

SIMONA® Polypropylene FRP-3 Sheet

FM 4910 listed for semicon cleanroom equipment requirements. Higher impact strength and rigidity over other flame retardant PP products. Uniform white color.



SIMONA® Polypropylene FRP-3 provides superior impact strength, rigidity and uniform white color in an FM 4910 listed sheet for semiconductor equipment. Among FR polypropylenes, it has an unmatched 12.0 ft-lb notched Izod impact, and 400,000 psi flexural modulus.

This unique material also exhibits stable, repeatable behavior in forming and fabrication. It is widely used in cabinetry and modules exposed to alkaline, UPW (Ultra Pure Water) and low acid contact. As with any FM 4910 polypropylene, it is not recommended for use in concentrated acids, or aromatic, aliphatic or chlorinated solvents.

For weld integrity and compatibility, SIMONA offers weld rod made from the same resin grade used in the production of each of its FM 4910 sheet products, including the FRP-3 grade.

From PVC and polypropylene to fluoropolymers, SIMONA offers the widest range of sheet for semicon and other chemical processing environments from 160°F to over 425°F (70° to 218°C).

Advantages

- FM 4910 listed JI#3023718
- Higher impact strength and stiffness vs. other FR-PP
- Resists alkalines, many solvents, and UPW
- Uniform white color
- Easy to form, fabricate and weld
 - SIMONA FRP-3 weld rod available

Applications

- BEOL cleaning tools
- Cabinets - low acid exposure
- Rinse modules, dry tool areas
- Alkaline, UPW modules
- Wafer transfer interfaces
- Electrical enclosures

Configurations

- Extruded sheet sizes
 - 48 x 96 in. (1,220 x 2,440 mm)
 - Gauges
 - 0.125 to 1.0 in. (3.17 to 25.4 mm)
 - 60 x 120 in. (1,524 to 3,048 mm)
 - Gauges
 - 0.500 to 1.0 in. (12.7 to 25.4 mm)
 - Press laminated sheet sizes
 - 48 x 96 in. (1,220 x 2,440 mm)
 - Gauges
 - 1.25 to 2.0 in. (31.7 to 50.8 mm)
 - Custom sizes
 - Available on request
 - Colors
 - White
- Weld rod: PP FRP-3
- 0.118, 0.156 in. (3.0, 4.0 mm)



PROPERTIES: SIMONA® FLAME RETARDANT POLYPROPYLENE (PP) SHEET

PROPERTY, unit of measure ¹	Test Method	TYPICAL VALUES	
		SIMONA® POLYPROPYLENE FR PP (UL 94 V-0)	SIMONA® POLYPROPYLENE FRP-3 (FM-4910, UL 94 V-0)
Specific Gravity	ASTM D792	1.01	1.36
Water Absorption, %	ASTM D570	<0.01	<0.1
MECHANICAL			
Tensile Strength @ yield	ASTM D638	3,900 psi (26.9 MPa)	2,600 psi (17.9 MPa)
Elongation @ break, %	ASTM D638	>100	—
Flexural Modulus	ASTM D790	160,000 psi (1,104 MPa)	400,000 psi (2,760 MPa)
Notched Izod Impact	ASTM D256	7.0 ft-lb/in. (373.8 J/m)	12.0 ft-lb/in. (640 J/m)
Hardness, Shore D	ASTM D2240	67	68
THERMAL			
Continuous Service Temperature	Maximum	180 °F (82.3 °C)	200 °F (93.4 °C)
Melting Point	ASTM D3418	320-334 °F (160-168 °C)	—
Coeff. of Expansion x10 ⁻⁵	ASTM D696	—	—
Heat Deflection Temp. @ 66 psi (0.45 MPa)	ASTM D648	180 °F (82.3 °C)	240 °F (115.6 °C)
Heat Deflection Temp. @ 264 psi (1.8 MPa)	ASTM D648	—	—
FLAMMABILITY			
	UL 94	V-0	V-0
	FM 4910	—	Yes
	ASTM E84		Class A

¹All tests at 73 ° F (22.8 °C) in dry conditions unless otherwise noted.

SIMONA® CHEMICAL RESISTANT FM 4910 AND UL 94 V-O COMPLIANT SHEET PRODUCTS

Fluoropolymers

- SIMONA® PVDF 740 homopolymer
- SIMONA® PVDF-C 2850 copolymer¹
- SIMONA® E-CTFE 901
- SIMONA® E-CTFE 902²
- SIMONA® PFA-M 1520³

Type I PVC, CPVC and polypropylene

- SIMONA® PVC Type I CRP-1 (high impact strength)
- SIMONA® PVC Type I VS-1
- SIMONA® Polypropylene FRP-3
- SIMONA® Polypropylene FR-PP¹
- SIMONA® CPVC 2000 - clear blue
- SIMONA® CPVC 4225 - opaque white
- SIMONA® CPVC 4125 - light gray

¹UL 94 V-0 only. Not FM 4910 listed.

²FM 4910 approved-limited use.

³Accepted by FM as fully fluorinated material meeting 4910: no listing required.



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Curbell Plastics is a proud supplier of SIMONA America materials.

SIMONA offers the widest product range of PVC sheet and rod – FM 4910 rated sheet – chemical resistant materials from PVC, PP and PE to fluoropolymers – orthotics and prosthetics sheet – Boltaron® aircraft sheet – plus proven products for boat building, outdoor furniture and many other industries.

DISCLAIMER AND LIMITATION OF WARRANTY:

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