

## **SIMONA<sup>®</sup>** **Stock Product Range**

- |                 |                                  |
|-----------------|----------------------------------|
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| ■ Polypropylene | ■ PFA                            |
| ■ PVC & CPVC    | ■ Semicon FM 4910 listed sheet   |
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# SIMONA AMERICA Industries



## ABOUT THIS GUIDE

This guide defines the wide range of sheet and rod products available in stock from SIMONA America Inc. and its network of plastics distributors in North America. It also includes products, sizes and colors available made to order.

## Unmatched performance and size range

SIMONA AMERICA customers can now satisfy application performance requirements from sub-zero temperatures up to 425 °F in virtually any chemical environment, indoors and out, with a product portfolio that includes:

- The industry's largest rod diameters – up to 31 inches in selected materials
- Heavy gauge sheet for machining including PVC up to 4 inches thick
- The semiconductor industry's most comprehensive line of FM 4910 rated sheet
- Polypropylene copolymer, homopolymer and flame retardant grades
- The most complete range of sheet products for orthotics and prosthetics
- Fluoropolymers that resist all chemical groups up to 425 °F
- UV stabilized HDPE for boat building, cabinetry and other outdoor structures
- A full complement of clear and opaque PVC and CPVC products

## Industry-specific product groups

For easy reference, this guide also lists SIMONA's complete product families developed for Orthotics & Prosthetics and Semiconductor Process Equipment.

## Boltaron PVC products

SIMONA Boltaron Inc. - A SIMONA Company offers its PVC sheet products including PVC Type I up to 4 inches thick through SIMONA America customer service.

## For more information:

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# High Density Polyethylene (HDPE)

Consistent flatness and stability in fabrication

## STOCK PRODUCT RANGE

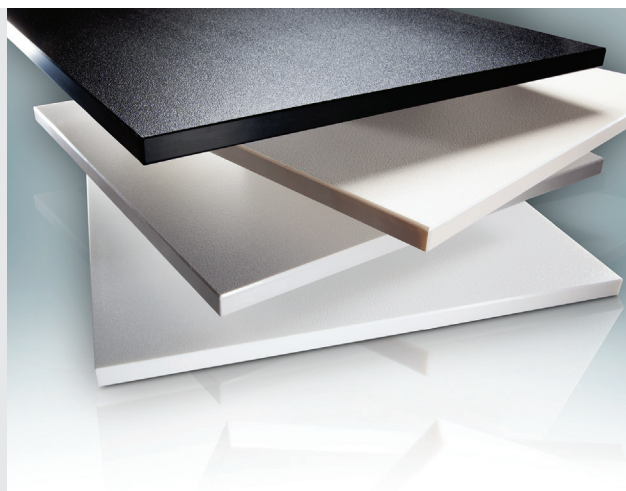
	HDPE general industry products					HDPE sheet in industry-specific colors		
	SIMONA® HDPE		SIMONA® PE 100 Pipe Grade	SIMONA® Cutting Board NSF 51 Listed	Utility Grade <i>Special Order Only</i>	SIMONA® Boat Board UV stabilized; textured	SIMONA® Polytone Playground & Sign Grade UV stabilized; textured	
Colors	natural	black	black	natural	black	Colors and color combinations		
						<b>Solid Colors</b> <ul style="list-style-type: none"><li>• polar white</li><li>• bright white</li><li>• dolphin gray</li><li>• glacier gray</li><li>• seafoam</li><li>• sandshade</li><li>• brown</li><li>• black</li></ul>	<b>Solid Colors</b> <ul style="list-style-type: none"><li>• red</li><li>• yellow</li><li>• play blue</li><li>• forest green</li><li>• tan</li></ul>	<b>Multi-layer Colors</b> <ul style="list-style-type: none"><li>• tan/red/tan</li><li>• black/white/black</li><li>• red/white/red</li><li>• green/white/green</li><li>• green/tan/green</li><li>• play blue/yellow/play blue</li><li>• play blue/white/play blue</li><li>• yellow/red/yellow</li><li>• red/yellow/red</li></ul>
Extruded Sheet (size / thickness)								
48 x 96"	1/8 - 1-1/2"	1/8 -1"	1/2 - 2"	1/2; 3/4; 1"	1/4 - 1"			1/2"
48 x 120"	1/4 - 1"			1/2; 3/4; 1"			1/2; 3/4"	3/4"
60 x 120"	1/4 - 1-1/2"		1/2 - 2"	1/2; 3/4; 1"				
54 x 96"						1/4 - 1"		
Welding Rod								
Diameter - inches			0.157"					
Solid Rod (length / diameter)								
96"	3/8 - 2"							
72"	2-1/4 - 5"							
48"	6 - 14"							
2000 mm (78")		10 mm - 120 mm (0.39 - 4.7")						

**Other sizes & thicknesses:** All products available in other sizes, thicknesses and colors made to order with minimums.

