

LOCTITE[®]

TECHNOMELT[®]

TEROSON[®]

**WATER, FOOD
AND BEVERAGES
FILTRATION SOLUTIONS
MEDICAL FILTRATION
SOLUTIONS**

Adhesives, Sealants, Equipment and Services

Henkel

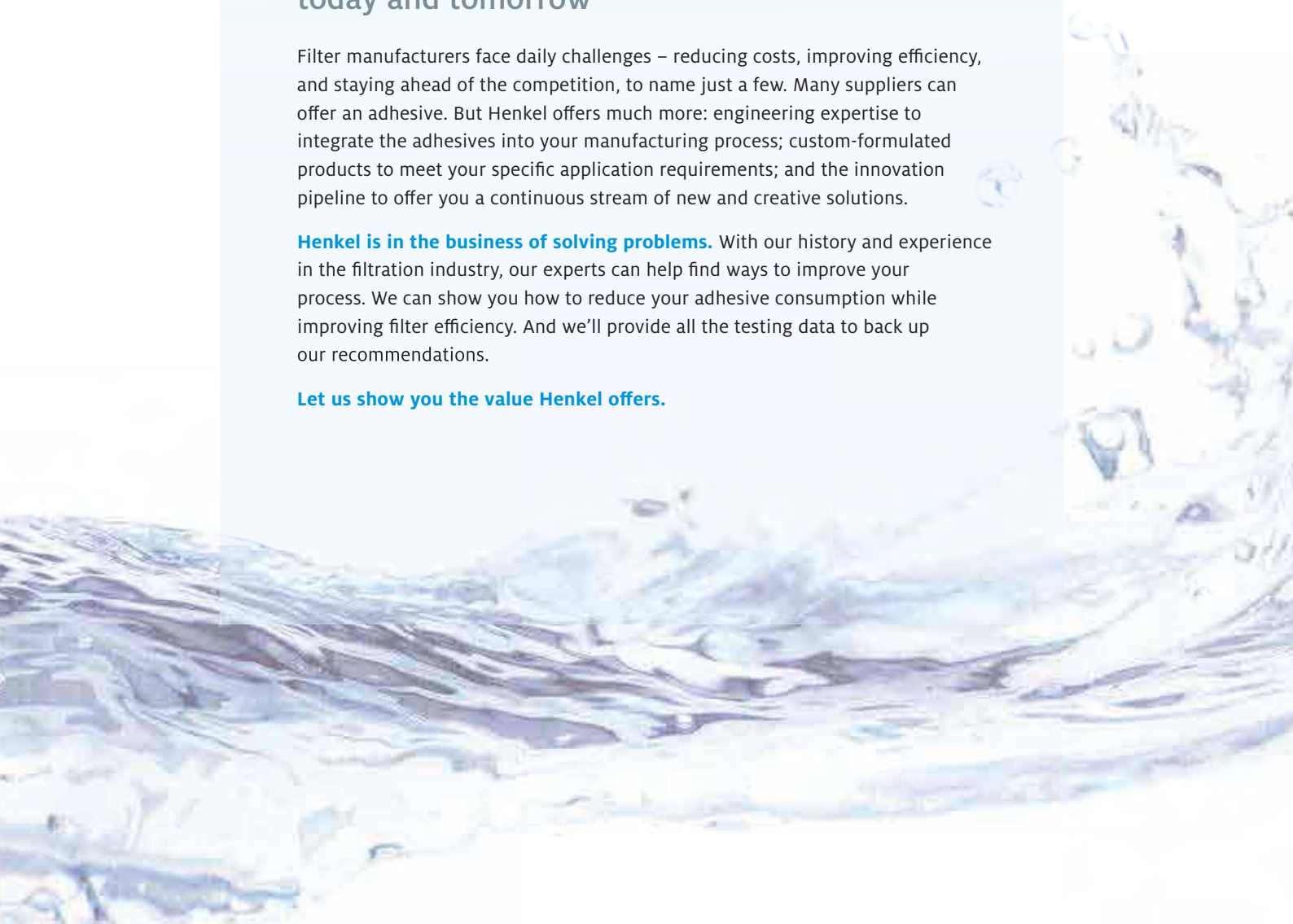
Henkel. Improving your process, understanding your challenges.

Proven filtration solutions for all your needs – today and tomorrow

Filter manufacturers face daily challenges – reducing costs, improving efficiency, and staying ahead of the competition, to name just a few. Many suppliers can offer an adhesive. But Henkel offers much more: engineering expertise to integrate the adhesives into your manufacturing process; custom-formulated products to meet your specific application requirements; and the innovation pipeline to offer you a continuous stream of new and creative solutions.

Henkel is in the business of solving problems. With our history and experience in the filtration industry, our experts can help find ways to improve your process. We can show you how to reduce your adhesive consumption while improving filter efficiency. And we'll provide all the testing data to back up our recommendations.

Let us show you the value Henkel offers.





INNOVATION

More than 30% of our sales comes from **products launched** in the last five years.



CUSTOMIZED SOLUTIONS

We will create the formula that meets your **exact** requirements.



GLOBAL SUPPLY CHAIN

to maintain a **reliable supply** of products to our customers.



BROAD PRODUCT PORTFOLIO

to provide the optimum **solution** for your challenges.

WHY HENKEL?

Henkel, **the leading solution provider for adhesives, sealants and functional coatings worldwide**, provides more than adhesives. We work with you to optimize your manufacturing process, identify improvements, and solve your toughest challenges.

We're your partner every step of the way.



COMPREHENSIVE TESTING

to **support** our product and process recommendations.



ENGINEERING SERVICES

10 R&D centers around the world staffed by 3,000 design and application **professionals**.



INTEGRATED MANUFACTURING PROCESS

to **ensure** our equipment works seamlessly with your production line.



GLOBAL SUPPORT

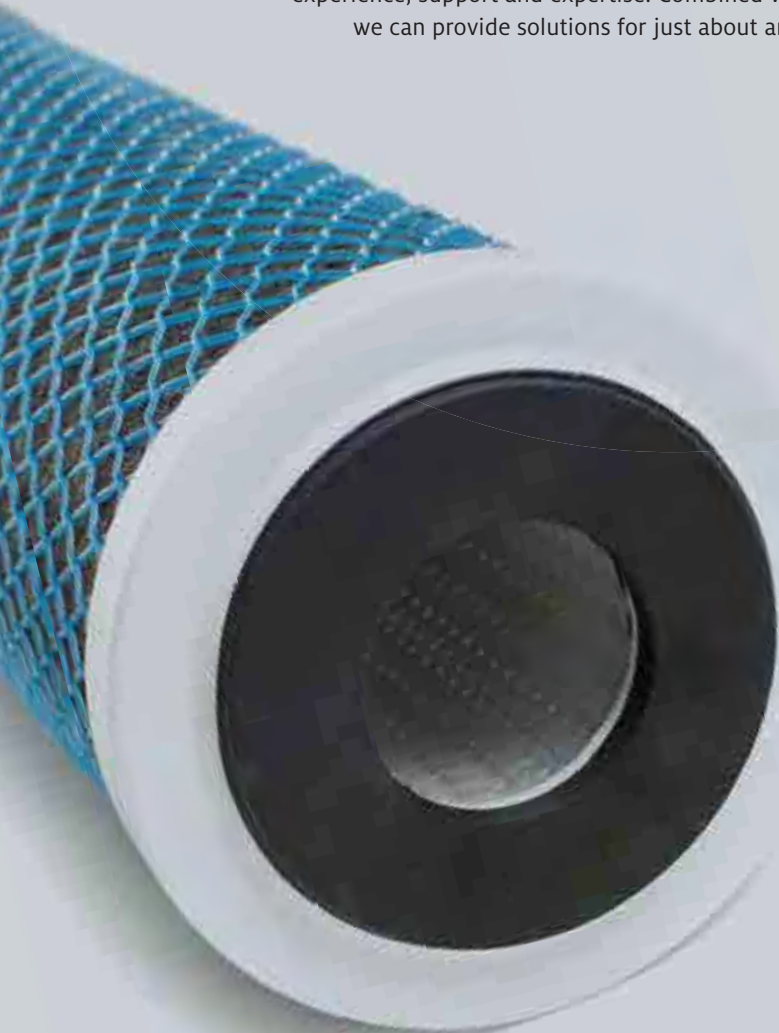
no matter where in the world you're **located**.



