



Vespel®

Parts and Shapes

Vespel® CR-6100 Pump Wear Components Application Summary

Product Description

Vespel® CR-6100 wear components are based on an advanced composite material consisting of a high performance Teflon® PFA fluorocarbon resin and oriented carbon fibers. The patented manufacturing process creates parts which exhibit:

- Excellent dimensional stability
- Outstanding run-dry performance
- High temperature serviceability (up to 550° F)
- Broad chemical compatibility
- Excellent machining and installation characteristics

Vespel® CR-6100 wear components have been successfully used in hundreds of centrifugal pumps in major refineries, chemical plants, power plants, pipeline terminals, and municipal water utilities.



Vespel® CR-6100 is fast and easy to machine.

Why Use Vespel® CR-6100

Pump performance and reliability are significantly improved

- Because CR-6100 is non-metallic, has a low coefficient of friction, and excellent dimensional stability, it can withstand short-duration off-design conditions such as start-up, slow-rolling, low-flow, cavitation, or run-dry situations. The pump remains available for service and repair costs are reduced.
- With these characteristics, clearance at wear components can be reduced. This results in efficiency gains which lead to significant operating cost reductions, particularly when applied to populations of pumps.
- Improved reliability: Pumps with reduced clearance also exhibit lower vibration levels and reduced cavitation. Seals and bearings last longer, and MTBR increases.

Example: One customer installed Vespel® CR-6100 wear rings, throat bushings, and pressure reducing bushings in two multistage gasoline shipping pumps. This conversion resulted in a 7% efficiency gain and a 90% reduction of overall vibration levels. The pumps have been in service over 4 years without failure, where the previous MTBR was 12 months.

Vespel® CR-6100 offers superior properties vs. other wear ring materials.

- Vespel® CR-6100 is based on a fluoropolymer, which gives it excellent chemical resistance and a low coefficient of friction. These characteristics coupled with its high temperature resistance and low thermal growth make Vespel® CR-6100 ideal for a broad application range.
- The durability of Vespel® CR-6100 aids installation and machining, and stays tough during operation.

Where to Use Vespel® CR-6100

Vespel® CR-6100 is used for I.D.-mounted (in compression) wear components in nearly all centrifugal pump types in non-abrasive process services up to 550°F.

| | |
|---|---|
| <p><u>Pump Services:</u> Vespel® CR-6100 has been used in hundreds of pumps in a broad range of hydrocarbon, chemical and water services. Some applications include:</p> | <p><u>Pump Components:</u></p> <ul style="list-style-type: none"> ▪ Wear rings ▪ Throat bushings ▪ Pressure-reduced bushings ▪ Line shaft bearings ▪ Inter-stage bushings |
| <ul style="list-style-type: none"> ▪ Boiler feed ▪ Condensate ▪ Propane ▪ Butane ▪ Ethylene ▪ LPG ▪ Diesel ▪ Gas oil ▪ Sour water ▪ Naptha ▪ Gasoline ▪ MEA ▪ DEA ▪ Sulfuric acid ▪ Ammonia ▪ Hydrofluoric acid ▪ Caustic ▪ Lube oil <p>Applications are not limited to those listed.</p> | <p><u>Pump Types:</u></p> <ul style="list-style-type: none"> ▪ Overhung horizontal ▪ Vertical ▪ Between bearings ▪ Multistage |

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentation. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge and experience becomes available. Since we cannot anticipate all variations in actual end-use conditions, DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102.