



» INDUSTRY BULLETIN

OnFlex™ Thermoplastic Elastomers Solutions for Automotive Applications

To keep up with industry demands, regulatory challenges and end-user preferences, it's imperative to consider the influence of material specifications at the beginning of the product development cycle.

Across HVAC, interior and external automotive applications, your products need to meet VIAQ regulations, appeal to consumers through look and feel, and enable long-lasting performance. So how do you know what to choose? We can help.

A fresh look at material options helps align key properties with optimal performance for today's vehicles. Known for offering tight seals and reducing vibration and noise, certain thermoplastic elastomers (TPEs), like OnFlex™ grades, may be better suited for your particular application than the historically incumbent materials, like general purpose TPEs, thermoplastic vulcanizates (TPV), and thermoplastic polyolefins (TPO). Here are some initial distinctions to help you decide.



GENERAL CHARACTERISTICS COMPARING TPE, TPV, TPO

CHARACTERISTICS	ONFLEX™ LO	ONFLEX™ AF	TPE GENERAL PURPOSE	TPV	TPO
Volatile Organic Compounds (VDA 278)	Very Low	Moderate	Moderate	Moderate	Very Low
Fogging (VDA 278 & DIN 75201)	Very Low	Moderate	Moderate	High	Very Low
Odor (VDA 270 Requirement ≤3.0)	≤3.0	≤3.0	>3	>3	≤3.0
Gloss Level	Low	Low	Low	Very Low	High
Tactile Feel	Grippy	Grippy	Grippy	Grippy	Waxy
Pre-Drying Required	No	No	No	Yes	No
Raw Material Costs	\$\$	\$\$	\$\$	\$\$\$	\$
Compression Set @ RT	Good	Good	Good	Excellent	N/A
Compression Set @ ≥70°C	Moderate	Moderate	Moderate	Good	N/A
UV Resistance	Good	Excellent	Good	Good	Good
Weatherability	Good	Excellent	Good	Good	Good
Hardness Range	Low to High	Low to High	Low to High	Low to High	High
Density (g/ml)	1.15	0.99	0.90–1.20	0.95–0.98	0.90–1.20

HVAC SYSTEMS

OnFlex™ LO

- Features: low VOC/FOG, low odor, good compression set, easy processing, overmolds to polypropylene
- Example applications: seals and flaps in heating, ventilation and air conditioning systems

	STANDARD	UNITS	ONFLEX LO 7120-45N
Volatile Organic Compounds	VDA 278	ug/g(ppm)	41
Fogging	VDA 278	ug/g(ppm)	521
Odor • Control • Dry conditions • Wet conditions	SAE J1351 (15)	1-10 Scale	1 2 1
Compression Set (23°C) • 22 hours • 70 hours	ASTM D395	%	14.4 14.6
Capillary Viscosity • 1341/s • 11170/s	ASTM D3835	Pa*s	35 7

INTERIORS/EXTERIORS

OnFlex™ AF

- Features: long-term sealing performance, reduced noise and vibration, grippy feel, low gloss, low odor, excellent UV resistance and weatherability, easy processability, overmolds to polypropylene
- Example applications: trays, door pockets, fasteners, clips, roof rack pads, roof and door trim, and window encapsulations

	TEMP	STANDARD	UNITS	ONFLEX AF 7210-40B	ONFLEX AF 7210-50B	ONFLEX AF 7210-60B	ONFLEX AF 7210-70B	ONFLEX AF 7210-80B
QUV Exposure • 1000 Hrs(0.68 W/m2 @ 340nm) • 2000 Hrs(0.68 W/m2 @ 340nm)	45°C		ΔE	0.49 0.38	0.42 0.48	0.21 0.85	0.22 0.14	0.32 0.24
Xenon-Arc Exposure • 1000 Hrs(0.35 W/m2 @ 340nm)	63°C		ΔE	0.63	0.84	0.34	—	0.58
Capillary Viscosity • 1341/s • 11170/s		ASTM D3835	Pa*s	60 11.4	79 15	65 13	48 13.7	73 16
Ozone Resistance		ASTM D1149(16) B	Visual	No cracks	No cracks	No cracks	No cracks	No cracks
Low Temperature Brittleness		ISO 812 B	°C	-63	-62	-62	-62	-62

Grades shown on both pages are representative of solutions manufactured in North America, more grades available globally.





The need to innovate is virtually endless.
Contact Avient to tap into our material
science expertise and comprehensive product
development support services to help you
bring your ideas to market faster.

www.avient.com



Copyright © 2020, 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.