Filtration Expertise and Value-Added Partnership

In-depth industry knowledge. And the broadest technology portfolio in the business.

With a global team dedicated to the filtration industry, Henkel offers years of experience, support and expertise. Combined with our broad product portfolio, we can provide solutions for just about any product or process challenge.



INNOVATIONS IN ADHESIVE SOLUTIONS | 6

WATER, FOOD AND BEVERAGE FILTRATION MARKETS | 8



Drinking Water



Dairy, Food and Beverage



Wastewater



Process Water



Pool and Spa

Technology Overview | 10

Spiral Wound Membrane Bonding	12
Filament Winding	14
Carbon Block Filtration/End Cap Bonding.....	15
Hollow Fiber Potting	16
Pleated Filters	22

MEDICAL FILTRATION MARKETS | 25



Dialyzers and Oxygenators

Hollow Fiber Potting	26
----------------------------	----

HENKEL SERVICES | 29

Innovation. Partnership. Solutions.

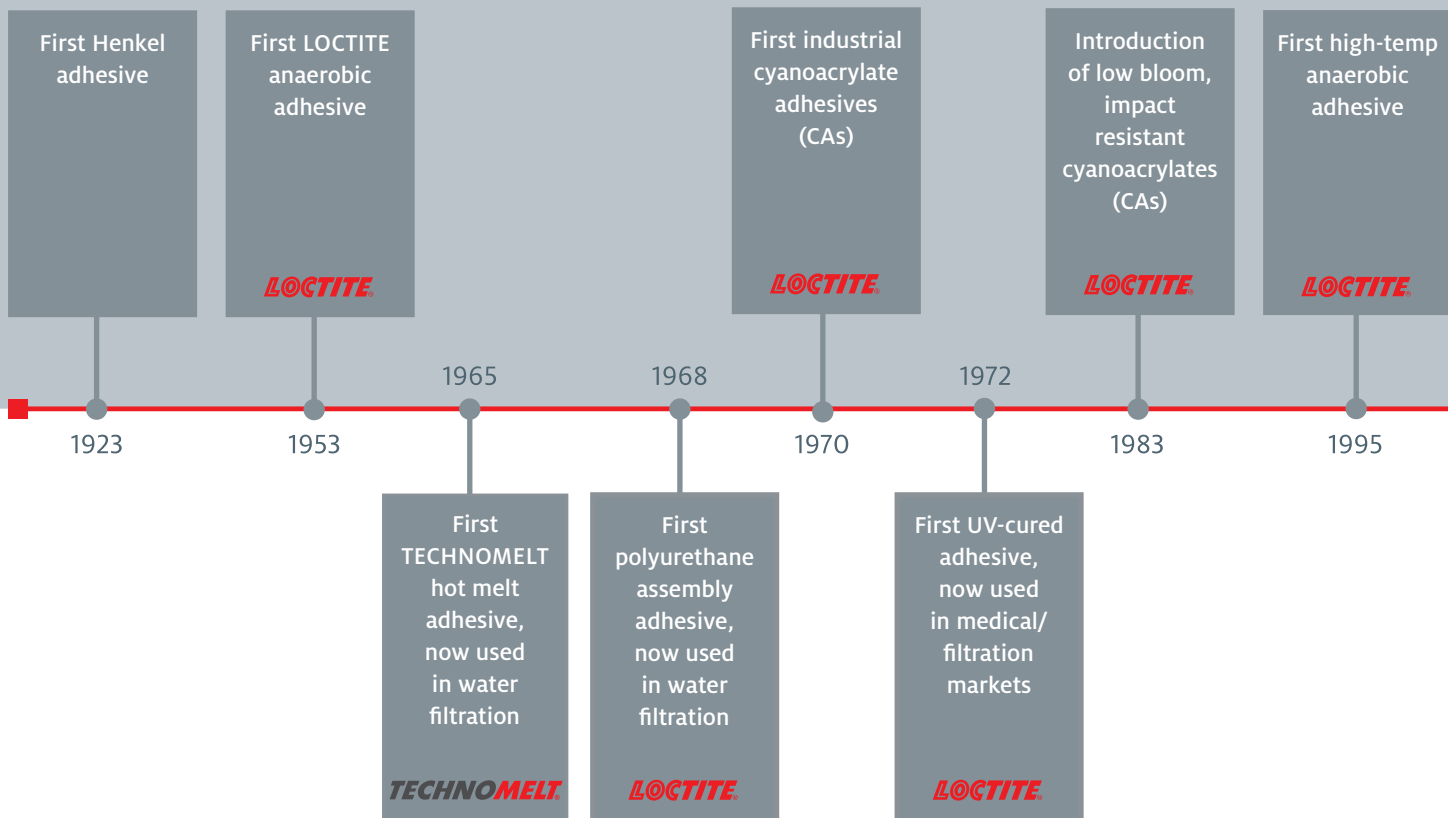
Many of our solutions work across filtration applications. We've categorized them here so that you can easily identify the solutions that meet your needs. We're not just a supplier, we're a solution provider. Contact us to help solve your manufacturing challenges.

Visit
www.loctite.in
 or email us at
marketing.acmindia@henkel.com



Innovations in Adhesive Solutions

A brief history of Henkel breakthroughs

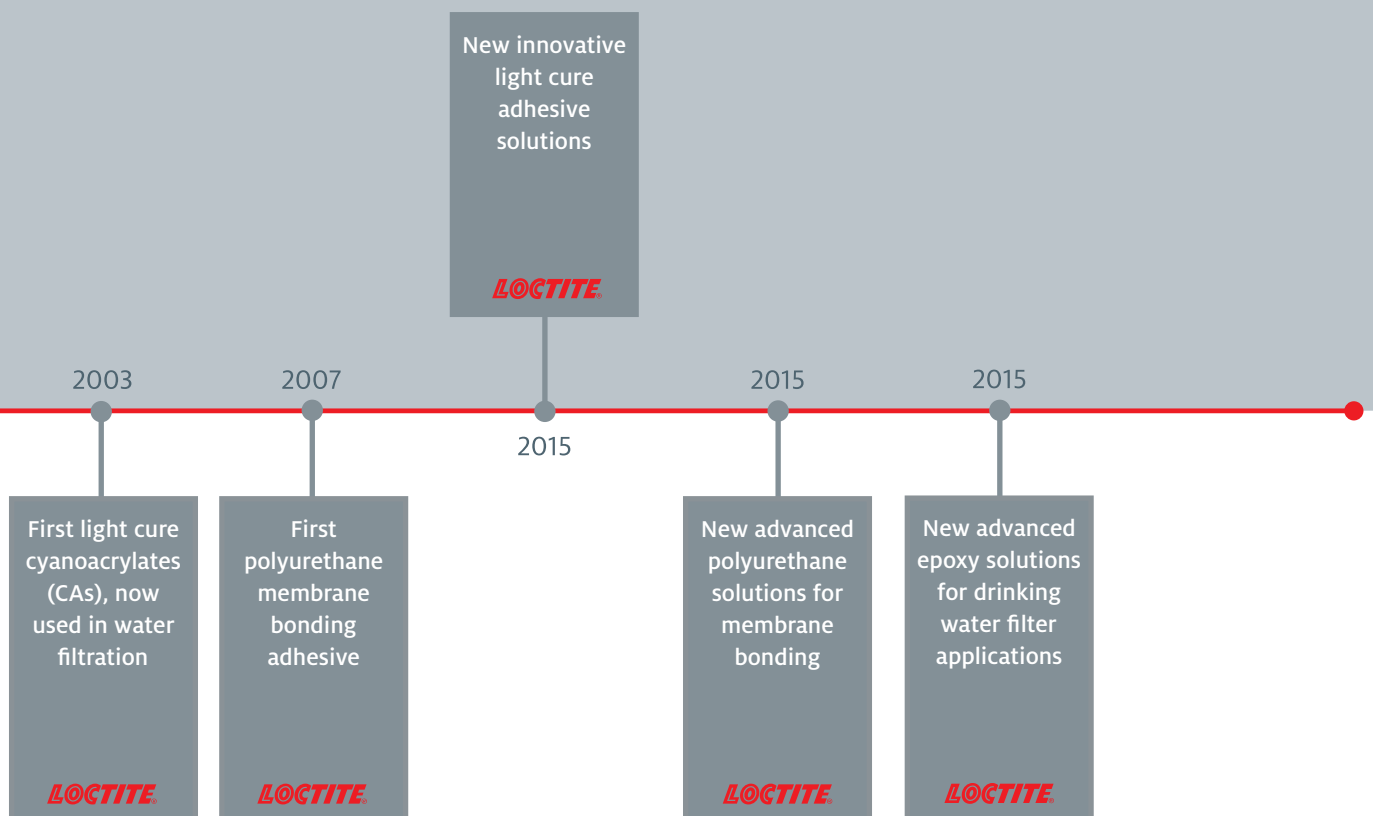


Expertise in Adhesives; Expertise in Filtration

Henkel's commitment to innovation has led to breakthroughs in the adhesives industry for more than 90 years. Today, more than 30 percent of our sales comes from products launched in the last five years. Our focus on innovation helps us find solutions to our customers' toughest challenges.

