

Clean Solutions – Adhesives and Moulding Compounds for **Filter Manufacturing**



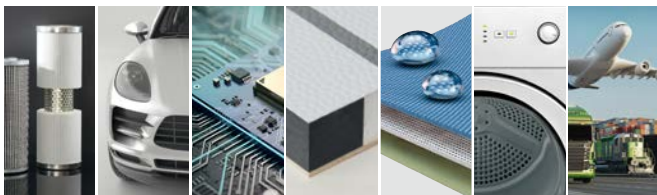
Decades of Experience • Best Delivery Performance • Comprehensive Service • Reliable Quality

Adhesives and Moulding Compounds for Filter Manufacturing



ADVANCEDmaterials

Filter-Automotive-Electronics-Sandwich-Textile-White Goods-Transportation



Filters are required in many processes, e.g. to remove impurities or harmful substances. Consequently, only the most reliable and high-quality materials should be used in filter manufacturing. KLEIBERIT filter adhesives and filter moulding compounds have set standards in this field and made a large impact on filter technology engineering. This filter guide provides an overview of filter types and their applications and properties.

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Company



KLEIBERIT – a leading brand for over 75 years in the world of adhesives for industry and handicraft.

KLEIBERIT adhesives have become indispensable in many areas of the modern world. Today the company is one of the most modern international research and development centers in the world of adhesives.

The product range is tailored to exactly meet customer requirements. Worldwide availability is ensured with an intelligent logistics concept.

KLEIBERIT Adhesives employs approx. 700 employees worldwide – www.kleiberit.com

Innovations

Working together with customers, ideas become new solutions. At the KLEIBERIT Technical Center in Weingarten, Germany, customers from all over the world regularly meet with research, development and application technology specialists to develop new possibilities and to prepare for future requirements.

Leading filter manufacturers have been using KLEIBERIT adhesives for many decades.

Our Filter Expert Team offers comprehensive advice and works side by side with customers, from the idea stage up to the final integration of the bonding solutions and processes according to international standards.



Customer Satisfaction

Every customer is number one with us.

With our worldwide network of Sales Engineers, and our presence in all markets worldwide, we provide our customers solutions and offers which are designed to meet their specific demands. Almost every national language is spoken within our on-site Sales Administration and Customer Consultation Centre in Weingarten. We cooperate with leading material and machine manufacturers to offer full solutions that comply with international standards such as the FDA standard for food contact and EU standard 10/2011.

Our Quality, Environmental and Energy Standard

KLEIBERIT places high value on product quality, customer service and sustainability. We have these requirements confirmed on an annual basis by an external and independent audit team according to ISO 9001, ISO 50001, ISO 14001 and ISCC PLUS.



