Technical data sheet

Product:	246
Manufacturer:	HENKEL KGAA
Product group:	KLEBSTOFF
Article group:	ACRYLAT
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LOCTITE® AA F246™

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Technical Data Sheet

LOCTITE® AA F246™

Known as LOCTITE® F246™
December 2016

PRODUCT DESCRIPTION

LOCTITE® AA F246™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Modified methacrylate ester
Appearance (uncured)	Straw yellow to brown liquid[LMS]
Components	Two components - requires no mixing
Viscosity	High
Cure	With activator
Application	Bonding

LOCTITE® AA F246™ is a two component toughened acrylic adhesive system for high strength structural bonding. It cures rapidly at room temperature on assembly of the joint.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C 1.0

Viscosity, Brookfield - RVT, 25 °C, Pa·s:
Spindle 6, speed 10 rpm 17.0 to 35.0[LMS]

Thermal Stability, 82°C, hours ≥3[LMS]
Flash Point - See SDS

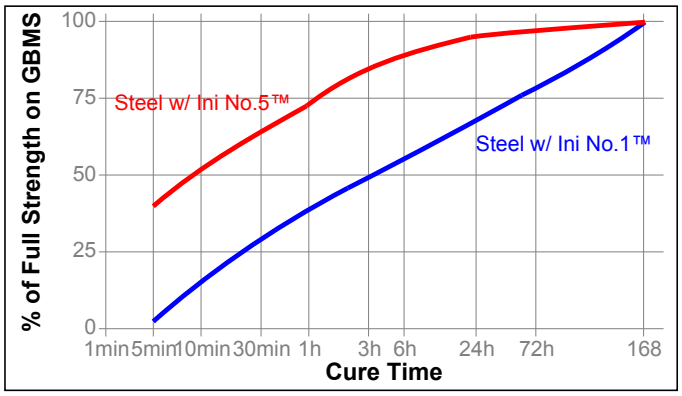
TYPICAL CURING PERFORMANCE

Fixture Time

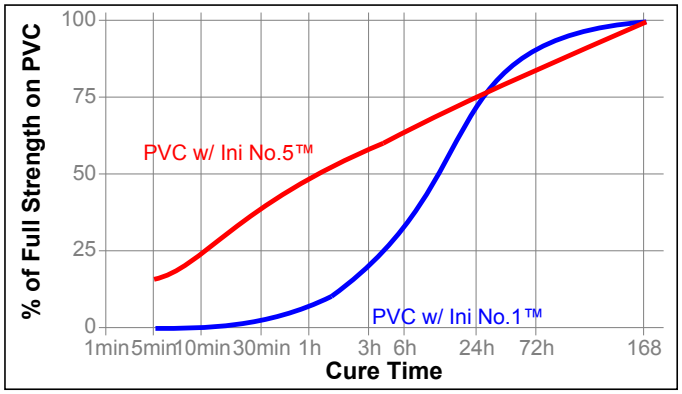
Fixture time is defined as the time to develop a shear strength of 0.1 N/mm² .:
Fixture Time, ISO 4587, minutes:
Grit Blasted Mild Steel, activated with Activator Ini No.5™ ≤5[LMS]
PVC, activated with Activator Ini No.5™ ≤5

Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the shear strength developed with time on grit blasted mild steel compared to different materials and tested according to ISO 4587.
Activator Ini No.1™ or Ini No.5™ applied to one surface

