

PolyOne custom formulates high-performance polymer compounds derived from a variety of rigid and flexible thermoplastic resins and thermoplastic elastomers. PolyOne also offers one of the widest ranges of polymer-specific colorant and additive systems for the global plastics industry.

PolyOne's range of OnFlex™ thermoplastic elastomer (TPE) compounds includes TPE-S, TPE-V, TPE-O and TPE-U. This range, combined with excellent experience in TPE application design and processing, positions PolyOne very well to address the overall thermoplastic product needs of various industries.

DESCRIPTION

OnFlex™-U thermoplastic elastomer compounds are based on thermoplastic polyurethane elastomers (TPE-U). The OnFlex™-U 5300 series are based upon alloys of SEBS and TPU, combining the advantages of both raw materials, for example the good processability and soft haptic of a TPE-S with the excellent mechanical properties and abrasion resistance of a TPE-U.

Soft Grades							
Grade	Hardness (Shore)	Density (g/cm ³)	Tensile Strength (MPa)	Elongation at Break (%)	Abrasion Resistance (mm ³)	Compression Set	
	DIN 53 505	DIN EN ISO 1183	DIN 53 504	DIN 53 504	DIN ISO 34-1	72h@ 23°C (%)	22h@70°C (%)
						DIN ISO 815	DIN ISO 815
OnFlex™-U 5355A-S0014	55A	1,02	14,7	632	59	--	80
OnFlex™-U 5365A-S0012	65A	1,02	14,5	432	--	36	85
OnFlex™-U 5370A-S0015	70A	1,05	25,0	520	57	--	--
OnFlex™-U 5380A-S0013	80A	1,05	33,0	536	55	31	69

ADVANTAGES

OnFlex™-U 5300 compounds are formulated to deliver unique properties, including:

- Very good abrasion and scratch resistance
- Good processability
- Wide hardness range (down to 55 Shore A)
- Very good mechanical properties
- Good chemical resistance
- Excellent flexibility over a wide temperature range
- Excellent colorability
- Low density

TYPICAL APPLICATIONS

- **Automotive** – covers, soft-touch applications, interior trim, skins
- **Electrical** – switch covers, grommets, power tool grips
- **Cable and accessories** – jacketing, cable clamps, sealing rings, cable-inlets and strain reliefs
- **Construction** – flooring accessories, covers, pneumatic and chemical hoses
- **Sports and leisure** – snow bindings, walking equipment , grips

PROCESSING

OnFlex™-U 5300 compounds are suitable for injection molding and multicomponent molding. A standard 3 zone screw ram injection molding machine with a general-purpose screw generally is suitable for processing OnFlex™-U 5300 compounds. An L:D ratio between 17-20:1 is typically much preferred. A compression ratio from 1:2 is generally recommended. The compression ratio should not exceed 1:3. OnFlex™-U compounds are hygroscopic and will absorb moisture when exposed to the atmosphere. As with all TPUs drying is essential to prevent problems with processing and degradation of performance; typically 2-3 hours at 90°C to 110°C should be suitable. OnFlex™-U compounds are shear sensitive. Therefore the injection molding machine should not operate at too high screw speeds. For further information, please read our OnFlex™-U processing guide or contact us directly.

COLORS

OnFlex™-U compounds can be supplied either pre-colored to the customer's specification or natural. Natural grades can be colored "in process" with color concentrates; for example, using PolyOne's OnColor™ range of color concentrates.

CUSTOM COMPOUNDS

In addition to the standard range, our products can be custom formulated to meet specific requirements, offering both product and design flexibility.

We determined this information about this product(s) using lab-scale equipment and/or estimation. We provide "typical" data to help you select products to evaluate. "Typical" data do not reflect normal variations in our product as made. Do not rely on "typical" data for design purposes; ask us for min-max data. We do not guarantee "typical" properties. Your processes can significantly alter polymer physical properties. Test the product thoroughly for suitability in your specific application after processing on your production equipment. You assume all responsibility for product selection and suitability for your intended use. **We make no other warranties, express or implied, including any implied warranties of merchantability or fitness for purpose**, respecting this information or this product. Nothing herein constitutes permission, recommendation or inducement to practice any patented invention without permission from its owner.

CONTACT US

EUROPE	EUROPE	EUROPE	ASIA	AMERICAS
PolyOne Th. Bergmann GmbH Adolf-Dambach-Str. 2 76751 Gaggenau Germany Tel.: +49 (0) 7225 68020 Fax: +49 (0) 7225 680210 onflex@polyone.com www.polyone.com	PolyOne Espana S.L.U. Pol.Industrial Valle del Cinca S/N Apartado 18 22300 Barbastro Spain Tel.: +34 (0) 974 310 314 Fax: +34 (0) 974 314 311 onflex@polyone.com www.polyone.com	PolyOne Turkey Ikitelli Organize Sanayi Bölgesi Turgut Özal Caddesi No: 103 34306K. Cekmece- Istanbul-Türkiye Tel.: +90(0) 212 549 2256 Fax: +90 (0) 212 549 2241 onflex@polyone.com www.polyone.com	PolyOne Singapore Pte. Ltd. 22 Tuas West Road Singapore 638380 Singapore Tel.: +65 (0) 6861 9325 Fax: +65 (0) 6861 9327 onflex@polyone.com www.polyone.com	PolyOne Corporation PolyOne Center Avon Lake, OH 44012 U.S.A. Tel.: +1 440 930 1000 www.polyone.com



© PolyOne® Corporation 2007

ITPE-U-01