Henkel's global filtration team is dedicated to helping filter manufacturers solve problems, reduce costs and improve efficiencies. Let us help you:

- Optimize your adhesive use while improving filter performance
- Increase production speed
- Increase filter reliability
- Reduce inventory and scrap costs
- Reduce overall manufacturing costs and increase efficiency



WATER FILTRATION



MARKETS



Drinking Water Dairy, Food and Beverage Process Water

Spiral wound membrane bonding,
filament winding, end cap bonding

As water becomes a scarce resource in many regions of the world, filter manufacturers need to keep pace with the demand for better, more refined filtration options. Henkel has the expertise to formulate custom adhesives to meet your changing needs. Our polyurethane adhesives resist a wide range of pH, chemicals, temperatures and pressures while meeting agency approvals. Our hot melt adhesives offer reliable performance for carbon block and end cap bonding.



Wastewater Management Process Water Water Recycling

Hollow fiber potting, fiber sealing

The municipal wastewater, industrial wastewater and water recycling industries are facing increased regulations for water treatment and recycling. Henkel's innovation capabilities allow us to develop new adhesive solutions to keep pace with changing substrates, process automation upgrades and more demanding filtration requirements.



Pool and Spa

End cap replacement, pleat separation,
first pleat/last pleat bonding

Pool and spa owners want filters that keep their water clean and clear with simple operation, low maintenance and reliable performance. Henkel offers an array of adhesive solutions for end cap replacement, pleat separation and first pleat/last pleat bonding that help filter manufacturers guarantee filter function and durability.

Partner with Henkel for Solutions in all Filtration Technologies

Industry standards: FDA, NSF, KTW, EU Food, ISO

Low scrap • Fast processing speeds • Flexibility



Spiral Wound Membrane Bonding

Henkel's solutions for spiral wound filtration elements range from microfiltration to reverse osmosis.

- High chemical resistance
- Blister-free
- Low scrap
- Increase production speeds
- Stable raw material supply
- Industry standards – FDA, NSF, KTW and EU Food

Filament Winding

- Low viscosity
- High strength



Carbon Block Filtration

Henkel offers reliable solutions for end cap bonding as well as end cap molding and demolding.

- Long open times
- Good adhesion to low surface energy plastics, i.e., PP, PE
- Clear or off-white to match end caps
- Industry standards — FDA, KTW, NSF and EU Food



Hollow Fiber Potting

Henkel provides adhesive solutions for any of your dry and/or wet hollow fiber application needs, for static or centrifugal processes.

Centrifugal Potting

- Fast curing
- Low shrinkage and wicking
- Controlled trim windows
- Industry standards: FDA, NSF, KTW, EU Food, ISO

Static Potting

- Larger potting areas
- Chemical-resistant applications
- Industry standards: FDA, NSF, KTW, EU Food, ISO



Pleated Filters

Henkel offers a variety of hot melt adhesive solutions for end cap replacement, pleat separation and first pleat/last pleat applications.

- Fast processing speeds
- Low wicking
- Excellent chemical resistance
- Industry standards: FDA, KTW, NSF and EU Food

Spiral Wound Membrane Bonding

Applications include drinking water, process water, desalination, dairy, food and beverage filtration



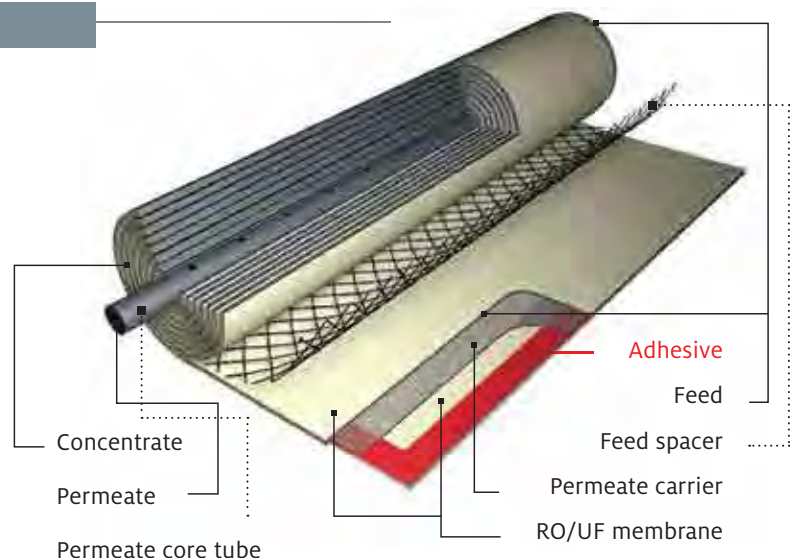
Spiral wound filtration elements support a wide range of applications and environmental conditions. Henkel offers adhesive solutions for both wet and dry membranes that provide the temperature and chemical resistance required for virtually any application. Our solutions can improve filter designs and manufacturing with:

- **Improved efficiencies** – optimized adhesive leaves more available membrane surface area
- **Higher production outputs** – optimized for dispense and cure speed
- **Reduced field failures** – robust, specifically designed adhesive systems
- **Reduction of work in process (WIP)** – faster, streamlined
- **Reduced scrap cost** – optimized penetration for reducing blistering and veining, minimal variation

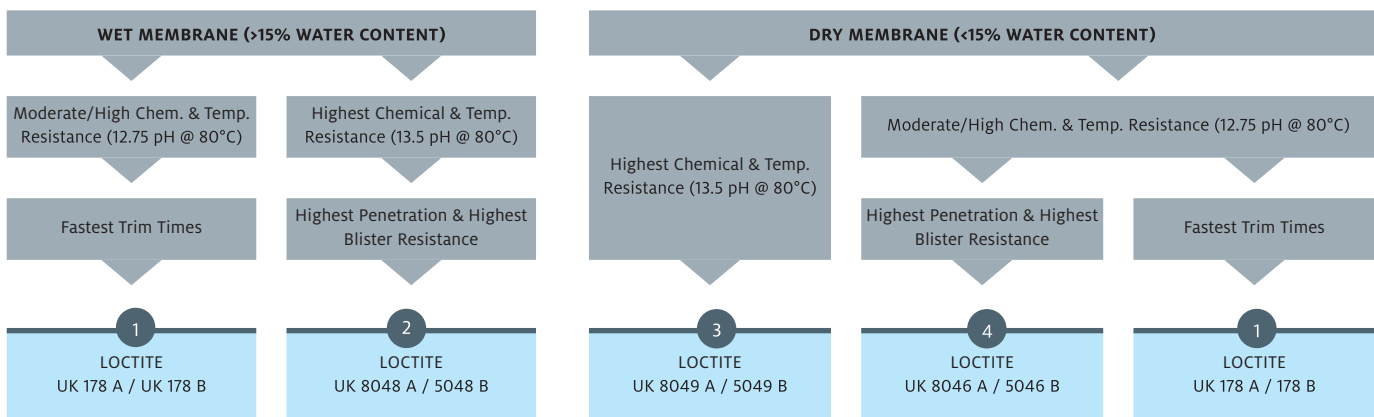
Minimize your investment and risk with fully tested and qualified solutions. Henkel can thoroughly test the performance of our adhesives with your membrane. From the lab to the shop floor, we will optimize the adhesive and application process to maximize your manufacturing efficiency and filter performance.