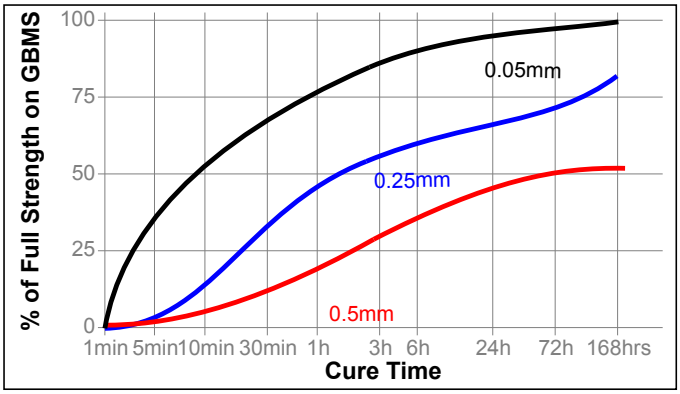


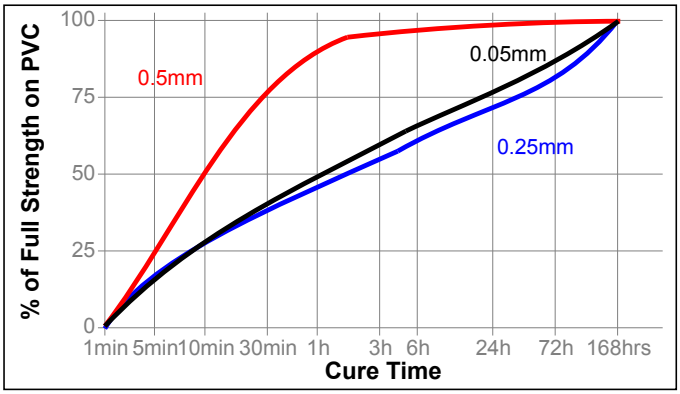
The graph below shows the shear strength developed with time on PVC lap shears and tested according to ISO 4587
Activator Ini No.1™ or Ini No.5™ applied to one surface



Cure Speed vs. Bond Gap

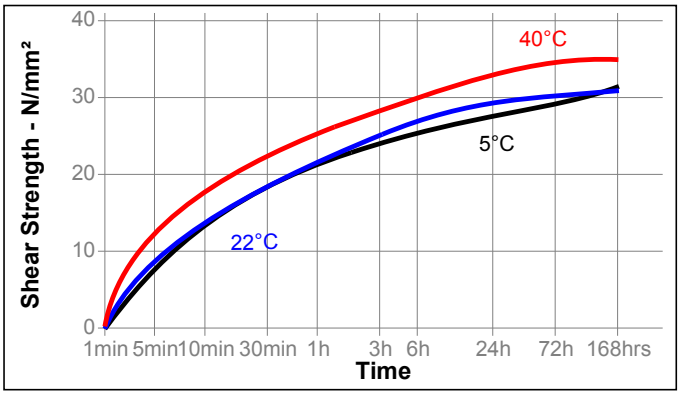
The rate of cure will depend on the bondline gap. The following graph shows the shear strength developed with time on grit blasted mild steel and PVC lap shears at different controlled gaps and tested according to ISO 4587. (Activator Ini No.5™ applied to one surface).





Cure Speed vs. Temperature

The graph below shows the shear strength developed with time on grit blasted steel lap shears activated with LOCTITE® Activator Ini No. 5™ at different temperatures and tested according to ISO 4587



TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

After 168 hours @ 22 °C, Activator Ini No.5™ on 1 side

Lap Shear Strength, ISO 4587:

Grit Blasted Mild Steel (GBMS)	N/mm²	33
	(psi)	(4,760)
Stainless steel	N/mm²	16
	(psi)	(2,250)
Aluminum	N/mm²	19
	(psi)	(2,780)
ABS	N/mm²	6.1
	(psi)	(880)
PVC	N/mm²	11
	(psi)	(1,600)
Polycarbonate	N/mm²	4.6
	(psi)	(670)
PMMA	N/mm²	5.1
	(psi)	(740)

"T" Peel Strength, ISO 11339:

Aluminum (Gritblasted)	N/mm²	4.5
	(psi)	(650)

After 24 hours @ 22 °C, Activator Ini No.1™ on 1 side

Lap Shear Strength, ISO 4587,

Grit Blasted Mild Steel (GBMS)	N/mm²	≥15[LMS]
	(psi)	(2,180)
PVC	N/mm²	2.2
	(psi)	(360)

"T" Peel Strength, ISO 11339:

