

## Perfluorinated Elastomer Media Compatibility Tables for Semiconductor Service

*Parofluor™* is a unique, advanced perfluorinated elastomer (FFKM) family developed and produced exclusively by Parker Seals. Perfluorinated elastomers provide performance beyond all other available elastomer families.

*Parofluor ULTRA™* series materials are high performance perfluorinated elastomers designed specifically for use in harsh operating environments where superior thermal stability, chemical resistance and ultra high-purity are required.

### *Parofluor ULTRA™ Materials Offering*



Parker Compound	Color	Nominal Hardness (Shore A)	Temperature Range	Features
FF200-75	Black	75	-15°C to 320°C 5°F to 608°F	High temperature, low compression set, chemical resistance
FF202-90	Black	90	-15°C to 320°C 5°F to 608°F	Extrusion resistant, high temperature, low compression set, chemical resistance
FF350-75	White	75	-15°C to 316°C 5°F to 600°F	High purity, high temperature
FF352-75	White	75	-15°C to 316°C 5°F to 600°F	General purpose, high temperature
FF354-65	White	65	-15°C to 316°C 5°F to 600°F	Low closure force material, high temperature
FF500-75	Black	75	-15°C to 260°C 5°F to 525°F	Best chemical resistance

### *Parofluor™ Materials Offering*

Parker Compound	Color	Nominal Hardness (Shore A)	Temperature Range
VI266-65	White	65	-15°C to 300°C 5°F to 572°F
V8545-75	Black	75	-15°C to 300°C 5°F to 572°F
V8562-75	White	75	-15°C to 300°C 5°F to 572°F
V8588-90	Black	90	-15°C to 280°C 5°F to 536°F
V8581-90	White	90	-15°C to 300°C 5°F to 572°F



### COMPOUND COMPATIBILITY RATING

- 1 Satisfactory
- 2 Fair (normally okay for static seal)
- 3 Doubtful (sometimes okay for static seal)
- 4 Unsatisfactory
- X Insufficient data

Compatibility rating charts, pages 2-4



SEMI-CONDUCTOR

# General Properties of Parofluor ULTRA™ Materials

## Parker Compound: FF200-75

Black, ultra high temperature, 75 Shore A Parofluor ULTRA™, Perfluorinated Elastomer

-15°C to 320°C (5°F to 608°F)

Property	Typical Results
Original Properties, ASTM D1414	
Shore A Hardness	79
Tensile Strength, MPa	12.0
Elongation, %	124
Modulus at 100% Elongation, MPa	7.8
Compression Set, 70 hours at 200°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	12
Compression Set, 70 hours at 316°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	45
Low Temperature Retraction, ASTM D1329	
TR-10 in degrees C	-2
Volume Change, 70 hours at room temperature, ASTM D471	
Acetone, % Volume Change	0.4
Methyl Ethyl Ketone, % Volume Change	0.2
Methanol, % Volume Change	0.2
Benzene, % Volume Change	0.3
Toluene, % Volume Change	0.3
Dichloromethane, % Volume Change	0.6
Chloroform, % Volume Change	0.6
Ethyl Acetate, % Volume Change	0.4
MTBE, % Volume Change	0.2
Glacial Acetic Acid, % Volume Change	0.4
Conc.Phosphoric Acid, % Volume Change	0.0
50/50 by Volume, MEK/Methanol	% Volume Change
	0.7
Tetrahydrofuran (THF), % Volume Change	0.4
Styrene Monomer, % Volume Change	0.0
Methyl Methacrylate Monomer, % Vol.Change	0.5

## Parker Compound: FF202-90

Black, ultra high temperature, 90 Shore A Parofluor ULTRA™, Perfluorinated Elastomer

-15°C to 320°C (5°F to 608°F)

Property	Typical Results
Original Properties, ASTM D1414	
Shore A Hardness	91
Tensile Strength, MPa	20.5
Elongation, %	110
Modulus at 100% Elongation, MPa	15.1
Compression Set, 70 hours at 200°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	25
Low Temperature Retraction, ASTM D1329	
TR-10 in degrees C	-2
Volume Change, 70 hours at room temperature, ASTM D471	
Acetone, % Volume Change	0.5
Methyl Ethyl Ketone, % Volume Change	0.3
Methanol, % Volume Change	0.4
Benzene, % Volume Change	0.4
Toluene, % Volume Change	0.4
Dichloromethane, % Volume Change	0.7
Chloroform, % Volume Change	0.8
Ethyl Acetate, % Volume Change	0.4
MTBE, % Volume Change	0.2
Glacial Acetic Acid, % Volume Change	0.4
Conc.Phosphoric Acid, % Volume Change	0.2
50/50 by Volume, MEK/Methanol	% Volume Change
	0.9
Tetrahydrofuran (THF), % Volume Change	0.5
Styrene Monomer, % Volume Change	0.1
Methyl Methacrylate Monomer, % Vol.Change	0.6





## General Properties of Parofluor ULTRA™ Materials

### Parker Compound: FF350-75

White, high purity, high temperature, 75 Shore A Parofluor ULTRA™, Perfluorinated Elastomer -15°C to 316°C (5°F to 600°F)