Spiral Wound Filter Diagram

- High chemical resistance
- Blister-free
- Low scrap
- Increase production speeds
- Stable raw material supply
- Industry approvals – FDA, NSF, KTW and EU Food



SPIRAL WOUND FILTRATION SOLUTIONS — TWO-PART POLYURETHANE SYSTEMS



TWO-PART POLYURETHANE SYSTEMS – Typical Properties

SPIRAL WOUND MEMBRANE BONDING													
PRODUCT NO.	TYPE	VOL. MIX RATIO (A:B)	MASS MIX RATIO (A:B)	MIXED VISCOSITY (cPs)	SHORE HARDNESS	GEL TIME (100 G AT 77°F)	OPEN TIME (MIN.)	TRIM TIME (HRS.)	VISCOSITY (cPs)	COLOR	AGENCY	DESCRIPTION	
LOCTITE UK 178 A		LOCTITE UK 178 A and UK 178 B combined											
IDH 1579616 (Pail) IDH 1219058 (Drum) IDH 1219060 (Tote)	Polyol								18,000			Fast trim times, optimized performance for wet and dry membrane	
LOCTITE UK 178 B		1:1	0.9:1	18,000	85-90 (A)	40-60 min.	15-20	4-8 hrs.		Amber	FDA 175.105 & NSF 61		
IDH 1579615 (Pail) IDH 1219061 (Drum) IDH 1219063 (Tote)	Iso								18,000				
LOCTITE UK 8048 A		LOCTITE UK 8048 A and UK 5048 B combined											
IDH 2008995 (Pail) IDH 2008997 (Drum)	Polyol								30,000			Highest temp. and chemical resistance, wet or dry membrane	
LOCTITE UK 5048 B		1:1	0.89:1	18,000 (thixo.)	50 (D)	40-60 min.	20	< 8 hrs.		Amber	FDA 175.105		
IDH 2008347 (Pail) IDH 2008348 (Drum)	Iso								11,000				
LOCTITE UK 8049 A		LOCTITE UK 8049 A and UK 5049 B combined											
IDH 2008976 (Pail) IDH 2008994 (Drum)	Polyol								30,000			Highest temp. and chemical resistance, dry membrane	
LOCTITE UK 5049 B		1:1	0.89:1	18,000 (thixo.)	50 (D)	40-60 min.	20	< 8 hrs.		Amber	FDA 175.105		
IDH 2008345 (Pail) IDH 2008346 (Drum)	Iso								11,000				
LOCTITE UK 8046 A		LOCTITE UK 8046 A and UK 5046 B combined											
IDH NA (Drum)	Polyol								20,000			High temp. and chemical resistance, highest penetration, dry membrane	
IDH NA (Pail)													
LOCTITE UK 5046 B		1:1	0.89:1	13,000 (thixo.)	95 (A)	60-80 min.	15-20	4 hrs. (@ 50°C)		Amber	FDA 175.105		
IDH NA (Drum) IDH NA (Pail)	Iso								7,000				

LEARN MORE:

This catalog lists the most common products used in each application. Many additional products are available. Not all products are available in all countries. Contact your Henkel representative for assistance.

Filament Winding

Drinking water applications

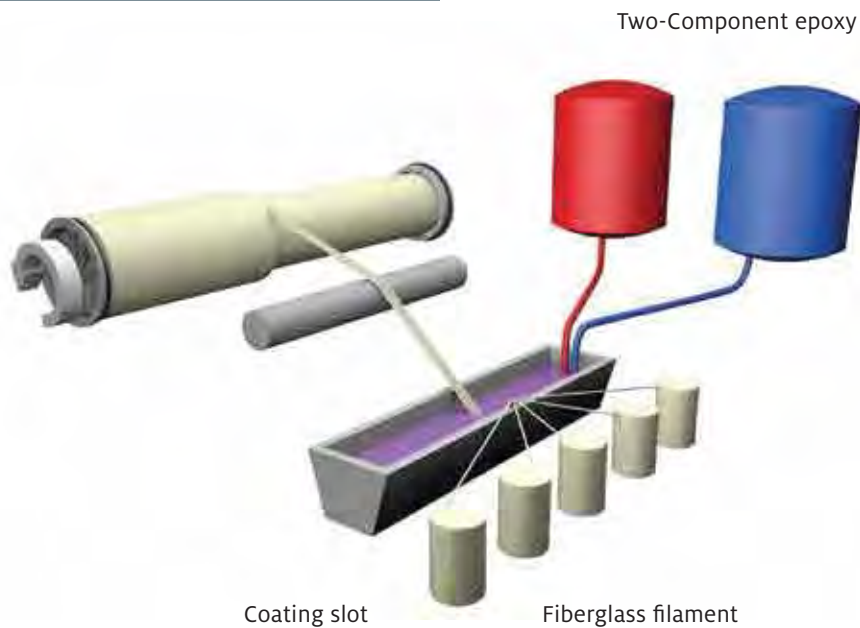
Low viscosity, high strength



EPOXY – Typical Properties

FILAMENT WINDING												
PRODUCT NO.	TYPE	VOL. MIX RATIO (A:B)	MASS MIX RATIO (A:B)	VISCOSITY (cPs)	MIXED VISCOSITY (cPs)	SHORE HARDNESS	GEL TIME (100 G AT 77°F)	TENSILE STRENGTH (PSI)	TEAR STRENGTH (LBS./IN.)	COLOR	AGENCY	DESCRIPTION
LOCTITE EA 1623986 A and B												
IDH 1638452 A (Drum)	Resin	3:1	100:29	3,000	1,000	80-85 (D)	17 min. (200 g)	High	High	Clear	FDA 175.300	Low viscosity High strength
IDH 1638450 B (Drum)	Hard			22								

Filament Winding



LEARN MORE:

This catalog lists the most common products used in each application. Many additional products are available. Not all products are available in all countries. Contact your Henkel representative for assistance.

Carbon Block Filtration End Cap Bonding

Drinking water applications

Reliable performance



End caps on carbon block cylinders are an important part of filter performance, since they ensure that water is forced through the carbon. The end caps also ensure that the filter cartridge seals properly within the housing. Adhesives for end cap bonding must be able to accommodate a wide variety of manufacturers' product sizes and production needs.

Henkel's hot melt adhesives for end cap bonding offer:

- **Long open times up to 80 seconds**
- **Good adhesion** to low surface energy plastics, i.e., PP, PE
- **Clear and off-white colors** to match end caps
- **Industry approvals:** FDA 175.105, KTW and NSF



HOT MELT – Typical Properties

END CAP BONDING									
PRODUCT NO.	TYPE	ASSEMBLY TIME	OPEN TIME (SEC.)	SOFTENING POINT (°C) / (°F)	VISCOSITY (CPS)		COLOR	AGENCY	DESCRIPTION
					AT 325°F	AT 350°F			
TECHNOMELT AS 2787									
IDH 1469016 (Box)	PO	Moderate	Moderate (40-60)	90 / 194	4,800	3,800	Yellow	FDA 175.105	High tack
TECHNOMELT AS 4222									
IDH 266079 (Box)	PO	Fast	Short (10-20)	160 / 320	4,800	8,100	White	FDA 175.105/NSF* and KTW	High temp. and fast set speed
TECHNOMELT AS 4208									
IDH 930825 (Box)	PO	Moderate	Moderate (40-60)	100 / 212	17,000	12,000	White	FDA 175.105/NSF* and KTW	Well-balanced
TECHNOMELT AS 947C									
IDH 1217927 (Box)	EVA	Moderate	Long (60-80)	78 / 172	7,400	4,500	White	FDA 175.105/NSF*	Go-to product
TECHNOMELT AS 232									
IDH 420348 (Box)	EVA	Moderate	Long (60-80)	87 / 189	17,000	11,000	White	FDA 175.105/NSF*	Go-to product

*Filters manufactured with these products have been NSF approved. Note: Typically entire filter assemblies must be submitted and approved by NSF.

