

A range of food-grade sealing materials

Material	Polymer grade	Colour	Main properties		Hardness ¹⁾		F&B standards compliance				Resistance to cleaning processes							Resistance to food								
			Temperature, min	Temperature, max			FDA	3A	EU	ADI free	Nitric acid (acidic CIP) ²⁾	Caustic soda (alkaline CIP) ²⁾	Phosphoric acid (acidic CIP) ²⁾	Sodium hypochlorite	Distilled water	Steam SOP	Steam, SIP	Dairy	Olive oil	Cocoa butter	Fruit and sugar mass	Sausage, meat	Alcoholic beverages < 15%	Alcoholic beverages > 15%		
			°C (°F)	°C (°F)			Shore A Shore D				Tested at 80 °C (175 °F), 2%	Tested at 80 °C (175 °F), 3%	Tested at 80 °C (175 °F), 1%	Tested at 70 °C (158 °F), 3%	Tested at 100 °C (210 °F)	Tested at 121 °C (250 °F)	Tested at 121 °C (250 °F)									
■ Thermoplastic elastomers																										
H-ECOPUR	TPU	red	−20 (−5)	+110 (+230)	95 ± 2	48 ± 3	YES ³⁾	YES	YES	YES	+	+	+	+	+	+/0	0/− ⁵⁾	+	+	+	+	+	+	+		
H-ECOPUR 95A-NC	TPU	opaque	−20 (−5)	+110 (+230)	95 ± 2	48 ± 3	YES	YES	YES	YES	+	+	+	+	+	+/0	0/− ⁵⁾	+	+	+	+	+	+	+		
H-ECOPUR 95A-blue	TPU	blue	−20 (−5)	+110 (+230)	95 ± 2	48 ± 3	YES	YES	YES	YES	+	+	+	+	+	+/0	0/− ⁵⁾	+	+	+	+	+	+	+		
ECOPUR 95A-bl-FG	TPU	blue	−50 (−60)	+100 (+210)	95 ± 2	47 ± 3	YES	YES	YES	YES	−	+	+	+	0	−	−	+	+	+	+	+	+	0		
H-ECOPUR 85A	TPU	red	−20 (−5)	+100 (+210)	85 ± 2	35 ± 3	NO	n.d.a.	NO	YES	n.d.a.	n.d.a.	n.d.a.	n.d.a.	+	0	−	+	+	+	+	+	+	0		
■ Elastomers																										
SKF Ecorubber-H 85A-b-FG	HNBR	black	−25 (−15)	+150 (+300)	85 ± 5	n.a.	YES	YES	YES	YES	0	+	+	0	0	0	0	+	+	+	+	+	+	+		
SKF Ecorubber-2 85A-w-FG	FKM	white	−20 (−5)	+200 (+390)	85 ± 5	n.a.	YES	YES	YES	YES	+	0	+	+	0	−	−	+	+	+	+	+	+	+		
SKF Ecorubber-3 85A-w-FG	EPDM	white	−50 (−60)	+150 (+300)	85 ± 5	n.a.	YES	YES	YES	YES	+	+	+	+	+	+	0	−	−	+	+	+	+	+		
SKF Ecorubber-3 85A-b-FG	EPDM	black	−50 (−60)	+150 (+300)	85 ± 5	n.a.	YES	YES	YES	YES	+	+	+	+	+	+	+	+	−	−	+	+	+	+		
SKF Ecosil	MVQ / VMQ	reddish brown	−60 (−75)	+200 (+390)	85 ± 5	n.a.	YES	YES	YES	YES	+	+	+	+	+	−	−	+	+	+	+	+	+	0		
■ Thermoplastics																										
SKF Ecotal	POM-C (Acetal)	black	−50 (−60)	+100 (+210)	n.a.	82	YES	n.d.a.	YES	YES	−	0	0	0	+	−	−	+	+	+	+	+	+	+		
728	POM-C (Acetal)	white	−50 (−60)	+100 (+210)	n.a.	85	YES	YES	YES ⁴⁾	YES	−	0	0	0	+	−	−	+	+	+	+	+	+	+		
729	PET	white	−20 (−5)	+115 (+240)	n.a.	87	YES	YES	YES ⁴⁾	YES	0	−	+	+	+	−	−	+	+	+	+	+	+	+		
SKF Ecopaek	PEEK	cream	−100 (−150)	+260 (+500)	n.a.	87	YES	YES	YES	YES	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
SKF Ecoflon 1	Virgin, unfilled PTFE	white	−200 (−330)	+260 (+500)	n.a.	57	YES	n.d.a.	YES	YES	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
700	Virgin, unfilled PTFE	white	−200 (−330)	+260 (+500)	n.a.	56	YES	n.d.a.	YES ⁴⁾	YES	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
SKF Ecoflon 5	Modified PTFE	white	−200 (−330)	+260 (+500)	n.a.	59	YES	YES	YES ⁴⁾	YES	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
777	Modified PTFE	white	−200 (−330)	+260 (+500)	n.a.	60	YES	YES	YES ⁴⁾	YES	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
SKF Ecoflon 14	PTFE (+ 10% Ekonol)	tan	−200 (−330)	+260 (+500)	n.a.	57	NO	n.d.a.	YES ⁴⁾	YES	n.d.a.	n.d.a.	n.d.a.	n.d.a.	+	0	0	+	+	+	+	+	+	+		
754	PTFE (+ 10% Ekonol)	tan	−200 (−330)	+260 (+500)	n.a.	63	NO	NO	NO	YES	n.d.a.	n.d.a.	n.d.a.	n.d.a.	+	0	0	+	+	+	+	+	+	+		
SKF Ecoflon 16	PTFE (+ 25% PEEK)	cream	−200 (−330)	+260 (+500)	n.a.	63	YES	NO	YES ⁴⁾	YES	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
721	PTFE (+ minerals)	white	−200 (−330)	+260 (+500)	n.a.	61	YES	n.d.a.	NO	YES	n.d.a.	n.d.a.	n.d.a.	n.d.a.	+	+	+	+	+	+	+	+	+	+		
SKF Ecowear 1000	UHMWPE	white	−200 (−330)	+90 (+194)	n.a.	61	YES	YES	YES	YES	+	+	+	−	0	−	−	+	+	+	+	+	+	+		
776	UHMWPE	white	−200 (−330)	+90 (+194)	n.a.	64	YES	YES	YES ⁴⁾	YES	+	+	+	−	0	−	−	+	+	+	+	+	+	+		
795	UHMWPE	white	−200 (−330)	+100 (+210)	n.a.	64	YES	YES	YES ⁴⁾	YES	+	+	+	−	+	0	−	+	+	+	+	+	+	+		
																		+	Resistant		YES	Compliant		n.d.a.	No data available	
																		0	Limited resistance		NO	Not compliant		n.a.	Not applicable	
																		−	Not recommended							

