



# Materials Technology

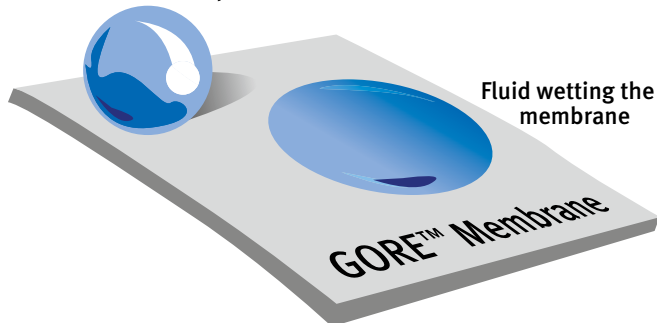
## Oil Repellency

### CONFORMS TO QATM 708.

While all PTFE is hydrophobic, or “water-fearing,” Gore has a full a line of oleophobic or “oil fearing” membranes. This enables GORE™ Oleophobic Membranes to resist the penetration of low surface tension contaminants such as cleaning agents, detergents, oils and chemicals. It also gives the membrane better roll-off characteristics so that dirt and oil will not block the airflow, even after repeated exposures.

Oil repellency is tested according to the American Association of Textile Chemists and Colorists (AATCC) test standard 118-1989. A drop of fluid with a known surface tension is placed on the material and observed for 30 seconds for “wetting,” which is the process of the liquid moving into the membrane structure. The oil rating is the number of the fluid with the lowest surface tension that did not wet out the membrane.

Clear, well-rounded drop



| OIL RATING | TEST FLUID  | SURFACE TENSION (dynes/cm) |
|------------|-------------|----------------------------|
| 3          | Hexadecane  | 29                         |
| 4          | Tetradecane | 27                         |
| 5          | Dodecane    | 24.5                       |
| 6          | Decane      | 24                         |
| 7          | Octane      | 21                         |
| 8          | Heptane     | 19.5                       |
| 9          | Hexane      | 18                         |

### SURFACE TENSIONS OF SOME TYPICAL FLUIDS:

| FLUID                       | SURFACE TENSION (dynes/cm) |
|-----------------------------|----------------------------|
| Water                       | 73                         |
| 10% Methyl Alcohol in Water | 59                         |
| Castor Oil                  | 36                         |
| Benzene                     | 29                         |
| Ethyl Alcohol               | 24                         |
| Acetone                     | 24                         |
| Methanol                    | 24                         |
| IPA                         | 22                         |

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