1           |
| Fluoric Acid         | 50               | 0.0            |
| Acetic Acid          | 50               | 0.0            |
| Chromic Acid         | 50               | 0.0            |
| Acetic Anhydride     | 100              | +0.1           |
| Caustic Soda         | 50               | 0.0            |
| Ammonia Water        | 100              | 0.0            |
| Potassium Dichromate | 50               | 0.0            |
| Sodium Chloride      | 28               | 0.0            |
| Methyl Alcohol       | 10               | 0.0            |
| Ethyl Alcohol        | 30               | 0.0            |
| Acetone              | 100              | +0.2           |
| Carbon Tetrachloride | 100              | +2.2           |
| Chloroform           | 100              | +1.1           |
| Trichloroethylene    | 100              | +1.1           |
| Toluene              | 100              | +0.3           |
| Xylene               | 100              | +0.3           |
| Benzene              | 100              | +0.4           |
| n-Hexane             | 100              | +0.5           |
| Methyl Ethyl Ketone  | 100              | +0.3           |
| Aniline              | 100              | 0.0            |
| Ethyl Acetate        | 100              | +0.3           |
| Ether                | 100              | +0.3           |
| Dioxane              | 100              | +0.3           |
| Diethylamine         | 100              | +0.6           |
| Formaldehyde         | 100              | 0.0            |
| Phenol               | 100              | 0.0            |