



» APPLICATION BULLETIN

VERSAFLEX™ CE TPEs FOR 5G TRANSPARENCY

Rapidly expanding 5G networks are increasing performance requirements across the consumer electronics industry. Device designs are changing to improve high-speed performance and network connectivity to support faster speeds, higher capacity, and lower latencies for customers. Similarly, the cases, accessories, electronic gaskets and grommets for consumer electronics must also adapt to minimize signal interference and better enable high-frequency signal transmission to the latest devices.

Versaflex™ CE 3140 TPEs are specifically formulated to deliver superior permittivity and low loss performance up to millimeter wave (mmWave) frequencies used for 5G. These 5G transparent TPEs combine the excellent physical properties, aesthetics and UV resistance qualities of traditional TPEs with lower dielectric constant (Dk) and dissipation factor (Df) performance, resulting in an advanced material solution with less signal degradation for next-generation devices.

KEY CHARACTERISTICS

- Enables excellent permittivity and low-loss performance for high-speed signal transmission and connectivity
- Delivers lower Dk and Df performance compared to standard TPEs
- Provides excellent physical properties, UV resistance and aesthetics

INDUSTRIES & APPLICATIONS

Versaflex CE 3140 TPEs are formulated for use in phone cases to minimize signal loss and enable high-speed connectivity for 5G devices to deliver a seamless experience for consumers.



5G TRANSPARENCY PERFORMANCE

*Market benchmark is 2.5 Dk at 37 GHz for compatible phone cases

GRADE	Dk at 40 GHz	Df at 40 GHz
Versaflex CE 3140-65N	2.49	0.024
Versaflex CE 3140-90N	2.54	0.021
Standard TPE (70A)	2.67	0.055
Standard TPE (90A)	2.83	0.038

TECHNICAL PROPERTIES

CHARACTERISTICS	VERSAFLEX CE 3140	STANDARD TPE
5G Performance at mmWave Frequencies	Excellent	Fair
Target Dielectric Constant (<2.5 Dk @ 40 GHz)	Excellent	Fair
Target Loss Tangent (<0.0200 Df @ 40 GHz)	Excellent	Fair
Physical Properties	Excellent	Excellent
UV Resistance	Excellent	Excellent
Aesthetics	Excellent	Excellent
Colorability	Excellent	Excellent
Can Be Overmolded	Yes	Yes
Material Costs	\$\$\$	\$\$

1.844.4AVIENT
www.avient.com



Copyright © 2022, Avient Corporation. Avient makes no representations, guarantees, or warranties of any kind with respect to the information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as “typical” or stated without a range do not state minimum or maximum properties; consult your sales representative for property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the information. Avient makes no warranties or guarantees respecting suitability of either Avient’s products or the information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the information and/or use or handling of any product. AVIENT MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the information or products reflected by the information. This literature shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.