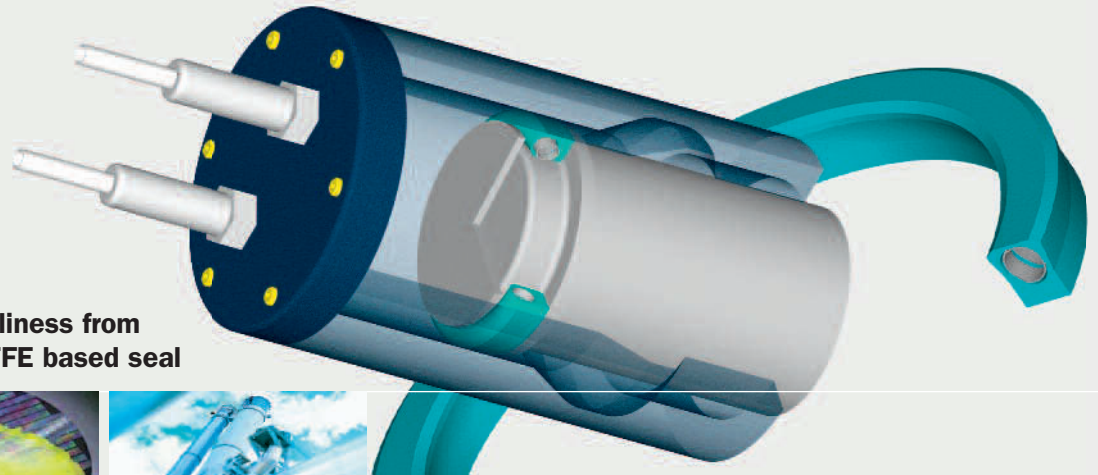
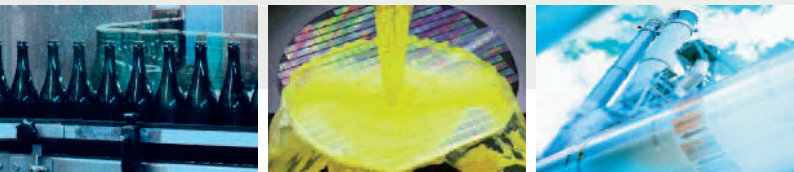


Variseal® Ultra-Clean™



The ultimate in cleanliness from a spring-energized PTFE based seal



Your Partner for Sealing Technology

Turcon® Variseal® Ultra-Clean™ offers the ultimate in cleanliness, making it ideal for use in processing equipment where maintaining an ultra clean system is a priority. In this unique design, the spring required to activate the seal is fully enclosed within a Turcon® PTFE based case. In food, beverage and pharmaceutical production this ensures there is no dead space for bacteria to be caught. While in semiconductor fabrication, where the minutest contamination can destroy the effectiveness of wafers, metal extractables are totally excluded.

Manufactured in our MF grade of materials, specially developed for hygienic environments, the seals are compliant to all major approvals. They combine superior wear resistance and unrivalled friction characteristics with compatibility to virtually all chemicals even in the most extreme of operating temperatures. This provides long life in the CIP & SIP regimes faced in manufacture of consumable products. In addition, in semiconductor manufacturing, the purity and low particle shedding of Turcon® MF are a major advantage.

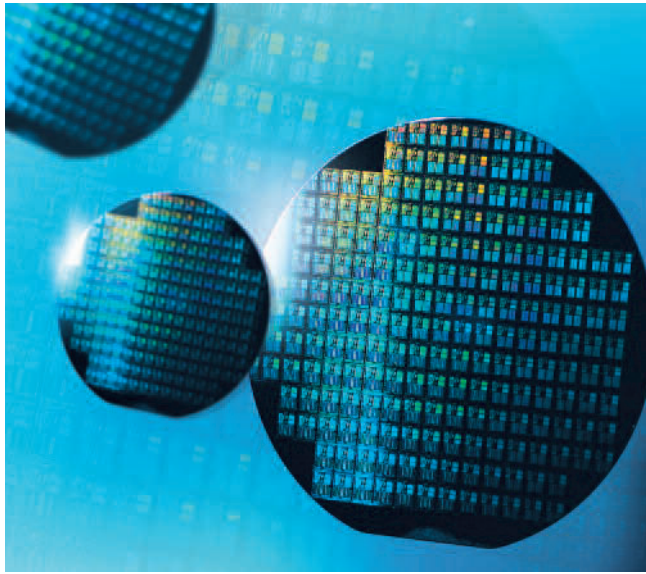
Footnote: Patent is pending on Variseal® Ultra-Clean™

Features and Benefits:

- Operates in extreme temperatures from -253 °C / -423 °F to +260 °C / +500 °F
- Withstands high pressures in excess of 100 bar / 1450 psi
- Excellent wear and friction characteristics
- Compatible with virtually all chemicals
- Unrivalled cleanability in food & beverage and pharmaceutical applications
- Materials available compliant to FDA 21 CFR 177.1550, 3-A, USP Class VI, Cytotoxicity <USP 87>, NSF, and the EU Machinery Directive
- Suitable for piston, rod, face, rotary, reciprocating and static situations
- Easy retrofit into standard AS-568 O-Ring and Variseal® grooves

Materials:

- Variseal® jacket can be supplied in premium grade Turcon® MF PTFE based material, Zurcon® polyurethane or PEEK
- Spring can be supplied in stainless steel, Elgiloy or Hastelloy



Industries:

- Food, beverage and pharmaceutical manufacturing
- Chemical processing
- Oil and gas, on and offshore
- Semiconductor fabrication

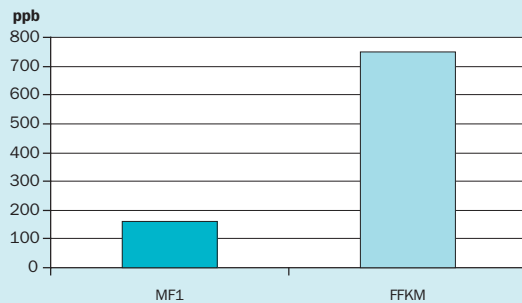
Trelleborg Sealing Solutions service:

- Quality levels to ISO 9001:2000 including 100% inspection and zero defect philosophy
- Wash and pack to class 100 standards
- Leading-edge in-house polymer development and test capability
- Extensive design facilities, including material specific non-linear Finite Element Analysis (FEA)
- Comprehensive technical support and after-sales service through the global Trelleborg Sealing Solutions network

Turcon® MF Grades

Turcon® MF1	<ul style="list-style-type: none"> • Exceptional friction characteristics • Unrivalled low temperature capabilities • Suitable for use with soft mating surfaces 	FDA
Turcon® MF2	<ul style="list-style-type: none"> • Good wear resistance 	FDA
Turcon® MF3	<ul style="list-style-type: none"> • Very good wear and abrasion resistance • Suitable for use with soft mating surfaces 	FDA
Turcon® MF4	<ul style="list-style-type: none"> • Unique lubricating properties • Withstands higher pressures • Suitable for use with medium to hard mating surfaces 	FDA, USP Class VI
Turcon® MF5	<ul style="list-style-type: none"> • High wear resistance • Good friction and sliding properties 	FDA

Result of a leach out test in UPDI, 85°C/1 week / 185°F/1 week according to SEMI Standard F57-0301 (20 cations)



Variseal® Ultra-Clean™ is available in the Trelleborg Sealing Solutions Turcon® MF range. These high purity PTFE based compounds have been specially engineered for hygienic applications. They combine superior sealing capabilities and material purity, with minimal impurities that could potentially contaminate processing systems.

www.tss.trelleborg.com