Hollow Fiber Potting

Applications include drinking water, process water, wastewater, dairy, food and beverage, and medical filtration

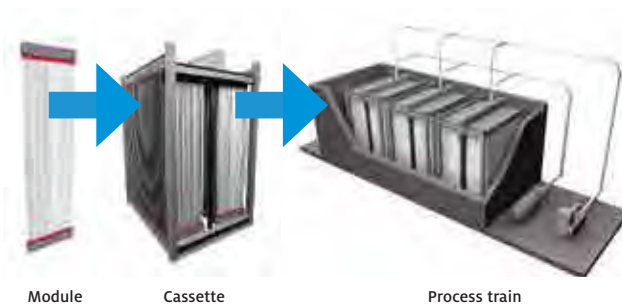
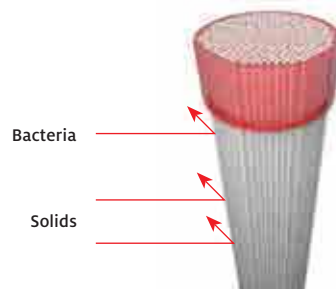
Solutions for static and centrifugal processes



Hollow Fiber Potting

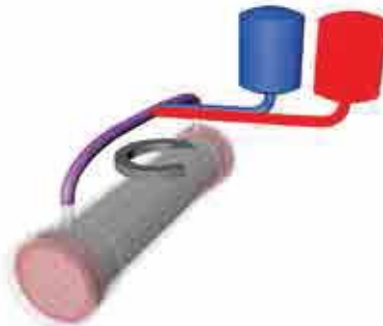
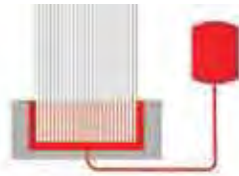
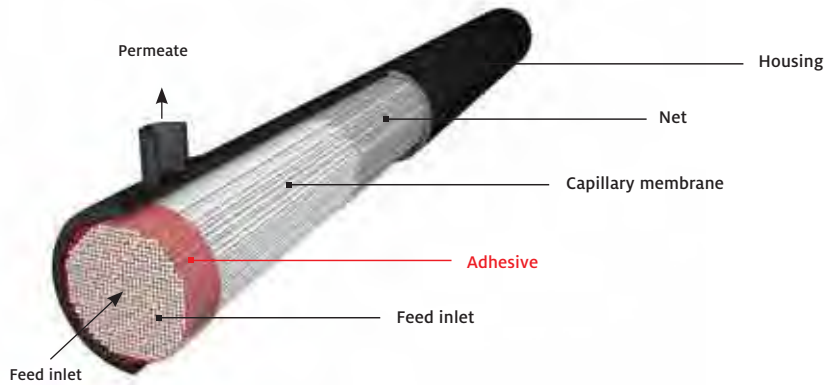
Henkel can provide adhesive solutions for any of your hollow fiber potting application needs, whether you have large parts requiring a static process or high speed production needs with a centrifugal process. We will recommend the right adhesive, develop an optimized process and bring in the equipment partners to provide best-in-class solutions.

Water Purification



For other innovative processing solutions to speed up your production line. Contact your Henkel representative or Visit : www.henkel-adhesives.com/in

Water Purification



Static Potting

Benefits:

- Larger potting areas
- Chemical-resistant applications

Centrifugal Potting

Benefits:

- Fast curing
- Low shrinkage and wicking
- Controlled trim windows

Fiber Sealing

Step One:

- Bundle with quick-setting hot melt

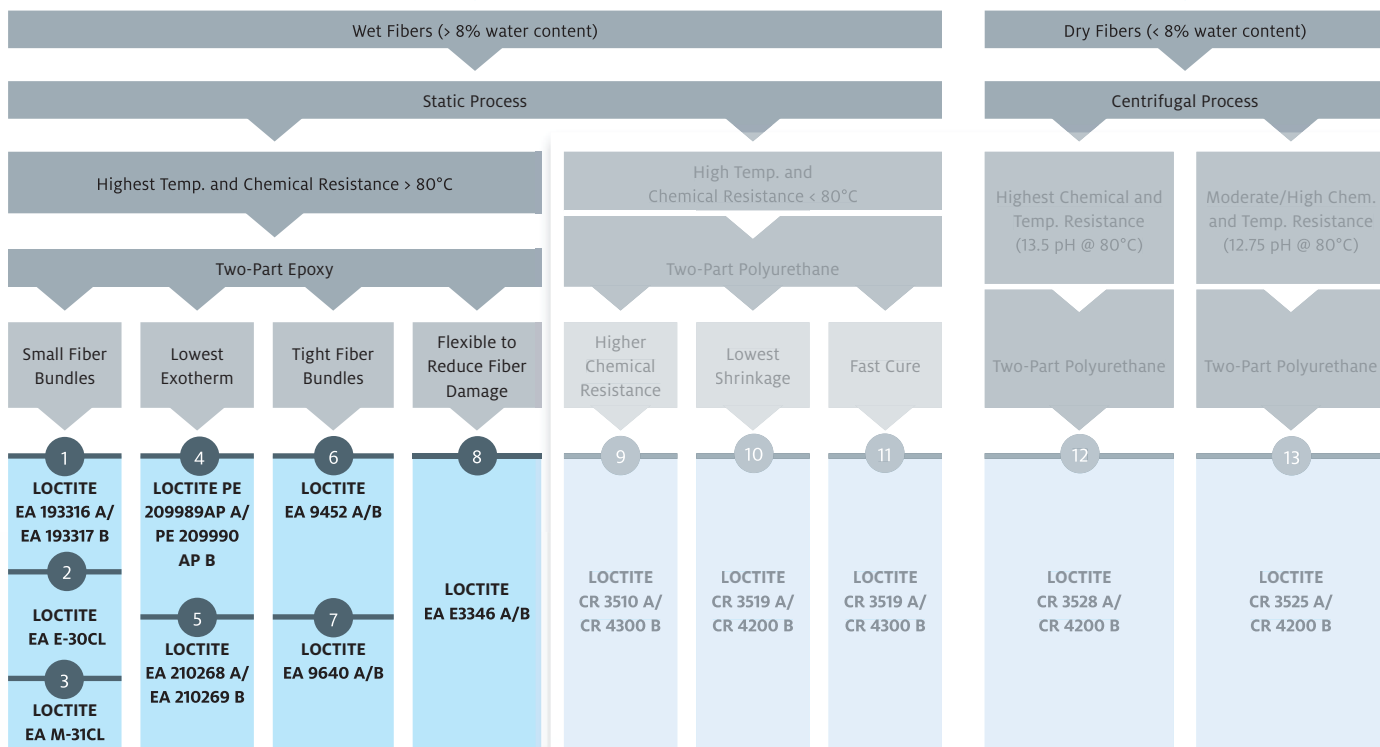


Step Two:

- Pot with epoxy or polyurethane



HOLLOW FIBER POTTING



See page 21 for information on these products.

LEARN MORE:

This catalog lists the most common products used in each application. Many additional products are available. Not all products are available in all countries. Contact your Henkel representative for assistance.