Automotive Filters



Diesel filter



Cabin filter



Engine air filter











Engine air filter




Engine oil filter

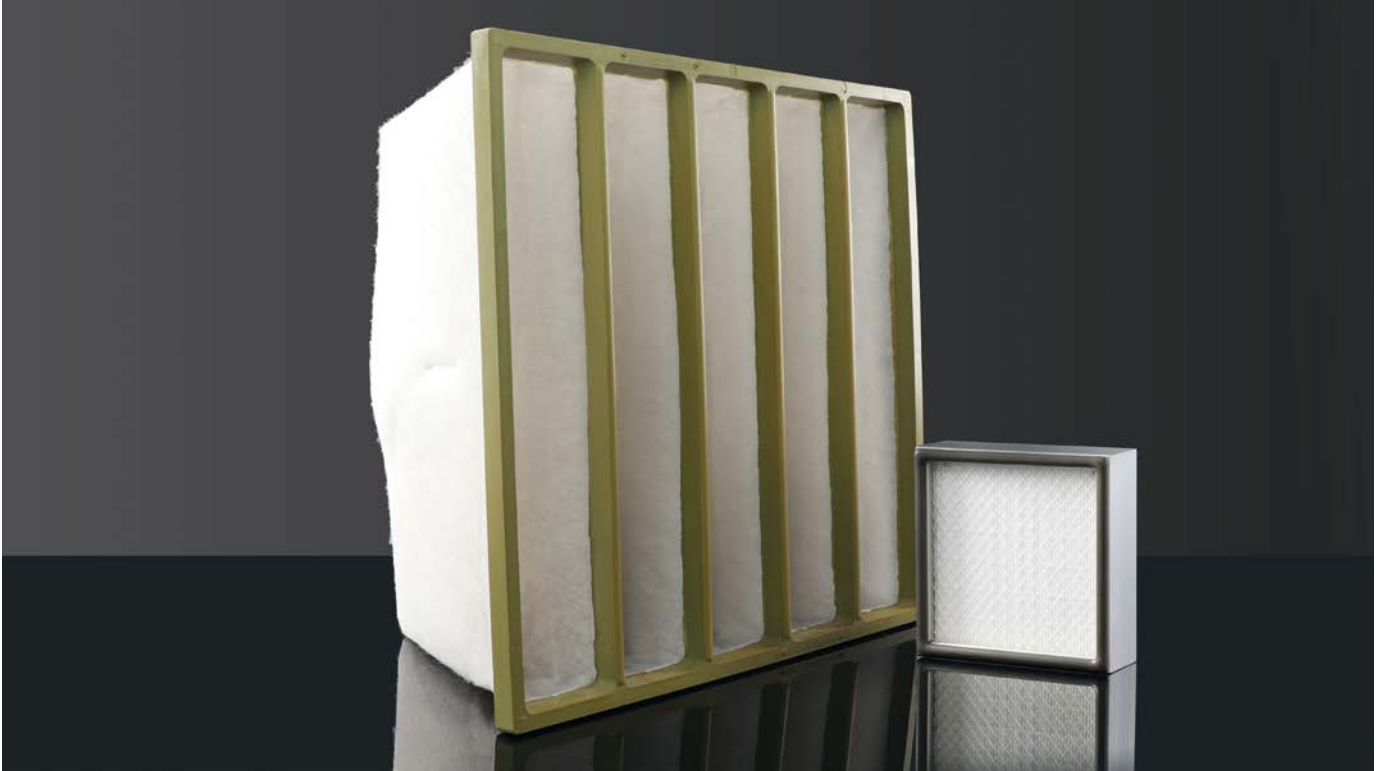


Application	Product	Product group
Diesel filter / Engine oil filter	541.6 	2C PUR moulding compound
	571.1 	2C PUR moulding compound
	576.1 	2C PUR adhesive
	599.0	2C PUR moulding compound
	599.1 	2C PUR moulding compound
	599.2 	2C PUR moulding compound
	703.5	Reactive PUR hotmelt
704.1	Reactive PUR hotmelt	
Cabin filter	521.1	2C PUR moulding compound
	522.5	2C PUR moulding compound
	549.1	2C PUR moulding compound
	703.8	Reactive PUR hotmelt
	713.9.30	Reactive PUR hotmelt
	713.9.50 	Reactive PUR hotmelt
	725.4/.5/.7/.9	PO hotmelt
796.1	PES hotmelt	
Engine air filter	521.1	2C PUR moulding compound
	522.5	2C PUR moulding compound
	526.5	2C PUR moulding compound
	576.1 	2C PUR adhesive
	704.1	Reactive PUR hotmelt
	796.1	PES hotmelt

 Micro-emission MDI < 0,1%

 bio-based, with renewable raw materials



Building Filters



Room filter



Pocket filter

Product	Product group
425.3	Special dispersion
425.6	Special dispersion
523.3	2K PUR foam
523.4	2K PUR foam
545.1.60	2C PUR moulding compound
574.4	2C PUR moulding compound
572.1	2C PUR moulding compound
575.0 	2C PUR moulding compound
575.8	2C PUR moulding compound
713.9.30	Reactive PUR hotmelt
713.9.50 	Reactive PUR hotmelt
729.7	EVA hotmelt

