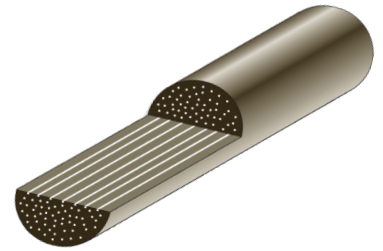




POLYPROPYLENE VERY LONG FIBER COMPOUNDS

High Performance Compounds



- ▶ Exceptional strength, stiffness, and impact resistance
- ▶ Performance maintained at extreme high and low temperatures
- ▶ Easily injection-molded into complex geometries, large or small

KEY BENEFITS

- Lightweight and cost-optimized performance
- Low shrinkage rates improve dimensional accuracy and resist warpage
- Long term heat aging capable for 1000 hours @ 140°C
- Low emission, odor, and fogging characteristics
- Colorable and UV resistant
- Excellent chemical resistance of polypropylene
- Performance unaffected by humidity/hydrolysis
- Suitable for molding on common, general purpose equipment

Imagine reducing weight and costs by engineering a common polypropylene polymer into a remarkably stiff, tough, and lightweight compound that performs on the level of more expensive reinforced thermoplastics, is not prone to a reduction of performance due to hydrolysis (like nylon), and has exceptional chemical resistance. Furthermore, a compound that is easily molded into complex shapes with critical dimensions, resists warpage in the largest surface area parts, and requires less energy to process than reinforced Nylon. Not only can this compound be formulated to stringent color codes, it can meet demanding automotive specifications for low emissions, ultraviolet protection, and long term heat aging. At RTP Company, we not only imagined it, we've made it a reality.

Very Long Fiber (VLF) compounds made from our proprietary pultrusion process yield pellets 11mm in length, with fibers completely wetted with polymer. These longer fibers in the molded article are more capable of resisting deformation and handle the transfer of stress caused by external forces. Additional additive technologies may be incorporated to create robust compounds that are engineered to meet demanding requirements for strength and impact at extremely low and high temperatures. The achieved performance levels make these compounds suitable for use in applications such as pallets, automobile battery trays, sporting goods, furniture structures, and industrial fans.

When performance is critical, now and for extended periods of time, PP VLF compounds have high strength-to-weight ratios, very low creep, and maintain their usefulness over a broad temperature range.

Very Long Fiber compounds, another solution from RTP Company... your global leader in engineered thermoplastic compounds.



VLF Compounds are available worldwide and are manufactured in the United States, Mexico, Germany and China.



RTP Company Corporate Headquarters • 580 East Front Street • Winona, Minnesota 55987 USA
 website: www.rtpcompany.com • email: rtp@rtpcompany.com • Wiman Corporation • +1 320-259-2554

TELEPHONE:

U.S.A. +1 507-454-6900	SOUTH AMERICA +55 11 4193-8772	MEXICO +52 81 8134-0403	EUROPE +33 380-253-000	SINGAPORE +65 6863-6580	CHINA +86 512-6283-8383
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POLYPROPYLENE VERY LONG FIBER COMPOUNDS

High Performance Compounds

Physical Properties of Selected Polypropylene Very Long Fiber Compounds*

*For precise performance requirements, other compounds are available.

	Product Nomenclature	Specific Gravity	Tensile Strength	Flexural Modulus	N-IZOD Impact	U-IZOD Impact	HDT@1.8 MPa
VLF% :: Standard, capable of withstanding 1000hrs @ 140°C			MPa	MPa	kJ/m ²	kJ/m ²	°C
VLF20	RTP 199 X 108595	1.05	95	4500	16	50	150
VLF30	RTP 199 X 70815	1.13	115	6500	21	60	155
VLF40	RTP 199 X 70836 A	1.21	130	8500	27	65	155
VLF50	RTP 199 X 70836 B	1.33	140	11000	28	70	155
VLF30 :: SPECIAL - X Series			MPa	MPa	kJ/m ²	kJ/m ²	°C
VLF30 :: High Flow	RTP 199 X 116112 B	1.12	116	6715	20	55	150
VLF30 :: Copolymer	RTP 199 X 130830 B	1.13	100	6130	21	55	145
VLF30 :: UV Black**			MPa	MPa	ΔE	YI	Gloss 60°
VLF30 :: 0 kJ/m ² exposure	RTP 199 X 123131 A	1.13	82	7600	0	6.3	37
VLF30 :: 2500 kJ/m ² exposure	RTP 199 X 123131 A	1.13	85	7000	0.25	6.5	36
VLF30 :: 5000 kJ/m ² exposure	RTP 199 X 123131 A	1.13	85	6600	0.50	6.7	35
VLF% :: Low Emission Grades Capable of withstanding 1000hrs @ 140°C		VDA 270			VDA 277	VDA 278	
		A1 (23°C/24h)	A2 (40°C/24h)	A3 (80°C/2h)	E ₆ µgC/g	TOTAL VOC µg/g	FOG µg/g
VLF30	RTP 199 X 123150 A	≤ 2	≤ 3	≤ 3	≤ 20	≤ 50	≤ 100
VLF40	RTP 199 X 123150 B	≤ 2	≤ 3	≤ 4	≤ 20	≤ 50	≤ 100
VLF50	RTP 199 X 123150 C	≤ 2	≤ 3	≤ 5	≤ 20	≤ 50	≤ 100
VLF60 :: Masterbatch	RTP 199 X 136147 A	≤ 3	≤ 3	≤ 4	≤ 20	≤ 50	≤ 100

KEY

UV	ΔE	a single number that represents the 'distance' between two colors
	YI (Yellowness Index)	the degree to which a sample's color shifts away from an ideal white
	Gloss	quantifying the reflectance by shining a known amount of light at 60 degrees at a surface (semi-gloss range = 10 to 70 GU)
EMISSIONS	VDA 270: Determination of Olfactory Properties	the odor of a material in degrees as judged by an appropriately trained jury using a scale from grade 1 'indiscernible' to grade 6 'intolerable' at different temperatures
	VDA 277: Emission of Organic Compounds	analysis to determine the total Volatile Organic Compound (VOC) of a sample using the Headspace Gas Chromatography method, which yields µg carbon per gram of test sample
	VDA 278: Thermal Desorption Analysis for Organic Compounds	analysis of the emission of volatile organic compounds (VOC) and condensable substances (FOG)

** UV TEST METHOD

Weathering Chamber	Atlas Ci4000
Xenon Lamp Filters	Inner: Quartz; Outer: Sodium Borosilicate. Lamp calibrated every 200 hours
Test Specification	SAE J2527
Test Dosage	5000 kJ/m ² (approximately 3800 hours)
Additional Information	ΔE and YI measurements were conducted on Konica-Minolta CM-3600d

RTP Company: Your Global Compounder Of Custom Engineered Thermoplastics

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