TWO-PART EPOXY SYSTEMS – Typical Properties

HOLLOW FIBER POTTING												
PRODUCT NO.	TYPE	VOL. MIX RATIO (A:B)	MASS MIX RATIO (A:B)	MIXED VISCOSITY (cPs)	SHORE HARDNESS	GEL TIME (100 G AT 77°F)	TENSILE STRENGTH (PSI)	VISCOSITY (cPs)	COLOR	AGENCY	DESCRIPTION	
LOCTITE EA 193316 A		LOCTITE EA 193316 A and EA 193317 B combined										
1	IDH 1094638 (Can)	Resin						3,500				
	LOCTITE EA 193317 B		2.44:1	100:34.5	3,000	85 (D)	180 min.	High	Amber	—	Controlled viscosity	
	IDH 1094639 (Can)	Hardener						500				
LOCTITE EA E-30CL		LOCTITE EA E-30C L										
2	IDH 233992 (Pail)	Resin						10,500				
	IDH 233994 (Pail)	Hardener	2:1	100:46	6,000	85 (D)	160 min.	High	2,000	Clear	—	
	IDH 237116 (50 ml Cart.)							10,500 Resin/			Controlled viscosity (small application < 30 g)	
	IDH 237118 (400 ml Cart.)	Dual	2:1	100:46	6,000	85 (D)	160 min.	High	2,000 Hardener			
LOCTITE EA M-31CL		LOCTITE EA M-31C L										
3	IDH 235021 (50 ml Cart.)	Dual						10,500 Resin/			Controlled viscosity (small application < 30 g)	
	IDH 235023 (200 ml Cart.)		2:1	100:46	6,000	85 (D)	160 min.	High	2,000 Hardener	Clear	ISO 10993	
LOCTITE PE 209989AP A		LOCTITE PE 209989AP A and PE 209990AP B combined										
4	IDH 429357 (Pail)	Resin						5,750			Controlled viscosity and low exotherm (85°C)	
	LOCTITE PE 209990AP B		2:1	100:46.1	4,900	78 (D)	30 min.	High	Clear	—		
	IDH 429358 (Pail)	Hardener						3,250				
LOCTITE EA 210268 A		LOCTITE EA 210268 A and EA 210269 B combined										
5	IDH 529103 (Tote)	Resin						3,500			Controlled viscosity and low exotherm (85°C)	
	LOCTITE EA 210269 B		2:1	100:46.5	3,200	78 (D)	30 min.	High	Clear	—		
	IDH 529104 (Tote)	Hardener						2,500				
LOCTITE EA 9452 A		LOCTITE EA 9452 A and EA 9452 B combined										
6	IDH 2048334 (Drum)	Resin						17,420			Controlled viscosity, medium pot life and 137°C exotherm	
	LOCTITE EA 9452 B		2.14:1	100:39	3,281	80 (D)	3.6 hrs.	High	Amber	KTW, EU 10/2011		
	IDH 2048333 (Drum)	Hardener						154				
LOCTITE EA 9640 A		LOCTITE EA 9640 A and EA 9640 B combined										
7	IDH 1210148 (Drum)	Resin						2,800			Controlled viscosity, medium pot life and 140°C exotherm	
	LOCTITE EA 9640 B		2.36:1	100:35	2,800	80 (D)	5 hrs.	High	Amber	—		
	IDH 1210150 (Drum)	Hardener						2,700				
LOCTITE EA E3346 A		LOCTITE EA E3346 A and EA E3346 B combined										
8	IDH 1294260 (Pail)	Resin						2,500			Controlled viscosity and high elongation (46%)	
	LOCTITE EA E3346 B		1.71:1	100:54	7,000	85 (D)	60 min.	16,324	Purple	—		
	IDH 1294291 (Pail)	Hardener						20,000				

HOLLOW FIBER POTTING

Wet Fibers (> 8% water content)

Dry Fibers (< 8% water content)

Static Process

Centrifugal Process

Highest Temp. and Chemical Resistance > 80°C

High Temp. and Chemical Resistance < 80°C

Highest Chemical and Temp. Resistance (13.5 pH @ 80°C)

Moderate/High Chem. and Temp. Resistance (12.75 pH @ 80°C)

Two-Part Epoxy

Two-Part Polyurethane

Small Fiber Bundles

Lowest Exotherm

Tight Fiber Bundles

Flexible to Reduce Fiber Damage

Higher Chemical Resistance

Lowest Shrinkage

Fast Cure

Two-Part Polyurethane

Two-Part Polyurethane

1

LOCTITE
EA 193316 A/
EA 193317 B

4

LOCTITE PE
209989AP A/
PE 209990
AP B

6

LOCTITE
EA 9452 A/B

8

LOCTITE
EA E3346 A/B

2

LOCTITE
EA E-30CL

5

LOCTITE
EA 210268 A/
EA 210269 B

7

LOCTITE
EA 9640 A/B

3

LOCTITE
EA M-31CL

9

LOCTITE
CR 3510 A/
CR 4300 B

10

LOCTITE
CR 3519 A/
CR 4200 B

11

LOCTITE
CR 3519 A/
CR 4300 B

12

LOCTITE
CR 3528 A/
CR 4200 B

13

LOCTITE
CR 3525 A/
CR 4200 B

See page 19 for information on these products.

LEARN MORE:

This catalog lists the most common products used in each application. Many additional products are available. Not all products are available in all countries. Contact your Henkel representative for assistance.

TWO-PART POLYURETHANE SYSTEMS – Typical Properties

HOLLOW FIBER POTTING												
PRODUCT NO.	TYPE	VOL. MIX RATIO (A:B)	MASS MIX RATIO (A:B)	MIXED VISCOSITY (cPs)	SHORE HARDNESS	GEL TIME (100 G AT 77°F)	CUTTING WINDOW (HRS.)	PROCESS	VISCOSITY (cPs)	COLOR	AGENCY	DESCRIPTION
LOCTITE CR 3510 A		LOCTITE CR 3510 A and CR 4300 B combined										
IDH 973549 (Pail)	Polyol								2,000			
LOCTITE CR 4300 B		2:1	100:60	400	70 (D)	25-35 min.	12	Static (flip in 2-4 hrs.)	55	Cream	KTW	Harder, less moisture-sensitive for wet membranes
IDH 1126373 (Can)	Iso											
IDH 1126199 (Can)												
LOCTITE CR 3519 A		LOCTITE CR 3519 A and CR 4200 B combined										
IDH 1337628 (Drum)	Polyol								3,200			
LOCTITE CR 4200 B		1.45:1	100:80	2,000	60-70 (D)	30-40 min.	12	Static (flip in 2-4 hrs.)	1,500	Cream	KTW	Flexible, less shrinkage, less moisture-sensitive for wet membranes
IDH 1454191 (Pail)	Iso											
LOCTITE CR 3519 A		LOCTITE CR 3519 A and CR 4300 B combined										
IDH 1337628 (Drum)	Polyol								3,200			
LOCTITE CR 4300 B		2:1	100:59	400	70 (D)	25-35 min.	12	Static (flip in 2-4 hrs.)	55	Cream	KTW	Fast cure speeds, harder, less moisture-sensitive for wet membranes
IDH 1126373 (Can)	Iso											
IDH 1126199 (Can)												
LOCTITE CR 3528 A		LOCTITE CR 3528 A and CR 4200 B combined										
IDH 1337629 (Drum)	Polyol								1,300			
LOCTITE CR 4200 B		1.55:1	100:82	1,300	70-80 (D)	15 -20 min.	30 min. (@ 60°C)	Centrifugal		Amber	KTW	For dry membrane, higher chemical and temp. resistance (harder and higher exotherm)
IDH 1454191 (Pail)	Iso								1,500			
LOCTITE CR 3525 A		LOCTITE CR 3525 A and CR 4200 B combined										
IDH 1335594 (Pail)	Polyol								1,300			
LOCTITE CR 4200 B		1.67:1	100:75	1,400	63 (D)	25 min.	30 min. (@ 60°C)	Centrifugal		Amber	KTW	For dry membrane
IDH 1454191 (Pail)	Iso								1,500			

FIBER BUNDLING ADHESIVES

PRODUCT NO.	TYPE	APPLICATION	ASSEMBLY TIME	OPEN TIME	SOFTENING POINT (°C) / (°F)	VISCOSITY (cPs)		COLOR	AGENCY	DESCRIPTION
						AT 325°F	AT 350°F			
TECHNOMELT AS 4208	PO Hot Melt	Fiber Bundling	Moderate	Moderate 40-60 sec.	100 / 212	17,000	12,000	White	FDA 175.105/ NSF* & KTW	For fast assembly process
IDH 930825 (Box)										
TEROSON MS 939 BK	MS Polymer	Pre-casting Fibers (close fibers)	Long	4-10 min.	N/A	N/A	N/A	Black	—	Highly flexible non-sagging paste
IDH 504842 (Drum)										

*Filters manufactured with these products have been NSF approved. Note: Typically entire filter assemblies must be submitted and approved by NSF.

Pleated Filters

Pool and spa applications

Fast processing and curing speeds,
excellent chemical resistance



End Cap Replacement

The end cap helps to provide structural support and increase filter cartridge durability. It must also withstand chlorine degradation. Henkel's LOCTITE adhesives for end cap replacement offer the following benefits:

- **Fast cure speeds**
- **Controlled viscosity** to limit wicking
- **Clean demolding lettering** using LOCTITE FREKOTE Exitt
- **NSF approval**
- **Chemical resistance**

Pleat Separation and First Pleat/Last Pleat

Pleats are key to the filter's performance. Clearly defined and easily separated pleats allow for increased water flow and quality filtration. Our TECHNOMELT adhesives for pleat applications offer a number of benefits:

- **Fast processing speeds**
- **Low wicking**
- **Excellent chemical resistance**
- **Industry approvals:** FDA, KTW, NSF and EU Food

LEARN MORE:

This catalog lists the most common products used in each application. Many additional products are available. Not all products are available in all countries. Contact your Henkel representative for assistance.