Sheet widths: 1/2" thickness up to 96" wide; 3/4" up to 92" wide; 1.5" up to 60" wide. Rod diameter of 31" (1000 mm) available on request.

Textures: Non-skid, diamond pattern available. Additives: Anti-microbial and rubber additives available.

SIMONA® Product	Description	Typical Applications
<b>HDPE</b>	Standard high density PE	General consumer and industrial
<b>PE 100 Pipe Grade</b>	UV stabilized, black, high ductility	Fluid handling
<b>Cutting Board</b>	NSF 51 listed, FDA compliant	Food preparation and processing
<b>Boat Board</b>	UV stabilized; textured; solid colors	Marine; outdoor furniture and cabinetry
<b>Polytone Playground &amp; Sign Grade</b>	UV stabilized; textured; solid and multi-layer colors	Playground structures and signs
<b>SIMOLIFE HDPE, LDPE</b>	Orthotics & Prosthetics grades	O&P products - see page 9



# Polypropylene (PP)

Full range of products includes flame retardant, O&P and semicon grades

## STOCK PRODUCT RANGE

	SIMONA® PP-Homopolymer				SIMONA® PP-Copolymer			SIMONA® Flame Retardant PP	
								FR-PP (UL V-0)	FRP-3 (FM 4910)
Colors	natural	white	black	eurogrey	natural	eurogrey, white*	black	natural	white

### Extruded Sheet (size / thickness)

48 x 96"	1/16 - 1-1/2"	1/16 - 1-1/4"	3/16" - 3/4"	1/4 - 1"	1/8 - 1-1/2"		1/4 - 1-1/2"	1/4 - 1"	1/8 - 1"
48 x 120"	1/4 - 1"	1/4 - 3/4"			3/16 - 1"		1/2 - 1"		
60 x 120"	1/4 - 1"	1/4 - 1"		3/4 - 1-1/2"	1/4 - 1-1/2"	3/8 - 1-1/2"	1/4 - 1-1/2"		1/2 - 3/4"

### Welding Rod

Diameter - inches	0.118; 0.157; 0.197"*	0.118"		0.118; 0.157; 0.197"*		0.118; 0.157"			0.118, 0.157"
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### Solid Rod (length / diameter)

96"	1/4 - 2"								
72"	2-1/4 - 5"								
48"	6 - 14"								
2000 mm (78")				10 - 100 mm (0.39 - 3.94")					
1000 mm (39")				110 - 350 mm (4.3 - 13.8")					
1000 mm (39")	400 - 500 mm (15.75 - 19.69")								

\*Available on request.

**Other sizes & thicknesses:** All products available in other sizes, thicknesses and colors made to order with minimums.

Sheet widths: 1/2" thickness up to 96" wide; 3/4" up to 92" wide; 1.5" up to 60" wide. Rod diameter of 31" (1000 mm) available on request.

Textures: Matte and smooth finishes available. Additives: Anti-microbial additives available.

SIMONA® Product	Description	Typical Applications
PP-Homopolymer	Higher rigidity PP	Chemical processing and storage
PP-Copolymer	Higher impact resistant PP	
FR-PP	Flame retardant UL 94 V-0	Electrical enclosures and components
FRP-3	FM 4910 listed	Semiconductor processing equipment
SIMOLIFE PP	Orthotics & Prosthetics grades	O&P products - see page 9



## PVC & CPVC

Standard and specialized FR grades for chemical processing, semicon and electrical equipment

### STOCK PRODUCT RANGE

	PVC Type I					PVC Type II	CPVC
			Clear	FM 4910 Listed			FM 4910 Listed
	SIMONA® PVC Type I		SIMONA® PVC- GLAS	SIMONA® PVC VS-1	SIMONA® PVC CRP-1	SIMONA® PVC Type II	SIMONA® CPVC 2000
Colors	dark grey	white	blue tint	white	white	light grey	clear blue tint

