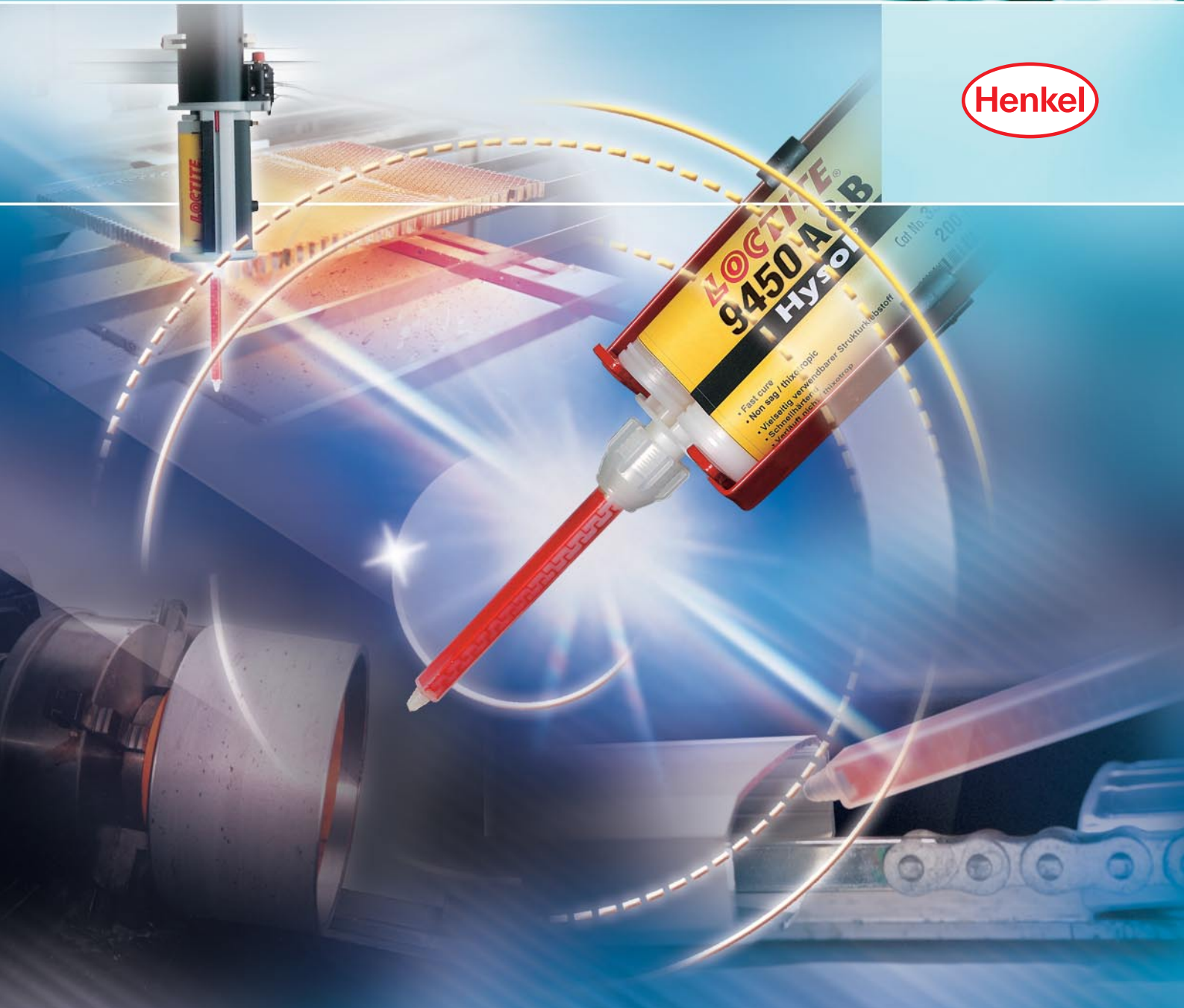


LOCTITE[®] Hysol[®]

Structural Bonding Solutions



Henkel



A collection of laboratory glassware including beakers, flasks, and a test tube, with a pipette dispensing liquid into one of them. The background is a light blue gradient.

Advanced Solutions

The Loctite® brand, part of the Henkel portfolio since 1997, is renowned for the excellence of its adhesives and sealants. For more than fifty years it has been providing solutions across the whole spectrum of adhesive technologies and manufacturing processes.

With products and expertise in almost every segment of industry, Henkel engineers and chemists know the importance of understanding both the full scope of manufacturing processes as well as the complex challenges of very specific needs. These needs are met with a deep chemical knowledge that enables Henkel to respond with the most innovative solutions.