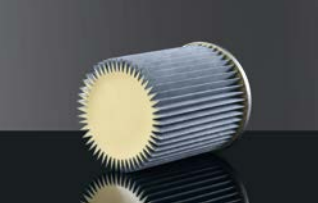
Hydraulic Filters





Hydraulic filter



Hydraulic filter



Decontamination filter

Product	Product group
525.5 	2C PUR moulding compound
525.8 	2C PUR moulding compound
531.1	2C EP moulding compound
531.4	2C EP moulding compound

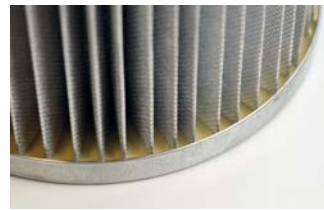
Industrial Filters



Metal edge filter



Air filter





Dust filter



Dust filter



Application	Product	Product group
Production of free-foamed polyurethane foam seals	523.3 523.4	2C PUR foam 2C PUR foam
Industrial dust removal filters	541.1  541.6  545.1.60 549.1 548.9	2C PUR moulding compound 2C PUR moulding compound 2C PUR moulding compound 2C PUR moulding compound 2C PUR moulding compound
Bonding filter pleats, pleat fixation and bonding banderoles	703.2 708.8 725.4 729.7	Reactive PUR hotmelt Reactive PUR hotmelt PO hotmelt EVA hotmelt

KLEIBERIT 2C moulding compounds and adhesive for filter

		Product comp. A	comp. B	Viscosity (Brookfield RVT) Comp. A (mPa*s) at 20 rpm and 20 °C	Viscosity (Brookfield RVT) Comp. B (mPa*s) at 20 rpm and 20 °C	Density comp. A (g/cm ³)	Density comp. B (g/cm ³)	Mixing ratio		Pot life at 20 °C in		Hardness Shore A			
								Parts by weight	Parts by volume	50g cup	100g cup	A	D	00	
2C PUR moulding compound/adhesive	Foamed, elastic	521.1	521.2	approx. 2,800	approx. 200	approx. 1.15	approx. 1.19	100:38	100:36.7	approx. 75 s	-	approx. 20-25 ¹	-	-	
		522.5	522.2	approx. 1,500	approx. 45	approx. 1.04	approx. 1.22	100:36	-	approx. 80 s	-	approx. 31 ²	-	-	
		523.3	523.6	approx. 28,000	approx. 250	approx. 1.19	approx. 1.19	100:20	100:20	approx. 150 s	-	-	-	approx. 45 ³	
		523.4	523.6	approx. 28,000	approx. 250	approx. 1.06 resp. approx. 0.97 with aeration	approx. 1.19	100:28	-	approx. 150 s	-	-	-	approx. 45 ⁴	
		526.5	526.6	approx. 4,500	approx. 250	approx. 1.32	approx. 1.19	5.5:1	5:1	approx. 90 s	-	approx. 20-25 ³	-	-	
	Compact, flexible	545.1.60	545.2.20	approx. 7,500	approx. 150	approx. 1.37	approx. 1.17	5:1	4,3:1	-	approx. 90 s	approx. 58	-	-	