### Extruded Sheet (size / thickness)

48 x 96"	1/16 - 1-1/2"	1/8 - 1"	1/8 - 1/2"	1/4 - 3/4"	1/4 - 1"	1/8 - 1/2"	3, 6, 10, 12 mm
39 x 78"	1-1/2"; 2"						

### Compression Molded Sheet

48 x 96"	1-3/4"; 4"				
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### Welding Rod

Diameter - inches	0.118; 0.157; 0.197"*				0.118; 0.157"
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### Solid Rod (length / diameter)

120"	3/8 - 2"				
60"	2-1/4 - 8"				

\*Available on request.

**Other sizes & thicknesses:** Products available in other sizes, thicknesses and colors with minimums.

SIMONA® Products	Description	Typical Applications
PVC Type I	Normal impact	Acid etch tanks, linings; fume hoods, ducts, scrubbers. Clear: windows, splash shields
PVC Type II	Higher impact strength	
VS-1	FM 4910 $\geq 1/4"$	Semiconductor process cabinetry, access doors, panels
CRP-1	FM 4910 $\geq 1/4"$ High impact strength	
CPVC 2000	Clear; FM 4910 listed	View windows



### DISCLAIMER AND LIMITATION OF WARRANTY:

All information contained herein is believed by SIMONA AMERICA Industries to be reliable. Typical properties are based on laboratory tests conducted on material samples in accordance with standard test methodology. SIMONA AMERICA Industries makes no express or implied warranty that its products will perform in accordance with the data in all conditions and circumstances. To determine suitability for use, users must test applications under actual operating conditions. As a result, ALL EXPRESS OR IMPLIED WARRANTIES IN CONNECTION WITH SIMONA AMERICA Industries AND SIMONA Boltaron Inc. PRODUCTS INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED.

# Fluoropolymers

Broad chemical resistance for service conditions from sub-zero to 425 °F

FM 4910 grades listed

## STOCK PRODUCT RANGE

	<b>SIMONA® PVDF 740</b>	<b>SIMONA® PVDF 2850</b>	<b>SIMONA® ECTFE 901</b>	<b>SIMONA® ECTFE 902</b>	<b>SIMONA® PFA-M</b>
	<b>Homopolymer</b>	<b>Copolymer</b>			
Colors	natural (off white)	natural (off white)	natural (off white)	natural (off white)	natural (translucent)

## Extruded Sheet (size / thickness)

48 x 96"	1/8 - 2"	1/8 - 2"	3/32 - 1"		1/8 - 3/4"
48 x 48"	1-1/4 - 2" *	1/4"; 3/8" *	1" *	1.25 - 2"	1/4 - 1/2"
24 x 48"	1-1/4 - 2" *	1-1/4 - 2" *	1" *	1.25 - 2"	1/4 - 3/4"

## Compression Molded Sheet (size / thickness)

24 x 24"					1 - 3"
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## Welding Rod

Diameter - inches	0.125" 0.156"	0.125" 0.156" 0.197"	0.080" 0.125" 0.140" 0.157"	0.080" 0.125" 0.140" 0.157"	0.090" 0.125" 0.138" 0.156"
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## Solid Rod (length / diameter) SIMONA® PVDF 1000\*\*

78"	0.394 - 3.94"				
38"	4.33 - 19.69"				

\*Available on request.


\*\*SIMONA® PVDF 1000 rod sizes shown and sheet 1 m x 2 m, in thicknesses 1-15 mm available on request.

Note - PVDF solid and welding rod: Certain diameters require special order.

**Other sizes & thicknesses:** All products available in other sizes and thicknesses made to order with minimums.

SIMONA® Product	Description	Typical Applications
PVDF 740	Homopolymer; 250 °F service	Semiconductor and chemical processing tanks, components, ducting and handling systems
PVDF 2850*	Copolymer; high ductility “flex” grade	
E-CTFE 901	300 °F service	
E-CTFE 902*	300 °F service	
PFA-M	425 °F service	