Since the original development of a unique anaerobic technology, Loctite® products have become vital components in many of the machines and products that are at the core of everyday life. Loctite® products are used in markets as diverse as electronics, automotive, aerospace, biomedical and many manufacturing industries.

With the addition of Loctite® Hysol® Epoxies to its product family, Henkel offers a broad range of unique adhesives which together with the company's commitment to quality and service, makes Henkel the single source for a diverse technology portfolio of industry-leading adhesives.

The Loctite® Hysol® range comprises one and two component epoxies that offer improved clarity, less odour, better flow, higher strength and greater durability than competitive products. They are approved and specified by engineers and designers worldwide for a wide range of bonding applications, from aerospace to the electronics industry, from maintenance to original equipment manufacturers. Close attention to environmental issues means they can be shipped and used in markets worldwide without compromising performance.

The strength of the Loctite® Hysol® product range is in its ability to bond the broadest possible variety of substrates including metals, glass, ceramic, wood and most plastics.

They cure rapidly at room or elevated temperatures and are ideal for automated production processes to replace welding and riveting with a corrosion free, reduced stress joint.

Henkel offers much more than outstanding products, it provides solutions to many of industry's biggest challenges.

Whether it is by reducing assembly costs, providing design and application assistance or increasing the reliability of a process, Henkel is dedicated to earning and keeping the trust of its customers.



Making the Right Choice

This comprehensive guide is designed to make it easy for you to select the right Loctite® Hysol® Epoxy adhesive for a variety of applications. Simply select suitable adhesives for bonding particular substrates and compare the characteristics of different products using the technical data. Choose the compatible dispensing equipment for your pack size and see the product list for ordering information.

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Loctite® Dispensing Equipment

Select the compatible dispensing solution

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Complete Product List

including ordering information



Substrate Selector Guide

for an initial product recommendation

Loctite® Hysol® Epoxy adhesives bond a wide range of substrates.


Please refer to the chart below to select the best adhesive for your application. Each adhesive is colour coded to its product group. Refer to the following pages for product description and typical properties of the recommended adhesive.

Loctite® Hysol®	3421 A&B	3423 A&B	9481 A&B	9483 A&B	9484 A&B	9489 A&B	3430 A&B	9455 A&B	3422 A&B	9450 A&B	3450 A&B	3455 A&B	3463 A&B	3425 A&B	9466 A&B	9461 A&B	9464 A&B	9514	9492 A&B	9496 A&B	9497 A&B	9535	9509	9502	9514	
Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Zinc dichromate steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Hot dipped galvanised steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Aluminium	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Copper	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Brass	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Thermoplastics	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Thermoset plastics	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
GRP/SMC composites	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Rubbers	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Glass	●	○	○	○	○	○	●	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○
Ceramic	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Masonry	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Wood	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Highly recommended
○ Recommended


General purpose epoxies

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Five-minute epoxies

Page **8**




Toughened epoxies

Page **10**



High temperature epoxies

Page **12**



Henkel recommends that the selected product for your specific application is evaluated to determine suitability. If you require additional information or advice, Henkel has technical personnel trained to provide on site design and engineering support, application testing, validation and integration of dispensing and cure systems.

The Loctite® Hysol® range is part of an extensive range of high-performance adhesives and sealants designed for industrial use. This includes anaerobic, cyanoacrylate, light curing and specialised silicone adhesives. For more information on the complete range of Loctite® products please contact Henkel or visit the web site at www.loctite.com.

Application Selector Guide



to meet your individual requirements

Loctite® Hysol® Epoxy adhesives for a variety of applications

General purpose epoxies are suitable for a wide range of general and flexible bonding applications. **Five-minute epoxies** are fast curing and ideal for multi-purpose use or metal repair where a rapid cure is required. **Toughened epoxies** offer exceptional strength and impact resistance, while **High temperature epoxies** are designed for use up to 180 °C. For the repair of worn or damaged parts, **Metal-filled epoxies** provide the perfect solution. The range also includes ultra clear products for bonding transparent substrates, adhesives with an extended working life for large areas as well as paste adhesives for gap filling and vertical applications.

Your application?

- Multi purpose adhesives for general bonding applications?

- Ultra clear adhesives for transparent bond lines?

- Flexible adhesives for low stress bonding of plastics and dissimilar substrates?

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6

**General
purpose
epoxies**

- Rapid cure for a fast fixture time?

- Ultra clear adhesives for fast transparent bonding?

- Emergency repair of metal parts like pipes and tanks?