		549.1	549.3	approx. 2,500	approx. 160	approx. 1.09	approx. 1.21	100:25	100:22.6	-	approx. 2-3 min	approx. 66	-	-	
		574.4	574.5	approx. 1,900	approx. 200	approx. 1.1	approx. 1.13	100:100	100:97	-	approx. 2.5 min	approx. 75	-	-	
	Compact, hard	Foamed, hard	576.1 	578.0	approx. 4,000	approx. 300	approx. 1.51	approx. 1.24	100:25	100:30	approx. 95 s	-	-	-	-
		525.5 	578.0	approx. 16,000	approx. 300	approx. 1.76	approx. 1.24	3:1	2.1:1	-	approx. 3,5 min	-	approx. 85	-	
		525.8 	578.0	approx. 16,000	approx. 300	approx. 1.76	approx. 1.24	3:1	2.1:1	-	approx. 3 min	-	approx. 85	-	
		541.1 	578.0	approx. 11,000	approx. 300	approx. 1.59	approx. 1.24	4:1	3.1:1	-	approx. 7 min	-	approx. 82	-	
		541.6 	870.0	approx. 30,000	approx. 150	approx. 1.59	approx. 1.23	4:1	100:32.4	-	approx. 45 min	-	approx. 80	-	
		571.1 	870.0	approx. 18,000	approx. 150	approx. 1.71	approx. 1.24	5.5:1	4:1	-	approx. 3 min	-	approx. 70	-	
		575.8	575.9	approx. 1,200	approx. 130	approx. 1.1	approx. 1.23	100:50	100:45	approx. 7-8 min	-	-	approx. 57	-	
		599.0	578.0	approx. 12,000	approx. 300	approx. 1.6	approx. 1.24	100:35	100:45	-	approx. 90 s	-	approx. 83	-	
		599.1 	578.0	approx. 25,000	approx. 300	approx. 1.6	approx. 1.24	100:40	100:51	-	4-5 min	-	approx. 84	-	
		599.2 	578.0	approx. 45,000	approx. 300	approx. 1.6	approx. 1.24	100:40	100:51	-	4-5 min	-	approx. 84	-	
		548.9	549.3	approx. 2,800	approx. 160	approx. 1.06	approx. 1.21	100:50	-	approx. 7-8 min	-	approx. 92	approx. 42	-	
		572.1	870.0	approx. 3,800	approx. 150	approx. 1.39	approx. 1.23	4,2:1	3,7:1	-	approx. 3-4 min	approx. 85	-	-	
575.0 		575.1	approx. 1,000	approx. 65	approx. 1.1	approx. 1.2	100:55	100:50	-	approx. 5 min	approx. 90	-	-		
2C EP moulding compound	Compact, hard	531.1	531.2	approx. 60,000	approx. 115,000	approx. 1.75	approx. 1.44	3:1	2.5:1	-	approx. 75 min	-	approx. 90	-	
		531.4	531.2	approx. 100,000	approx. 115,000	approx. 1.75	approx. 1.44	3:1	2.5:1	-	approx. 75 min	-	approx. 90	-	