\*FM 4910 - limited use





# Semiconductor Clean Room and Wet Bench Products

FM 4910 listed sheet for process temperatures from 120°F – 425°F

## STOCK PRODUCT RANGE

	Fluoropolymers				PVC & CPVC				FR Polypropylene
	SIMONA® PVDF 740	SIMONA® E-CTFE 901	SIMONA® E-CTFE 902	SIMONA® PFA-M	SIMONA® Type I PVC Grades		CPVC		SIMONA® FRP-3
	Homopolymer				SIMONA® PVC VS-1	SIMONA® PVC CRP-1	SIMONA® CPVC 2000	SIMONA® CPVC 4225	
Colors	natural (off white)	natural (off white)	natural (off white)	natural (translucent)	white	white	clear blue tint	white	white

### Extruded Sheet (size / thickness)

48 x 96"	1/8 - 2"	3/32 - 1"		1/8 - 3/4"	1/4 - 3/4"	1/8 - 1"	3, 6, 10, 12 mm	1/4 - 1"	1/8 - 1"
48 x 48"	1-1/4 - 2" *	1" *	1.25 - 2"	1/4 - 1/2"					
24" x 48"	1-1/4 - 2" *	1" *	1.25 - 2"	1/4 - 3/4"					

### Compression Molded Sheet (size / thickness)

24 x 24"				1 - 3"					
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### Welding Rod

Diameter - inches	0.125"	0.080"	0.080"	0.090"		0.118;			0.118;
	0.156"	0.125"	0.125"	0.125"		0.157"			0.157"
		0.140"	0.140"	0.138"					
		0.157"	0.157"	0.156"					

### Solid Rod (length / diameter) SIMONA® PVDF 1000\*\*

78"	0.394 - 3.94"								
38"	4.33 - 19.69"								

\*Available on request.

\*\*SIMONA® PVDF 1000 rod sizes shown and sheet 1 m x 2 m, in thicknesses 1-15 mm available on request.

Note - PVDF solid and welding rod: Certain diameters require special order.

**Other sizes & thicknesses:** All products available in other sizes and thicknesses made to order with minimums.

SIMONA® Product	Description	Typical Applications
<b>PVDF 740</b>	Homopolymer; 250 °F service	Semiconductor and chemical processing tanks, components, ducting and handling systems
<b>PVDF 2850*</b>	Copolymer; high ductility "flex" grade	
<b>E-CTFE 901</b>	300 °F service	
<b>E-CTFE 902*</b>	300 °F service	
<b>PFA-M</b>	425 °F service	
<b>FRP-3</b>	FM 4910 listed PP	Cabinetry, enclosures, rinse modules
<b>CRP-1</b>	FM 4910 ≥ 1/4" High impact strength	
<b>VS-1</b>	FM 4910 ≥ 1/4"	
<b>CPVC 2000</b>	Clear, tinted CPVC	Windows, access doors
<b>CPVC 4225</b>	White; FM 4910 listed	Cabinetry

\*FM 4910 - limited use





# SIMOLIFE Orthotic & Prosthetic Products

Resin formulation and process controls ensure consistent shrinkage in fabrication

## STOCK PRODUCT RANGE

	SIMOLIFE Polypropylene		SIMOLIFE Polyethylene			SIMOLIFE EVA		SIMOLIFE PETG
	PP Homopolymer	PP Copolymer	LDPE Low Density PE	Modified LDPE	HDPE High Density PE	EVA Flex	EVA Superflex	O&P Grade
Colors	natural, black	natural, black	natural	natural	natural, black	natural	natural	transparent

## Extruded Sheet (size / thickness)

48 x 96"	0.063 - 0.250"	0.063 - 0.250"	0.063" - 0.250"	0.063" - 0.500"	0.063" - 0.500"			0.47"; 0.59"; 0.787" (Sheet size 49x97")
33 x 49"						10; 12; 15 mm (0.39"; 0.47"; 0.59")*	10; 12; 15 mm (0.39"; 0.47"; 0.59")	
16 x 16"						10; 12; 15 mm (0.39"; 0.47"; 0.59")*	10; 12; 15 mm (0.39"; 0.47"; 0.59")	12; 15; 20 mm (0.47"; 0.59"; 0.787")

Antibacterial properties (available on request)	■			■	■	■		■
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\*Available on request.

**Other sizes & thicknesses:** All products available in other sizes, thicknesses and colors made to order with minimums.

SIMOLIFE sheets are highly stress-relieved for excellent dimensional stability and consistent, repeatable formability. Manufactured under rigidly controlled process conditions using certified orthotic grade raw materials, these premium-quality products meet the highest standards applicable for O&P applications.