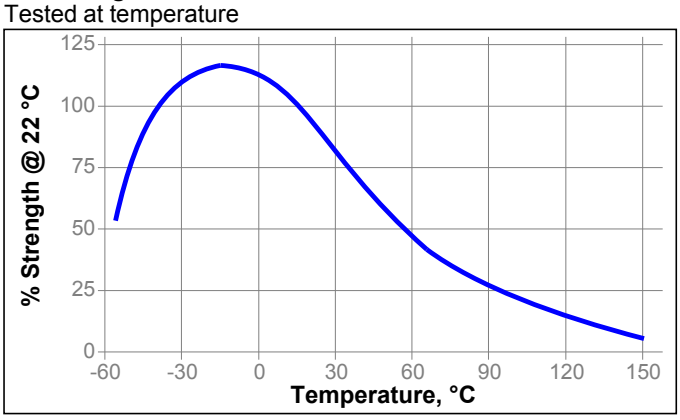
Aluminum (Gritblasted)	N/mm²	≥4[LMS]
	(psi)	(580)

TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 1 week @ 22 °C, Activator Ini No. 5™ on 1 side
Lap Shear Strength, ISO 4587 N/mm² :
Mild steel (grit blasted)

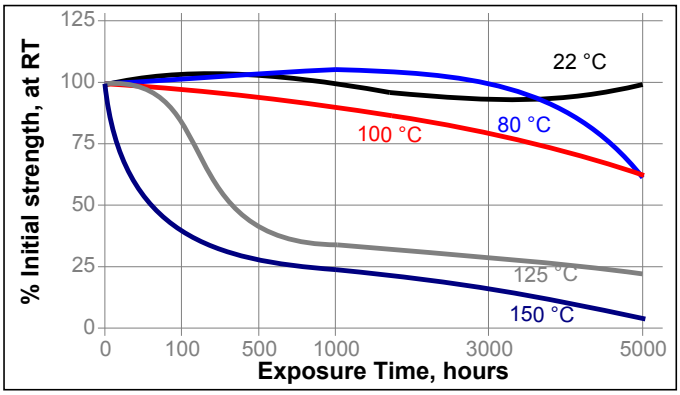
Hot Strength

Tested at temperature



Heat Aging

Aged at temperature indicated and tested @ 22 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22°C

		% of initial strength			
Environment	**°C**	**100 h**	**1000 h**	**3000 h**	**5000 h**
Acetone	22	79	73	34	2
ATF	22	100	92	71	88
98% RH	40	88	64	53	55
Motor oil (MIL-L-46152)	22	99	73	79	77
Salt water solution, 7.5%	22	73	84	83	69
Unleaded gasoline	22	92	77	39	7
Water	60	71	66	64	45
Water	90	62	49	35	39
Water/glycol 50/50	87	65	73	42	39

Shear Strength on Stainless Steel Lapshears

		% of initial strength			
Environment	**°C**	**100 h**	**1000 h**	**3000 h**	**5000 h**
Acetic Acid, 10%	22	100	79	74	83
Sodium hydroxide, 4%	22	69	68	13	6

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Directions for use:

1. For best performance bond surfaces should be clean and free from grease.
2. To ensure a fast and reliable cure, Activator Ini No.1™ or Ini No.5™ should be applied to one of the bond surfaces and the adhesive to the other surface. Parts should be assembled within 15 minutes.
3. The recommended bondline gap is 0.1 mm. Where bond gaps are large (up to a maximum of 0.5 mm), or faster cure speed is required, Activator Ini No.1™ or Ini No.5™ should be applied to both surfaces. Parts should be assembled immediately (within 1 minute).
4. Excess adhesive can be wiped away with organic solvent.
5. Bond should be held clamped until adhesive has fixtured.
6. Product should be allowed to develop full strength before subjecting to any service loads (typically 24 to 72 hours after assembly, depending on bond gap, materials and ambient conditions).

Loctite Material Specification[LMS]

LMS dated July 3, 2012. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.
Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties
Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Note:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
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Reference 0.2