¹ The measured values were determined on test specimens with a bulk density 330 - 350 kg/m³

² The measured values were determined on test specimens with a bulk density 415 kg/m³

³ The measured values were determined on formed-in-place gaskets with a bulk density of approx. 260 kg/m³ ⁴ The measured values were determined on formed-in-place gaskets with a bulk density of approx 280 kg/m³

⁵ The measured values were determined on test specimens with a bulk density 565 kg/m³

production

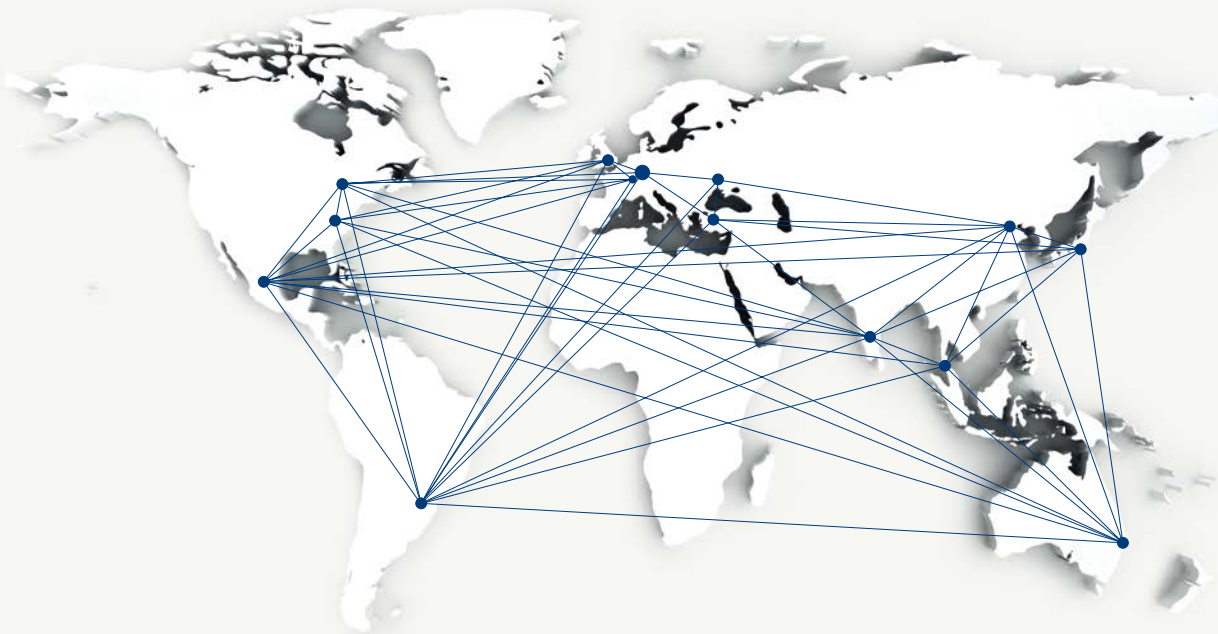
Raw density in 50 g cup (kg/m³)		Comments	Applications
free-foamed	foam-moulded		
approx. 250	-	For closed moulds	Frames and sealing lips of cabin filters and engine air filters
approx. 300	-	For closed moulds; fulfills TL 848	Moulding end caps and sealing lips of cabin filters and engine air filters
approx. 190	-	-	Production of free-foamed polyurethane foam seals
approx. 195	-	Component A is already being supplied being aerated	Production of free-foamed polyurethane foam seals
approx. 450-500	approx. 550	For open moulds	Moulding end caps and sealing lips of engine air filters
-	-	Manufacture of end caps for air filters and other compact sealing lips	Hydraulic tank breather filter; air filter / air purifier
-	-	Good tear resistance; B component must not be stored below 15 °C.	Production of air filter end caps and other compact sealing lips
-	-	Light-fast, transparent, bacteriostatic and fungistatic	Repair compound for HEPA / ULPA filters
approx. 775	-	Low pressure equipment	Bonding filter end caps in engine air filters, diesel fuel and engine oil filters (metal and plastic end caps)
-	-	Good resistance to various media, especially hydraulic oils; self-thixotroping	Longitudinal seam bonding of filter elements
-	-	Good resistance to various media, especially hydraulic oils	Production of filters with self-supporting end caps made of compact and hard-setting PUR; bonding filter end caps
-	-	Good resistance to various media; compliant with FDA regulation 21 CFR § 177.1680	Industrial dust removal filters; production of filters with self-supporting end caps made of compact and hard-setting PUR; bonding filter end caps
-	-	Suitable for manual processing	Production of filters with self-supporting end caps made of compact and hard-setting PUR; bonding sheet metal end caps for oil, diesel fuel and kerosene filters
-	-	-	Bonding filter end caps in engine air filters, diesel fuel and engine oil filters (metal and plastic end caps)
-	-	Self-thixotroping; bacteriostatic and fungistatic	Production of industrial filters (e.g. HEPA, ULPA filters)
-	-	-	Hard moulding compound for casting metal-free end caps for oil filters
-	-	High resistance in engine oil (tested SAE 0W-30)	Hard moulding compound for manufacturing oil filters in the casting process
-	-	High resistance in engine oil (tested SAE 0W-30)	Hard moulding compound for manufacturing oil filters in the casting process
-	-	-	Manufacture of air filter end caps
-	-	-	For the production of industrial filters (e.g. HEPA, ULPA)
-	-	Bacteriostatic and fungistatic; suitable for pre-assembled filters (good flow characteristics)	For the production of industrial filters (e.g. HEPA, ULPA)
-	-	-	Bonding end caps; production of filter elements for hydraulic and fuel filters
-	-	Slightly thixotropic	Bonding end caps; production of filter elements for hydraulic and fuel filters