SIMOLIFE Product	Description	Relative Stiffness ASTM D-638 (psi)
PETG	Clear, available >1/2" thick	275,000
HDPE	High density polyethylene	230,000
PP-Homopolymer	Higher rigidity PP	210,000
PP-Copolymer	Less rigid, more impact resistant PP	195,000
LDPE	Low density polyethylene	36,000
Modified LDPE	Higher rigidity LDPE	
EVA Flex	Flexible EVA	10,900
EVA Superflex	High flexibility EVA	2,800



# Typical Properties Comparison

## POLYETHYLENE, POLYPROPYLENE, PVC & CPVC PRODUCTS

PROPERTY units of measure <sup>1</sup>	TEST METHOD	HDPE - High Density PE		LDPE - Low Density PE		POLYPROPYLENE		FR POLYPROPYLENE	
		SIMONA® HDPE	SIMONA® PE 100	SIMONA® LDPE	SIMONA® Modified LDPE	SIMONA® PP-Homopolymer	SIMONA® PP-Copolymer	SIMONA® FR-PP (UL 94 V-0)	SIMONA® FRP-3 (FM 4910)
Specific gravity, g/cc	ASTM D792	0.96	0.95	0.91	0.91	0.905	0.905	1.01	1.36
Water Absorption, %	ASTM D570	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
<b>MECHANICAL</b>									
Tensile Strength @ yield, psi	ASTM D638	4,400	3,600	1,450	1,750	4,800	3,600	3,900	2,600
Elongation @ break, %	ASTM D638	>300	>600	>200	>200	>100	>500	>100	—
Tensile Modulus, psi	ASTM D638	—	—	—	—	—	—	—	—
Flexural Modulus, psi	ASTM D790	190,000	165,000	—	—	195,000	155,000	160,000	400,000
Notched Izod Impact (ft-lb/in.)	ASTM D256	2.75	12.0	No break	No break	0.9	No break	7.0	12.0
Hardness, Shore D	ASTM D2240	65	65	55	55	70	70	67	68
<b>THERMAL</b>									
Continuous Service Temperature	Maximum	170 °F	163 °F	—	—	212 °F	180 °F	180 °F	200 °F
Melting Point	ASTM D3418	267 °F	267 °F	—	—	320 - 329 °F	320 - 329 °F	320 - 334 °F	—
Coeff. of Expansion in./in., °F	ASTM D696	10 x 10 <sup>-5</sup>	10 x 10 <sup>-5</sup>	—	—	8.9 x 10 <sup>-5</sup>	8.9 x 10 <sup>-5</sup>	—	—
Heat Deflection Temp. @ 66 psi	ASTM D648	167 °F	163 °F	—	—	—	180 °F	180 °F	240 °F
Heat Deflection Temp. @ 264 psi	ASTM D648	110 °F	118 °F	—	—	—	133 °F	—	—
<b>FLAMMABILITY</b>	UL 94	—	—	—	—	—	HB	V-0	V-0
	FM 4910	—	—	—	—	—	—	—	Yes
	ASTM E84	—	—	—	—	—	—	—	Class A
<b>FOOD CONTACT - FDA</b>	FDA Reg. 21 Chapter 1 part 177.2510	Yes	—	—	—	Yes	Yes	—	—

<sup>1</sup>Data based on independent laboratory testing at 73 °F (22.8 °C) in dry conditions unless otherwise noted.

