

In the Beginning...

Zatkoff Seals & Packings was founded by Roger Zatkoff in 1959. Roger began supplying products to manufacturing companies located near Detroit and Toledo. His philosophy included exceeding client expectations with hard work and high-quality products. This customer-focused attitude paid off - his small business attracted many new clients. The personal approach of a family-owned business is practiced daily in the values, ethics, and leadership of all Zatkoff Seals & Packings employees. We uphold Roger's original vision; hard work and quality products have grown our business beyond the borders of the Midwest. Zatkoff Seals & Packings now employs over 150 people in eight locations across three states. We support a wide variety of customers throughout North America, Europe and Asia.

Zatkoff Seals & Packings strives to exceed client expectations in all aspects of our business. Our dedicated employee teams provide today's customers with superior products, exceptional customer service, on-time delivery, and competitive pricing.



Roger Zatkoff



www.zatkoff.com

E-News Highlights

Zatkoff History

Zatkoff 2006 Product Catalog

Permabond® Product Cross Reference

Permabond® Anaerobic Adhesives & Sealants

Permabond® Cyanoacrylate Adhesives

Dare To Compare



Multiple Seal Solutions **ONE** Technical Resource

Our **FREE** Zatkoff 2006 Catalog is available today!
In Print, CD-ROM or at www.zatkoff.com

You'll find the Zatkoff Seals & Packings sealing systems, engineering and materials guide plays an important role in selecting seals & materials for the safe, reliable operation of pneumatic and hydraulic equipment.



- Adhesives
- Boots/Bellows
- Braided Packings
- Coatings
- Extrusions

- Lathe Cut
- Rod Wipers / Scrapers
- Linear Bearing System
- Way Protector
- Way Wiper

- Metal Seals & Gaskets
- Cast Iron Piston Rings
- Molded Rubber
- Sheet and Gasket Materials
- Molded Packings & Seals

- Oil Seals
- O-Rings
- PTFE Seals
- PTFE Spring Loaded Rod & Piston, Face & Rotary Seals
- Quad-Rings®
- Wear Rings

Loctite® Grade	Comparable Permabond Product	Loctite® Grade	Comparable Permabond Product
220	LM113	4471	795
222	LM113	4500	2011
222MS	LM113	4501	791
242	MM115	4851	Product recommendations will be made to suit application requirements.
243	MM115	4861	Product recommendations will be made to suit application requirements.
246	Product recommendations will be made to suit application requirements.	504	HH190
262	HM118	509	LH197
266	HH120	510	MH199
271	HM129 (or HM128)	515	HH190
272	HH131	518	MH196
277	HH120	5182	MH196
290	HL126	549	MH199
294	Product recommendations will be made to suit application requirements.	568	Product recommendations will be made to suit application requirements.
425	Product recommendations will be made to suit application requirements.	573	LH197
2432	Product recommendations will be made to suit application requirements.	574	MH196
2440	MM115	5127	LH197
2760	HM162	5205	MH196
380	737	542	LM012
382	799	554	HM118
401	792	564	LH050
403	947	565	LH050
406	791	567	LH150
408	940	569	LM012
409	2011	571	LM012
410	737	572	LH054
411	799	577	MH052
412	101	579	Product recommendations will be made to suit application requirements.
414	102	580	Product recommendations will be made to suit application requirements.
415	170	592	LH050
416	268	5772	Contact Permabond
417	Product recommendations will be made to suit application requirements.	603	HL138
420	101	609	HL138
422	240	620	HM165
426	738	635	HM161
430	910	638	HM161
444	108	640	HM162
454	2011	641	Product recommendations will be made to suit application requirements.
455	Product recommendations will be made to suit application requirements.	648	HM161
460	941	660	HH167
480	Product recommendations will be made to suit application requirements.	661	Product recommendations will be made to suit application requirements.
493	910FS	675	HL138
495	105	680	HM161
496	910	7471	ASC10
498	Product recommendations will be made to suit application requirements.	7113	QFS16
499	Product recommendations will be made to suit application requirements.	7239	Permabond Polyolefin Primer (POP)
4203	801	712	QFS16
4204	802 (NB: Viscosity is lower)	7113	QFS16
4210	737 (NB: Viscosity is higher)	7452	QFS16
4211	737	7453	QFS16
4212	738	7649	ASC10
		770	Permabond Polyolefin Primer (POP)

Many Permabond's adhesives are proprietary formulations with unique performance criteria that do not exactly correlate with competitive products. For most of their intended applications, the Permabond products listed above will perform the same as or better than the competitive products listed opposite the Permabond products. Users should thoroughly test all adhesive products for their intended applications before actual use.