Property	Typical Results
Original Properties, ASTM D1414	
Shore A Hardness	74
Tensile Strength, MPa	16.3
Elongation, %	125
Modulus at 100% Elongation, MPa	9.4
Compression Set, 70 hours at 200°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	13
Compression Set, 70 hours at 260°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	26
Low Temperature Retraction, ASTM D1329	
TR-10 in degrees C	-1
Volume Change, 70 hours at room temperature, ASTM D471	
Acetone, % Volume Change	0.3
Methyl Ethyl Ketone, % Volume Change	0.2
Methanol, % Volume Change	0.2
Benzene, % Volume Change	0.3
Toluene, % Volume Change	0.3
Dichloromethane, % Volume Change	0.5
Chloroform, % Volume Change	0.5
Ethyl Acetate, % Volume Change	0.4
MTBE, % Volume Change	0.3
Glacial Acetic Acid, % Volume Change	0.1
Conc. Phosphoric Acid, % Volume Change	0.1
50/50 by Volume, MEK/Methanol	
% Volume Change	0.6
Tetrahydrofuran (THF), % Volume Change	0.4
Styrene Monomer, % Volume Change	0.2
Methyl Methacrylate Monomer, % Vol. Change	0.3

### Parker Compound: FF352-75

White, clean, high temperature, 75 Shore A Parofluor ULTRA™, Perfluorinated Elastomer -15°C to 316°C (5°F to 600°F)

Property	Typical Results
Original Properties, ASTM D1414	
Shore A Hardness	76.0
Tensile Strength, MPa	16.9
Elongation, %	142.0
Modulus at 100% Elongation, MPa	9.2
Compression Set, 70 hours at 200°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	16
Compression Set, 70 hours at 260°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	28
Low Temperature Retraction, ASTM D1329	
TR-10 in degrees C	-1
Volume Change, 70 hours at room temperature, ASTM D471	
Acetone, % Volume Change	0.2
Methyl Ethyl Ketone, % Volume Change	0.1
Methanol, % Volume Change	0.1
Benzene, % Volume Change	0.2
Toluene, % Volume Change	0.2
Dichloromethane, % Volume Change	0.3
Chloroform, % Volume Change	0.4
Ethyl Acetate, % Volume Change	0.3
MTBE, % Volume Change	0.2
Glacial Acetic Acid, % Volume Change	0.0
Conc. Phosphoric Acid, % Volume Change	0.1
50/50 by Volume, MEK/Methanol	
% Volume Change	0.5
Tetrahydrofuran (THF), % Volume Change	0.4
Styrene Monomer, % Volume Change	0.2
Methyl Methacrylate Monomer, % Vol. Change	0.3



## General Properties of Parofluor ULTRA™ Materials

### Parker Compound: FF354-65

Low closure force, white, high temp., 65 Shore A Parofluor ULTRA™, Perfluorinated Elastomer -15°C to 316°C (5°F to 600°F)

Property	Typical Results
Original Properties, ASTM D1414	
Shore A Hardness	65
Tensile Strength, MPa	8.0
Elongation, %	277
Modulus at 100% Elongation, MPa	1.8
Compression Set, 70 hours at 200°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	28
Compression Set, 70 hours at 260°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	41
Low Temperature Retraction, ASTM D1329	
TR-10 in degrees C	-1
Volume Change, 70 hours at room temperature, ASTM D471	
Acetone, % Volume Change	0.2
Methyl Ethyl Ketone, % Volume Change	0.2
Methanol, % Volume Change	0.1
Benzene, % Volume Change	0.2
Toluene, % Volume Change	0.1
Dichloromethane, % Volume Change	0.3
Chloroform, % Volume Change	0.5
Ethyl Acetate, % Volume Change	0.3
MTBE, % Volume Change	0.1
Glacial Acetic Acid, % Volume Change	0.1
Conc. Phosphoric Acid, % Volume Change	0.1
50/50 by Volume, MEK/Methanol	
% Volume Change	0.7
Tetrahydrofuran (THF), % Volume Change	0.4
Styrene Monomer, % Volume Change	0.3
Methyl Methacrylate Monomer, % Vol. Change	0.2

### Parker Compound: FF500-75

Black, best chemical resistance, 75 Shore A Parofluor ULTRA™, Perfluorinated Elastomer -15°C to 276°C (5°F to 525°F)

Property	Typical Results
Original Properties, ASTM D1414	
Shore A Hardness	80
Tensile Strength, MPa	14.1
Elongation, %	135
Modulus at 100% Elongation, MPa	8.7
Compression Set, 70 hours at 230°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	23
Compression Set, 70 hours at 200°C, ASTM D395 Method B, 2-214 Size O-Rings	
% Permanent Set	19
Low Temperature Retraction, ASTM D1329	
TR-10 in degrees C	-1
Volume Change, 70 hours at room temperature, ASTM D471	
Acetone, % Volume Change	0.1
Methyl Ethyl Ketone, % Volume Change	0.2
Methanol, % Volume Change	0.2
Benzene, % Volume Change	0.3
Toluene, % Volume Change	0.3
Dichloromethane, % Volume Change	0.9
Chloroform, % Volume Change	0.6
Ethyl Acetate, % Volume Change	0.4
MTBE, % Volume Change	0.5
Glacial Acetic Acid, % Volume Change	0.3
Conc. Phosphoric Acid, % Volume Change	0.1
50/50 by Volume, MEK/Methanol	
% Volume Change	0.7
Tetrahydrofuran (THF), % Volume Change	0.6
Styrene Monomer, % Volume Change	0.3
Methyl Methacrylate Monomer, % Vol. Change	0.3