## FLUOROPOLYMER PRODUCTS

PROPERTY units of measure *	TEST METHOD	SIMONA® PVDF 740	SIMONA® PVDF 2850	SIMONA® ECTFE 901	SIMONA® ECTFE 902	SIMONA® PFA-M
Specific gravity, g/cc	ASTM D792	1.78	1.78	1.68	1.71	2.15
Water Absorption, %	ASTM D570	<0.03	<0.05	<0.01	<0.01	—
<b>MECHANICAL</b>						
Tensile Strength @ yield, psi	ASTM D638	6,000	5,000	4,500	4,500	2,300
Elongation @ break, %	ASTM D638	65	110	255	255	300
Flexural Modulus, psi	ASTM D790	195,000	170,000	245,000	245,000	72,000
Notched Izod Impact (ft-lb/in.)	ASTM D256	1.0	3.0	No break	No break	No break
Hardness, Shore D	ASTM D2240	78	72	73	73	57
Abrasion Resistance mg/1000	Taber CS 17	7.5	7.0	5.0	5.0	—
Coefficient of Friction (static / dynamic)	ASTM C1894	0.20 / 0.14	0.26 / 0.19	0.1 / 0.2	0.1 / 0.2	—
<b>THERMAL</b>						
Continuous Service Temperature	Maximum	261 °F	253 °F	302 °F	302 °F	425 °F
Melting Point	ASTM D3418	338 °F	316 °F	468 °F	434 °F	518 °F
Coeff. of Expansion in./in., °F	ASTM D696	7.2 x 10 <sup>-5</sup>	8.5 x 10 <sup>-5</sup>	5.0 x 10 <sup>-5</sup>	5.0 x 10 <sup>-5</sup>	9.0 x 10 <sup>-5</sup>
Heat Deflection Temp. @ 66 psi	ASTM D648	284 °F	255 °F	195 °F	195 °F	—
Heat Deflection Temp. @ 264 psi	ASTM D648	244 °F	120 °F	160 °F	160 °F	—
<b>FLAMMABILITY</b>	UL 94	V-0	V-0	V-0	V-0	V-0
	FM 4910	Yes	—	Yes	Limited**	Yes***

\*Data based on independent laboratory testing at 73 °F (22.8 °C) in dry conditions unless otherwise noted.

\*\*Approved for limited use in thick section machined parts and deep-draw thermoformed parts.

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

PVC Type I			FM 4910 PVC Type I		PVC Type II			FM 4910 CPVC		CPVC
SIMONA® PVC Type I	Boltaron® 1050	SIMONA® PVC-GLAS	SIMONA® PVC VS-1	SIMONA® PVC CRP-1	SIMONA® PVC Type II	Boltaron® 4050	Boltaron® 4300	SIMONA® CPVC 2000	SIMONA® CPVC 4225	SIMONA® CPVC 4125
1.41	1.37	1.37	1.415	1.415	1.38	1.35	1.3	1.55	1.46	1.51
<0.2	0.032	—	—	<0.01	—	0.056	0.05	<0.02	0.07	0.035
9,000	7,400	10,600	7,500	7,500	7,400	5,600	6,000	8,700	7,360	7,600
—	—	—	—	—	—	—	—	—	—	—
486,000	—	479,000	493,000	—	435,000	—	—	—	—	—
—	420,000	—	—	485,000	—	300,000	350,000	435,000	380,000	350,000
0.8	1-3	0.52	1.06	3.0	14	10-15	10-15	1.4	>2.0	1-2
84	82	86	84	84	82	82	80	96	82	82
32 - 140°F	—	32 - 140°F	32 - 140°F	162°F	-4 - 140°F	—	—	195°F	—	—
—	—	—	—	—	—	—	—	—	—	—
4.4 x 10 <sup>-5</sup>	2.9 x 10 <sup>-5</sup>	4.4 x 10 <sup>-5</sup>	3.3 x 10 <sup>-5</sup>	3.2 x 10 <sup>-5</sup>	4.4 x 10 <sup>-5</sup>	3.2 x 10 <sup>-5</sup>	4.5 x 10 <sup>-5</sup>	—	3.5 x 10 <sup>-5</sup>	4.4 x 10 <sup>-5</sup>
—	—	—	—	—	—	—	—	—	—	—
154°F	165°F	—	154°F	162°F	154°F	160°F	150°F	180°F	205°F	212°F
V-0, 5V	V-0*	V-0	—	V-0	V-0	V-0*	V-0*	V-0	V-0	V-0*
—	—	—	Yes	Yes	—	—	—	Yes	Yes	—
—	—	—	Class A	—	—	—	—	Class A	Class A	—
—	—	—	—	—	—	—	—	—	—	—

\*Based on 0.032" minimum thicknesses.

#### Notes & Disclaimers

- Service temperature ranges based on dry, non-chemical usage.
- Data based on standard natural (non-pigmented) material. Exception: PE 100 black (standard). Color pigments and additives may affect physical properties.
- Data reflects ASTM averages typically as reported by resin supplier for specific resin grades.
- Data intended as general relative comparison only. Users must test materials to determine suitability for use in specific applications.

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