Permabond® Engineering Adhesives

Cyanoacrylate Adhesives & Sealants Selector Guide

Grade	Chemistry	Description	Appearance	Viscosity @ 25°C cP	Max. Gap Fill		Shear Strength* @ 25°C		Set Time, Steel @ 25°C secs	Temperature Range		Approvals
					in.	mm	psi	N/mm ²		Min. °F (°C)	Max. °F (°C)	
101	Ethyl	General purpose, wicking type plastic bonding	Clear	2	0.002	0.05	3,000	21	5	-65 (-54)	180 (82)	Type II, Class 1
102	Ethyl	General purpose, plastic bonding	Clear	80	0.006	0.15	3,100	21	10	-65 (-54)	180 (82)	Type II, Class 2
105	Ethyl	General purpose, elastomer bonding	Clear	40	0.004	0.10	2,900	20	10	-65 (-54)	180 (82)	Type II, Class 1
108	Ethyl	Intermediate gap fill, plastic bonding	Clear	500	0.008	0.20	3,000	21	10	-65 (-54)	180 (82)	N/A
170	Methyl	Metal bonding, maximum gap fill	Clear	1,500	0.015	0.38	3,500	24	15	-65 (-54)	195 (90)	Type I, Class 3
268	Ethyl	Fast curing, maximum gap fill	Clear	1,800	0.017	0.43	3,000	21	10	-65 (-54)	180 (82)	Type II, Class 3
737	Ethyl	Impact resistant, gap fill	Black	3,000	0.020	0.51	3,100	21	15	-65 (-54)	250 (120)	N/A
790	Ethyl	Surface insensitive, extremely fast curing, wicking type	Clear	2	0.002	0.05	2,900	20	3	-65 (-54)	180 (82)	Type II, Class 1
791	Ethyl	Surface insensitive, extremely fast curing, close fitting parts	Clear	40	0.004	0.10	2,900	20	3	-65 (-54)	180 (82)	Type II, Class 1
792	Ethyl	Surface insensitive, extremely fast curing, close fitting parts	Clear	80	0.006	0.15	2,900	20	3	-65 (-54)	180 (82)	Type II, Class 2 ¹
799	Ethyl	Surface insensitive, extremely fast curing, maximum gap fill	Clear	5,000	0.020	0.51	3,000	21	8	-65 (-54)	180 (82)	Type II, Class 4
801	Ethyl	High temp. resistant to 130°C, wicking type	Clear	35	0.003	0.08	3,000	21	10	-65 (-54)	270 (130)	N/A
802	Ethyl	High temp. resistant to 160°C	Clear	100	0.006	0.15	3,000	21	10	-65 (-54)	320 (160)	N/A
820	Ethyl	High temp. resistant to 200°C	Clear	100	0.006	0.15	3,000	21	10	-65 (-54)	390 (200)	N/A
2011	Ethyl	Thixotropic gel, non-sag, surface insensitive	Clear	Gel	0.020	0.51	3,200	22	10	-65 (-54)	180 (82)	N/A
910	Methyl	General purpose, metal bonding	Clear	80	0.006	0.15	3,700	26	10	-65 (-54)	195 (90)	Type I, Class 2 ¹
920	Allyl	General purpose, high temp. resistant to 250°C	Clear	80	0.006	0.15	3,000	21	10	-65 (-54)	482 (250 ^{**})	Type V, Class 2 ¹
922	Allyl	Maximum gap fill, high temp. resistant to 250°C	Clear	1,600	0.017	0.43	3,000	21	10	-65 (-54)	482 (250 ^{**})	Type V, Class 3 ¹
930	Methoxypropyl	Low odor, non-fogging or frosting	Clear	3	0.002	0.05	2,700	19	8	-65 (-54)	167 (75)	N/A
931	Methoxypropyl	Low odor, non-fogging or frosting	Clear	40	0.004	0.10	2,700	19	8	-65 (-54)	167 (75)	N/A
932	Methoxypropyl	Low odor, non-fogging or frosting	Clear	100	0.006	0.15	2,700	19	8	-65 (-54)	167 (75)	N/A
940	Alkoxyethyl	Low odor and low bloom, wicking type	Clear	7	0.002	0.05	2,600	18	10	-65 (-54)	180 (82)	N/A
941	Alkoxyethyl	Low odor and low bloom, close fitting parts	Clear	30	0.003	0.08	2,600	18	10	-65 (-54)	180 (82)	N/A
943	Alkoxyethyl	Low odor and non-blooming, general purpose	Clear	100	0.006	0.15	2,600	18	10	-65 (-54)	180 (82)	N/A
947	Alkoxyethyl	Low odor and low bloom, gap fill	Clear	1,200	0.010	0.25	2,600	18	25	-65 (-54)	180 (82)	N/A
POP	Solvent	Polyolefin primer	Clear	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QFS16	Solvent	Cyanoacrylate accelerator	Clear	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

