

### Engineered lubricants suitable for plant-wide mechanical seal support

Mechanical seals endure tens of thousands of hours of operation in every type of fluid that may be transported throughout a plant. Many of these fluids challenge seals by being dirty, contaminated, hot, hazardous, flammable, providing poor lubrication, changing phases, solidifying, coking, crystallizing and plating out.

For many of these applications, a barrier fluid must be selected that is environmentally safe, non-reactive with the process fluid, and a good mechanical seal face lubricant.

### DuraClear contains no detergents or heavy metals

Detergents and heavy metals in conventional multi-use oils can damage mechanical seals by carrying abrasive sub-micron sized particles between the seal face running surfaces, which may score or plate out on the high-precision seal face surfaces. DuraClear barrier fluids are formulated specifically for the mechanical seal and barrier fluid reservoir environment and do not include harmful additives which were designed for other duties.

### DuraClear-compatible API 682 piping plans

- Plan 52
- Plan 53A/B/C
- Plan 54
- Plan 55



DuraClear oils are formulated for the complex lubrication requirements demanded by mechanical seals. The performance benefits over general duty lubricants have been recognized in lab testing and proven in the field.

### The ideal fluid for a seal to operate on is DuraClear

DuraClear barrier fluid grades 5-F (ISO 5), 17-F (ISO 17) and 32-F (ISO 32) are workhorse seal lubricants, capable of covering the majority of barrier and buffer fluid needs within chemical, petrochemical, pipeline and refinery plants. These DuraClear grades are fully synthetic poly-alpha olefin (PAO) based oils which offer numerous performance advantages over mineral oils, including:

- Reduced friction and wear
- Oxidation resistance and high-temperature stability
- Low-temperature fluidity and lubrication
- Chemically stable and compatible with most process fluids
- Low volatility and hydrolytic stability
- Less sludge and varnish build-up
- Longer life means fewer drain intervals and less lubricant disposal
- Reduced lubricant and energy consumption
- Non-toxic, non-hazardous, environmentally safe
- Food-grade, NSF H-1 certified



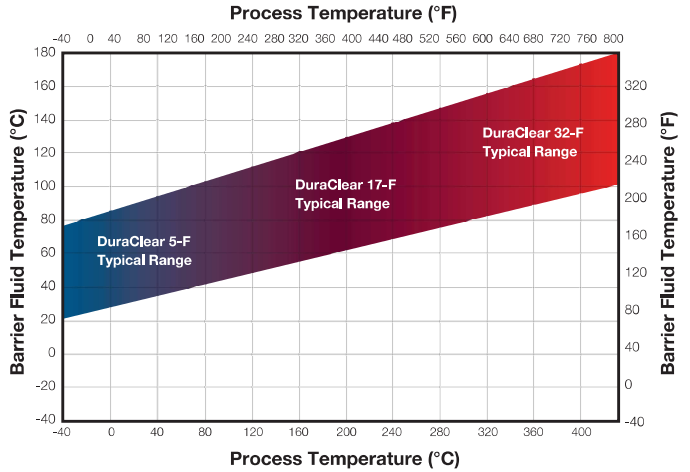
## Know your barrier fluid operating temperature

There are numerous factors that must be considered when choosing the proper barrier fluid. The one least likely to be known is the barrier fluid operating temperature. Flowserve has customized application tools that allow us to accurately estimate barrier fluid temperature considering dozens of application factors, including speed, pressure, seal type and process fluid properties. Once barrier fluid operating temperature is known, the selected barrier fluid should be confirmed compatible with the process fluid.



Example of a carbon blister caused by improper barrier fluid selection

For a complete listing of typical fluid properties of DC-5-F, DC-17-F and DC-32-F, consult Flowserve Technical Document FTA114.



## Compatible with all Flowserve seal face materials

- Carbons
- Silicon carbides
- Tungsten carbides

While some barrier fluids are too thin to support hard vs. hard seal faces and other barrier fluids cause blistering on carbon seal faces, DuraClear can support any combination of the above mentioned seal face materials under most conditions.

Product Name	ISO Viscosity	Description	Food-Grade	Case P/N Four 1-gallon	Pail P/N 5-gallon	Barrel P/N 55-gallon
DC-5-F	5	Pure synthetic barrier fluid	Yes	MLA324860EA	MLA32486052	MLA32486002
DC-17-F	17	Pure synthetic barrier fluid	Yes	MLA324860EC	MLA32486054	MLA32486004
DC-32-F	32	High-temperature synthetic barrier fluid	Yes	MLA324860EB	MLA32486053	MLA32486003

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