KLEIBERIT hotmelts and dispersions for filter pleat bonding

	Product	Base	Viscosity (Brookfield bei 10 rpm in mPa*s) at		Density (g/cm ³)	Processing temperature (°C)	Softening temperature (°C; ring + ball)
	725.4	PE	180 °C: approx. 55,000 200 °C: approx. 35,000		approx. 0.95	180 - 210	approx. 110
	725.5	PO	180 °C: approx. 40,000 200 °C: approx. 25,000		approx. 0.95	160 - 180	approx. 160
	725.7	PO	160 °C: approx. 35,000 180 °C: approx. 16,000		approx. 0.92	180 - 200	approx. 135 - 150
	725.9	PO	160 °C: approx. 40,000 180 °C: approx. 20,000		approx. 0.92	160 - 180	approx. 125
	729.7	EVA	140 °C: approx. 17,000 160 °C: approx. 9,000		approx. 0.95	140 - 160	approx. 125
	796.1	PES	180 °C: approx. 40,000 200 °C: approx. 24,000		approx. 1.25	180 - 200	approx. 160
PUR hotmelts	Product	Base	Viscosity (Brookfield bei 10 rpm in mPa*s) at 120 °C	Viscosity (Brookfield bei 10 Upm in mPa*s) at 140 °C	Density (g/cm ³)	Processing temperature (°C)	
	703.2	PUR	approx. 28,000	approx. 17,000	approx. 1.1	100 - 120	
	703.5	PUR	approx. 11,000	approx. 6,000	approx. 1.1	120 - 140	
	703.8	PUR	approx. 48,000	approx. 23,000	approx. 1.1	120 - 140	
	704.1	PUR	approx. 25,000	approx. 16,000	approx. 1.1	110 - 140	
	708.8	PUR	approx. 10,000	approx. 5,000	approx. 1.1	120 - 140	
	713.9.30	PUR	approx. 13,000	approx. 6,000	approx. 1.1	110 - 130	
	713.9.50 	PUR	approx. 10,000	approx. 5,000	approx. 1.1	110 - 130	
Dispersions	Product	Base	Viscosity (Brookfield RVT) at 20 °C	Density (g/cm ³)	pH value		
	425.3	Special dispersion	approx. 2,200	approx. 1.25	approx. 6		
	425.6	Special dispersion	approx. 1,500	approx. 1.2	approx. 6.5		

Open time (determined on a 2mm bead on phenolic resin filter paper) at an application temperature of:	Remarks	Applications
210 °C: approx. 28 s		Pleat bonding and pleat fixation
200 °C: approx. 20 s	Low fogging grade	Production of cabin filters; edge banding, pleat bonding and pleat fixation
200 °C: approx. 20 s	Low fogging grade	Edge banding and pleat fixation of cabin filters
160 °C: approx. 22 s	Low fogging grade	Production of passenger compartment filters; edge banding, pleat bonding and pleat fixation
160 °C: approx. 20 s		Pleat bonding and pleat fixation of HEPA filters
210 °C: approx. 30 s	Processable in melters	Filter paper bonding in automobile filter production; pleat bonding and pleat fixation
Open time (determined on a 2mm bead on phenolic resin filter paper) with an application temperature of 140°C:	Remarks	Applications
approx. 10 s	Compliant with food regulations EU 10/2011, and FDA 21 CFR § 177.105 and § 177.1680	Bonding filter pleats, pleat fixation and bonding banderoles
approx. 30 s	Low fogging grade; very good metal adhesion	Longitudinal seam bonding of fuel and diesel filters; edge banding and bonding banderoles
approx. 30 s	Low fogging grade; very good plastic adhesion	Edge banding and bonding banderoles in cabin filters
approx. 3 s	Engine oil and diesel fuel resistant, very short open time; especially for temperature-sensitive materials	Filter paper bonding in automobile filter production; pleat bonding and pleat fixation; bonding banderoles
approx. 80 s		Bonding pleats (filter tips) and banderoles of industrial dust removal filters
-		Production of activated carbon filters
-	ME-product: MDI <0,1%	Production of activated carbon filters
		Applications
		Pleat bonding and pleat fixation of HEPA and ULPA filters, fiber binding agents for filter mats
		Pleat bonding and pleat fixation of HEPA and ULPA filters, fiber binding agents for filter mats

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