For Technical Data Sheets contact your nearest Zatkoff location. **Sterilization:** Cyanoacrylates generally withstand ETO, gamma, and e-beam sterilization. Autoclaving is not recommended. Chemical sterilization in specific applications may be acceptable. *Grit based steel **Secondary curing mechanism required **Approvals:** †Meets MIL-A-46050C and MIL-AA-3097

Non-Warranty: The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers, before using any product in full scale production, make their own test to determine their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose, under their own operating conditions. The products discussed herein are sold without any warranty, expressed or implied. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission inducement, or recommendations to practice any invention covered by any patent without authority from the owner of the patent. Not responsible for typographical errors.

Permabond® Engineering Adhesives

Anaerobic Adhesives Selector Guide

Product	Application	Color	Viscosity @ 25°C cP	Max. Gap Fill		Shear Strength Steel @ 25°C		Torque, M10 Steel nuts & bolts				Fixture Time, Steel @ 25°C mins	Temperature Range		Approvals ^{1,2} *MIL-S-46163A **MIL-S-22473E ***MIL-R-46082B
				in.	mm	psi	N/mm ²	Breakaway		Prevail			Min. °F (°C)	Max. °F (°C)	
								in•lb	N•m	in•lb	N•m				
LM113 Removable, low strength, for small diameter fasteners	Threadlocker	Purple	1,200	0.006	0.15	750	5	80	9	40	5	15	-65 (-54)	300 (150)	TYPE II Grade M*
MM115 Removable, general purpose	Threadlocker	Blue	1,300	0.006	0.15	1,500	10	140	16	60	7	10	-65 (-54)	300 (150)	CVV** Type II Grade N*
MM115 Pure Removable, general purpose NSF/ANSI 61 Certified	Threadlocker	Colorless	1,300	0.006	0.15	1,500	10	140	16	60	7	10	-65 (-54)	300 (150)	NSF/ANSI 61
HM118 Removable, high strength	Threadlocker	Red	1,800	0.008	0.20	2,500	17	200	23	280	32	10	-65 (-54)	300 (150)	Type II Grade O*
HH120 Permanent, max. strength, for lg. diameter bolts	Threadlocker	Red	7,000	0.010	0.25	2,500	17	275	31	300	34	10	-65 (-54)	300 (150)	AVV** Type I Grade L*
HL126 Wicking grade for post assembly	Threadlocker	Green	12	0.005	0.13	1,500	10	125	14	300	34	8	-65 (-54)	300 (150)	AA** Type III Grade R*
HM128 Permanent, general purpose	Threadlocker	Red	500	0.006	0.15	2,500	17	275	31	350	40	5	-65 (-54)	300 (150)	Type I Grade K*
HM129 Permanent, high strength, for up to 1" diameter fasteners	Threadlocker	Red	500	0.006	0.15	2,500	17	280	32	500	56	10	-65 (-54)	300 (150)	
HH131 Permanent, high temp resistant, high strength, up to 1.5" diameter fasteners	Threadlocker	Red	10,000	0.012	0.30	2,500	17	240	27	480	54	15	-65 (-54)	445 (230)	
LM012 No fillers, hydraulic sealing	Threadsealer	Brown	2,000	0.008	0.20	750	5	25	3	15	2	30	-65 (-54)	350 (177)	HVV**
LH050 General purpose pipe sealant	Threadsealer	White	250,000	0.020	0.51	1,000	7	35	4	25	3	120	-65 (-54)	350 (177)	UL Listed
LH050 Pure General purpose, NSF/ANSI 61 Certified	Threadsealer	White	250,000	0.020	0.51	1,000	7	35	4	25	3	120	-65 (-54)	350 (177)	NSF/ANSI 61
LH051 Automatic dispensing	Threadsealer	White	250,000	0.020	0.51	1,000	7	35	4	25	3	120	-65 (-54)	350 (177)	
MH052 Med. strength for coarse threads	Threadsealer	Yellow	50,000	0.020	0.51	1,400	10	180	20	100	11	15	-65 (-54)	300 (150)	BAM
LH054 Easy to remove, low strength	Threadsealer	White	260,000	0.020	0.51	1,000	7	25	3	20	2	120	-65 (-54)	350 (177)	
LH150 Stainless steel pipe sealant	Threadsealer	White	260,000	0.020	0.51	1,000	7	35	4	25	3	120	-65 (-54)	350 (177)	UL Listed
HH190 General purpose flange sealant	Gasketmaker	Purple	600,000	0.025	0.64	900	6	N/A		N/A		15	-65 (-54)	250 (121)	
MH196 Fast curing, high temp. resistant	Gasketmaker	Red	150,000	0.020	0.51	1,500	10	N/A		N/A		15	-65 (-54)	390 (200)	
LH197 Flexible, easy to remove	Gasketmaker	Green	37,000	0.012	0.30	750	5	N/A		N/A		20	-65 (-54)	300 (150)	
MH199 Highly thixotropic, high temp. resistant	Gasketmaker	Red	185,000	0.020	0.51	1,100	8	N/A		N/A		20	-65 (-54)	390 (200)	