End cap replacement



Pleat separation



First pleat/last pleat

TWO-PART POLYURETHANE SYSTEMS – Typical Properties

END CAP MOLDING												
PRODUCT NO.	TYPE	VOL. MIX RATIO (A:B)	MASS MIX RATIO (A:B)	MIXED VISCOSITY (cPs)	SHORE HARDNESS	GEL TIME (100 G AT 77°F)	TENSILE STRENGTH (PSI)	TEAR STRENGTH (LBS./IN.)	VISCOSITY (cPs)	COLOR	AGENCY	DESCRIPTION
LOCTITE UK 180 A		LOCTITE UK 180 A and UK 180 B combined										
IDH 1219066 (Drum)	Polyol								1,500	Blue		Self-leveling, fast de-molding, low wicking and excellent chemical resistance
LOCTITE UK 180 B		1.34:1	1.11:1	1,200	85-95 (A)	2 min.	2,400	140			NSF*	
IDH 1219067 (Drum)	Iso								1,100	Amber		

MOLD RELEASE – Typical Properties

END CAP DE-MOLDING						
PRODUCT NO.	TYPE	FINISH	SUBSTRATES RELEASED	AGENCY	DESCRIPTION	
LOCTITE FREKOTE EXITT						
IDH 398492 (Aerosol Can)	Sacrificial	High Gloss	Thermoset Polyurethanes and Hot Melts	—	Silicone mold release agents offer superb release properties, choice of finish, and excellent part detail to meet your specific molding requirements	
LOCTITE FREKOTE LIFFT						
IDH 420456 (Gallon)	Sacrificial	Semi-Gloss		—		

HOT MELT – Typical Properties

FIRST PLEAT/LAST PLEAT PLEAT SEPARATION TECHNOLOGY									
PRODUCT NO.	TYPE	ASSEMBLY TIME	OPEN TIME (SEC.)	SOFTENING POINT (°C) / (°F)	VISCOSITY (cPs)		COLOR	AGENCY	DESCRIPTION
					AT 325°F	AT 350°F			
TECHNOMELT AS 4208									
IDH 930825 (Box)	PO	Moderate	Moderate (40-60)	100 / 212	17,000	12,000	White	FDA 175.105/NSF* and KTW	For highest bond strengths to olefins
TECHNOMELT AS 947C									
IDH 1217927 (Box)	EVA	Fast	Long (60-80)	78 / 172	7,400	4,500	White	FDA 175.105/NSF*	Long open times for proper assembly process
TECHNOMELT AS 232									
IDH 420348 (Box)	EVA	Moderate	Long (60-80)	87 / 189	17,000	11,000	White	FDA 175.105/NSF*	Long open times for proper assembly process

*Filters manufactured with these products have been NSF approved. Note: Typically entire filter assemblies must be submitted and approved by NSF.

MEDICAL FILTRATION



MARKETS



Ensuring Reliable Performance for Medical Filtration

Hollow Fiber Potting

Demand for medical filtration will continue to increase due to aging populations and improved access to medical care, especially in developing countries. Henkel's experience in the medical device industry can assist medical filter manufacturers by developing customized solutions and recommending optimized processes and products to meet their specific requirements.

Customized Products for Medical Filters

Controlled trim times, defined viscosity,
and ISO 10993 approved



Dialyzers and Oxygenators

Hollow fiber potting

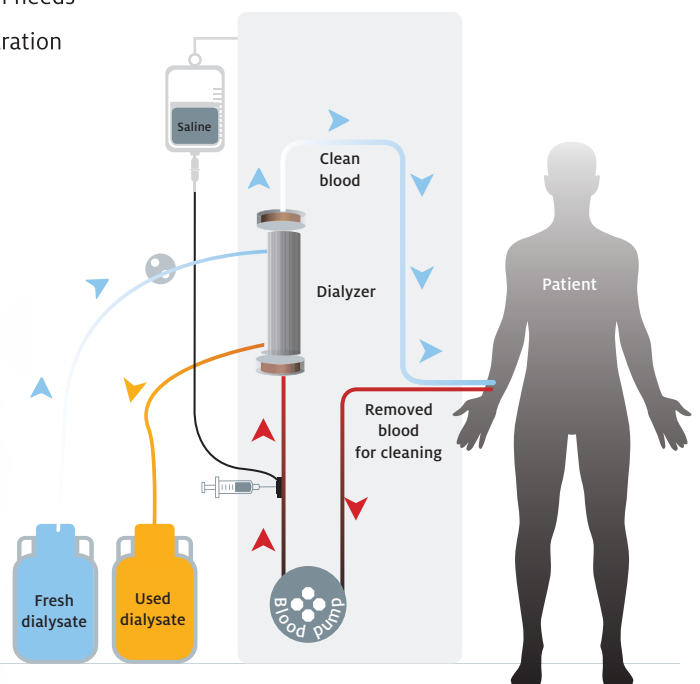
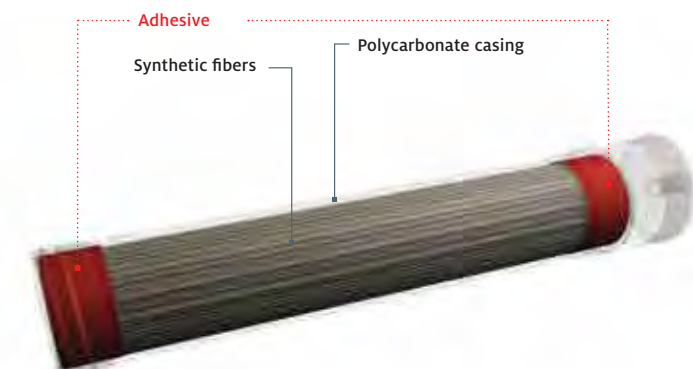
Henkel's two-part polyurethane adhesives for hollow fiber filtration offer flexibility and customized options for medical filter manufacturers. Henkel has the expertise to customize our products for your specific application needs.

Cutting the adhesive to open the fibers is critical to producing a good dialyzer. The adhesive needs to be cut within the "cutting window" to allow the adhesive to build enough hardness to avoid delamination from the housing, but not gain too much hardness so that a smooth surface can be obtained.

Henkel's customized options ensure the proper use of our adhesives so that customers can consistently produce dialyzers with an efficient and optimized process.

Benefits:

- **Customized products** for specific application needs
- **Low viscosity** for optimal fiber bundle penetration
- **High adhesion** to plastic housings
- **Process optimization** recommendations
- **Industry approvals:** ISO 10993



MEDICAL DIALYZERS

Fast Trim Times

LOCTITE
CR 5103 A / 4100 B

Medium Trim Times

LOCTITE
CR 5103 A / 4620 B

Highest Flexibility with Trim Times

LOCTITE
CR 3502 A / CR 4100 B

TWO-PART POLYURETHANE SYSTEMS – Typical Properties

HOLLOW FIBER POTTING												
PRODUCT NO.	TYPE	VISCOSITY (cPs)	VOL. MIX RATIO (A:B)	MASS MIX RATIO (A:B)	MIXED VISCOSITY (cPs)	SHORE HARDNESS	GEL TIME (100 G) @ 30°C	CUTTING WINDOW (HRS.)	PROCESS	COLOR	AGENCY	DESCRIPTION
LOCTITE CR 5103 A			LOCTITE CR 5103 A and CR 4100 B combined									
IDH 1126372 (Drum)	Poly	1,200										Fast trim times, controlled viscosity (mixed static or dynamically)
LOCTITE CR 4100 B			1.75:1	100:72	1,000	63 (D)	5-8 min.	1-2	Dynamic	Yellow	ISO 10993	
IDH 1126194 (Drum)	Iso	1,100										
LOCTITE CR 5103 A			LOCTITE CR 5103 A and CR 4620 B combined									
IDH 1126372 (Drum)	Poly	1,200										Fast trim times, controlled viscosity (mixed static or dynamically)
LOCTITE CR 4620 B			1.75:1	100:72	1,100	63 (D)	7-9.5 min.	4-6	Dynamic	Yellow	ISO 10993	
IDH 1572702 (Drum)	Iso	1,400										
LOCTITE CR 3502 A			LOCTITE CR 3502 A and CR 4100 B combined									
IDH 1293634 (Drum)	Poly	1,200										Long cutting window, controlled viscosity (mixed static or dynamically)
LOCTITE CR 4100 B			2.03:1	100:62	1,000	92 (A)	5-8 min.	1-72	Dynamic	Yellow	ISO 10993	
IDH 1126194 (Drum)	Iso	1,100										

LEARN MORE:

This catalog lists the most common products used in each application. Many additional products are available. Not all products are available in all countries. Contact your Henkel representative for assistance.