Material	Characteristics and applications	Material	Characteristics and applications
■ Thermoplastic elastomers		■ Thermoplastics	
H-ECOPUR	These wear-resistant materials enable self-activating solutions in applications with high pressures and temperatures up to 110°C (230°F).	SKF Ecotal	Thermoplastics operate with less friction and wear than elastomers and thermoplastic elastomers; thermoplastic seals require metal or elastomer springs/energizers.
H-ECOPUR 95A-NC	A polyurethane grade with outstanding chemical resistance.	728	A high-strength plastic material used primarily for bushings and plastic parts that require improved physical properties.
H-ECOPUR 95A-blue	Version of H-ECOPUR in its natural colouring.	729	Essentially SKF Ecotal in its natural colouring.
ECOPUR 95A-bl-FG	A blue-coloured version of H-ECOPUR; recommended for F&B applications for its detectability.	SKF Ecopaek	A technical thermoplastic material comparable to SKF Ecotal and 728, but with better dimensional stability and lower sliding wear.
H-ECOPUR 85A	A special blue-coloured polyurethane grade with excellent low-temperature properties.	SKF Ecoflon 1, 700	A high performance material with significantly improved chemical resistance, higher operating temperature and improved creep and relaxation behaviour compared to SKF Ecotal, 728 and 729.
	Only suitable for special applications that require low hardness.		Optimized for media compatibility; typically only used in static or light-duty dynamic sealing applications due to its low wear resistance.
■ Elastomers		SKF Ecoflon 5, 777	Similar to SKF Ecoflon 1 and 700, but with improved creep behaviour; 3A-approved.
SKF Ecorubber-H 85A-b-FG	Elastomer materials are recommended for higher temperature applications with chemical resistance requirements that polyurethanes cannot meet.	SKF Ecoflon 14, 754	Good wear resistance and non-abrasive against non-hardened surfaces; steam-cleanable but not suitable for sealing steam continuously.
SKF Ecorubber-2 85A-w-FG	An HNBR grade with good mechanical properties and wear resistance.	SKF Ecoflon 16	Similar to SKF Ecoflon 14 and 754, but offers better performance in steam applications; FDA-compliant.
SKF Ecorubber-3 85A-w-FG	An FKM grade with outstanding temperature and chemical resistance.	721	An FDA-compliant, filled PTFE that offers improved wear resistance in high-temperature applications.
SKF Ecorubber-3 85A-b-FG	Recommended for steam applications; not compatible with animal or vegetable oils/fats.	SKF Ecowear 1000, 776	Exceptional wear/abrasion resistance for sealing non-lubricating media. Extrusion resistance makes both materials suitable for homogenizers and other high-pressure applications.
SKF Ecosil	Recommended for steam applications; not compatible with animal or vegetable oils/fats.	795	Similar to SKF Ecowear 1000 and 776; improved oxidation resistance at high temperatures, tolerates steam cleaning for short periods.
	Offers excellent low-temperature behaviour; used primarily in static applications.		
¹⁾ Hardness value for thermoplastic polyurethanes (TPU) is recorded after a period of 3 seconds.			
²⁾ Suitable for a typical CIP cleaning cycle of up to 50 minutes, complete rinse with water as subsequent treatment step is required.			
³⁾ Compliance to FDA positive list and specific migration testing was performed and confirmed by an independent, accredited institute.			
⁴⁾ The material composition is according to the positive list of EC10/2011.			
⁵⁾ In case of self-energizing designs, SIP can lead to loss of preload and thus sealing functionality.			