Permabond® Engineering Adhesives

Anaerobic Adhesives Selector Guide (continued)

Product	Application	Color	Viscosity @ 25°C cP	Max. Gap Fill		Shear Strength Steel @ 25°C		Torque, M10 Steel nuts & bolts				Fixture Time, Steel @ 25°C mins	Temperature Range		Approvals ^{1,2} *MIL-S-46163A **MIL-S-22473E ***MIL-R-46082B
				in.	mm	psi	N/mm ²	Breakaway		Prevail			Min. °F (°C)	Max. °F (°C)	
								in•lb	N•m	in•lb	N•m				
HH040 General Purpose, maximum gap fill	Retaining Compound	Green	5,000	0.010	0.25	2,000	14	200	23	300	34	15	-65 (-54)	300 (150)	
HH040 Pure General Purpose, NSF/ANSI 61 Certified	Retaining Compound	Colorless	5,000	0.010	0.25	2,000	14	200	23	300	34	15	-65 (-54)	300 (150)	NSF / ANSI 61
HL138 General Purpose, press fit	Retaining Compound	Green	150	0.005	0.13	2,300	16	180	20	320	36	10	-65 (-54)	300 (150)	Type I***
HM160 General Purpose, slip fit	Retaining Compound	Green	600	0.008	0.20	3,000	21	250	28	400	45	10	-65 (-54)	350 (177)	Type II***
HM161 Gap fill, slip fit	Retaining Compound	Green	2,000	0.010	0.25	3,500	24	275	31	400	45	10	-65 (-54)	350 (177)	Type III***
HM162 Fast curing, high temp. resistant	Retaining Compound	Green	800	0.008	0.20	4,300	30	280	32	550	62	5	-65 (-54)	390 (200)	
HM165 Maximum gap fill, high temp., resistant	Retaining Compound	Green	10,000	0.012	0.30	3,800	26	250	28	480	54	15	-65 (-54)	445 (230)	
HH167 Maximum gap fill, metal repair	Retaining Compound	Silver	500,000	0.012	0.30	4,700	32	280	32	400	45	15	-65 (-54)	300 (150)	
ASC10 Activator for all anaerobic grades	Activator	Green	2	N/A		N/A		N/A				N/A	N/A		Primer Grade N & T** Primer Grade F*

For Technical Data Sheets contact your nearest Zatkoff location

¹ ASTM D 5363-97 supersedes the following Military specifications: S-22473E, S-46163A, and R-46082B. Please consult Permabond for further information, if required.

² All Military Specifications/Approvals listed are for existing, if required.

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