Henkel Partnership

Services to help you succeed

In addition to offering the **broadest product portfolio** in the adhesives industry, Henkel provides an array of services to help our filtration customers **optimize** their manufacturing processes, **improve** efficiency and **reduce** overall costs. The following services are available worldwide.



PROCESS OPTIMIZATION

Henkel has decades of success optimizing manufacturing processes. We can analyze your complete manufacturing process and provide tailor-made recommendations for reducing production cycle times and rejection rates, thereby lowering your overall costs and increasing your productivity.



LAB TESTING

Henkel's testing capabilities can provide complete data, relevant and applicable to your process, on our product recommendations. Whether you want to analyze a single component of your production process or review the complete system, our labs can provide all the data you need.



CUSTOMER TRAINING

Henkel offers an array of customized training programs to help customers learn the details of our product technologies and how to apply them effectively. We can also train you to use our custom-designed equipment efficiently. Our Technology Days provide additional training and demonstrations of our newest innovations.



VALUE CALCULATORS

Using our Value Calculators, our adhesives specialists can accurately analyze the total costs of your adhesive processes and determine your savings potential. Simply arrange an appointment with our specialists, and they will visit your production facilities to conduct an in-depth analysis.



ANALYTICAL SERVICES

Henkel provides comprehensive analysis of all steps in your manufacturing process using our own technical staff and industry experts. We will identify problem points on the production line and recommend improvements to the manufacturing process, along with Henkel products and equipment that can help improve results. These services can also include equipment tear-downs, surface analysis and testing.

Index

PRODUCT NAME	PRODUCT NUMBER	PAGE NUMBER
LOCTITE CR 3502 A Poly (Drum)	IDH 1293634	27
LOCTITE CR 3510 A Poly (Pail)	IDH 973549	21
LOCTITE CR 3519 A Poly (Drum)	IDH 1337628	21
LOCTITE CR 3525 A Poly (Pail)	IDH 1335594	21
LOCTITE CR 3528 A Poly (Drum)	IDH 1337629	21
LOCTITE CR 4100 B Iso (Drum)	IDH 1126194	27
LOCTITE CR 4200 B Iso (Pail)	IDH 1454191	21
LOCTITE CR 4300 B Iso (Can)	IDH 1126373	21
LOCTITE CR 4300 B Iso (Can)	IDH 1126199	21
LOCTITE CR 4620 B Iso (Drum)	IDH 1572702	27
LOCTITE CR 5103 A Poly (Drum)	IDH 1126372	27
LOCTITE EA 1623986 A Resin (Drum)	IDH 1638452	14
LOCTITE EA 1623986 B Hard (Drum)	IDH 1638450	14
LOCTITE EA 193316 A Resin (Can)	IDH 1094638	19
LOCTITE EA 193317 B Hard (Can)	IDH 1094639	19
LOCTITE EA 210268 A Resin (Tote)	IDH 529103	19
LOCTITE EA 210269 B Hard (Tote)	IDH 529104	19
LOCTITE EA 9452 A Resin (Drum)	IDH 2048334	19
LOCTITE EA 9452 B Hard (Drum)	IDH 2048333	19
LOCTITE EA 9640 A Resin (Drum)	IDH 1210148	19
LOCTITE EA 9640 B Hard (Drum)	IDH 1210150	19
LOCTITE EA E-30CL (400 ml Cart)	IDH 237118	19
LOCTITE EA E-30CL (50 ml Cart)	IDH 237116	19
LOCTITE EA E-30CL A Resin (Pail)	IDH 233992	19
LOCTITE EA E-30CL B Hard (Pail)	IDH 233994	19
LOCTITE EA E3346 A Resin (Pail)	IDH 1294260	19
LOCTITE EA E3346 B Hard (Pail)	IDH 1294291	19
LOCTITE EA M-31CL (200 ml Cart)	IDH 235023	19
LOCTITE EA M-31CL (50 ml Cart)	IDH 235021	19
LOCTITE FREKOTE EXITT (Aerosol Can)	IDH 398492	23
LOCTITE FREKOTE LIFFT (Gallon)	IDH 420456	23
LOCTITE PE 209989AP A Resin (Pail)	IDH 429357	19
LOCTITE PE 209990AP B Hard (Pail)	IDH 429358	19
LOCTITE UK 178 A Poly (Tote)	IDH 1219060	13
LOCTITE UK 178 A Poly (Pail)	IDH 1579616	13
LOCTITE UK 178 A Poly (Drum)	IDH 1219058	13
LOCTITE UK 178 B Iso (Pail)	IDH 1579615	13
LOCTITE UK 178 B Iso (Drum)	IDH 1219061	13
LOCTITE UK 178 B Iso (Tote)	IDH 1219063	13
LOCTITE UK 180 A Poly (Drum)	IDH 1219066	23
LOCTITE UK 180 B Iso (Drum)	IDH 1219067	23
LOCTITE UK 5046 B Iso (Drum)	NA	13
LOCTITE UK 5046 B Iso (Pail)	NA	13
LOCTITE UK 5048 B Iso (Pail)	IDH 2008347	13
LOCTITE UK 5048 B Iso (Drum)	IDH 2008348	13
LOCTITE UK 5049 B Iso (Pail)	IDH 2008345	13
LOCTITE UK 5049 B Iso (Drum)	IDH 2008346	13
LOCTITE UK 8046 A Poly (Drum)	NA	13
LOCTITE UK 8046 A Poly (Pail)	NA	13
LOCTITE UK 8048 A Poly (Pail)	IDH 2008995	13
LOCTITE UK 8048 A Poly (Drum)	IDH 2008997	13
LOCTITE UK 8049 A Poly (Pail)	IDH 2008976	13
LOCTITE UK 8049 A Poly (Drum)	IDH 2008994	13
TECHNOMELT AS 232 (Box)	IDH 420348	15, 23
TECHNOMELT AS 2787 (Box)	IDH 1469016	15
TECHNOMELT AS 4208 (Box)	IDH 930825	15, 21, 23
TECHNOMELT AS 4222 (Box)	IDH 266079	15
TECHNOMELT AS 947C (Box)	IDH 1217927	15, 23
TEROSON MS 939 BK (Drum)	IDH 504842	21

For other innovative processing solutions to
speed up your production line
contact your Henkel representative
or visit : www.henkel-adhesives.com/in



LOCTITE®
BONDERITE®
TECHNOMELT®
TEROSON®
AQUENCE®

Henkel Adhesives Technologies India Private Limited

Mumbai

Corporate Office

L & T Seawoods, Grand Central,
401, B Wing, 4th Floor, Tower 1,
Seawoods, Navi Mumbai - 400 706,
Maharashtra, India.
Phone : +91 22 7130 1300

Chennai

Arunodayam, No. 14 & 16,
Raman Street, North Boag Road,
T. Nagar, Chennai - 600 017,
Tamil Nadu, India.
Phone : +91 44 7199 7000

Pune

Survey No. 234, 235 and 245,
India Land Global Industrial Park,
Phase 1, Hinjewadi, Pune - 411 057,
Maharashtra, India.
Phone : +91 20 7199 7000

Delhi

74, Industrial Corporation,
Mehrauli Gurgaon road,
Gurgaon - 122 001,
Haryana, India.
Phone : +91 124 509 7000

Factory

D3/D4, MIDC Industrial Estate,
Jejuri, Purandhar, Pune - 412 303,
Maharashtra, India.
Phone : +91 2115 718 000

www.henkel.in

www.henkel-adhesives.com/in

www.linkedin.com/company/henkel-adhesives