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8

**Five-minute
epoxies**

- Highest shear and peel strength?

- Excellent impact resistance?

- Adhesives for bonding high performance composites like GRP and CFRP?

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10

**Toughened
epoxies**

- Resistance to high operating temperatures?

- One component heat curing?

- High thermal conductivity?

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**High
temperature
epoxies**

- Rebuild and restore worn and damaged metal parts?

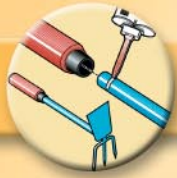
- Repair metal pipes and castings?

- Form moulds, tools, fixtures and models?

- Reduce sliding wear on moving parts?

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**Metal-filled
epoxies**



Loctite® Hysol®

General purpose epoxies

Your application

General bonding

Medium viscosity

Non-sag paste

Solution

3421 A&B

3423 A&B

Description	2K-Epoxy	2K-Epoxy
Mix ratio by volume (A:B)	1:1	1:1
Mix ratio by weight (A:B)	100:90	100:70
Working life	180 min.	70 min.
Fixture time	240 min.	180 min.
Colour	Clear amber	Grey
Viscosity	40 Pa.s	300 Pa.s
Shear strength (GBMS)	23 N/mm ²	17 N/mm ²
Peel strength (GBMS)	2.5 N/mm	2.7 N/mm
Operating temperature	-55 °C to 120 °C	-55 °C to 120 °C
Pack sizes	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 1 kg tubs 20 kg pails	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 1 kg tubs 20 kg pails

Loctite® Hysol® 3421 A&B

- Medium viscosity
- Extended working life
- Excellent humidity resistance

Loctite® Hysol® 3421 A&B is a general purpose, 2K-Epoxy adhesive for bonding large surfaces which require a long open time. Ideal for bonding metals, plastics and most other surfaces which will be subjected to high humidity environments.

Loctite® Hysol® 3423 A&B

- Non-sag paste
- Medium working life
- Excellent chemical resistance

Loctite® Hysol® 3423 A&B is a general purpose, 2K-Epoxy adhesive, suitable for gap filling and vertical applications. Ideal for bonding metal components.



Clear bonding

Flexible bonding

Light paste

Flowable

Medium working life

Extended working life

9481 A&B

9483 A&B

9484 A&B

9489 A&B

9481 A&B	9483 A&B	9484 A&B	9489 A&B
2K-Epoxy	2K-Epoxy	2K-Epoxy	2K-Epoxy
2.7:1 (2:1 cartridges)	2:1	1:1	1:1
100 : 33	100 : 46	100 : 85	100 : 85
60 min.	30 min.	40 min.	100 min.
300 min.	210 min.	180 min.	300 min.
Clear	Ultra clear	Grey	Grey
50 Pa.s	9.0 Pa.s	70 Pa.s	45 Pa.s
19 N/mm ²	23 N/mm ²	25 N/mm ²	10 N/mm ²
1.0 N/mm	1.5 N/mm	1.3 N/mm	2.0 N/mm
-55 °C to 120 °C	-55 °C to 150 °C	-55 °C to 120 °C	-55 °C to 120 °C
50 ml dual cartridge	50 ml dual cartridge	50 ml dual cartridge	50 ml dual cartridge
400 ml dual cartridge	400 ml dual cartridge	400 ml dual cartridge	400 ml dual cartridge
1 kg tubs	1 kg tubs	1 kg tubs	1 kg tubs
20 kg pails	20 kg pails	20 kg pails	20 kg pails

Loctite® Hysol® 9481 A&B

- Light paste
- Long working life
- Multi purpose

Loctite® Hysol® 9481 A&B is a general purpose, 2K-Epoxy adhesive, suitable for a wide variety of substrates including metals, ceramic, glass and most plastics. Ideal for bonding fibre optics and printed circuit boards.

Loctite® Hysol® 9483 A&B

- Flowable
- Ultra clear
- Low moisture absorption

Loctite® Hysol® 9483 A&B is a general purpose, 2K-Epoxy adhesive, suitable for bonding and potting where optical clarity and high strength are required. Ideal for bonding decorative panels and displays.

Loctite® Hysol® 9484 A&B

- Medium working life
- Flexible (elongation: ~ 20 %)
- High impact resistance

Loctite® Hysol® 9484 A&B is a general purpose, 2K-Epoxy adhesive, suitable for low stress and high impact resistant bonding. Ideal for bonding dissimilar substrates like GRP, SMC and composite elements.

Loctite® Hysol® 9489 A&B

- Extended working life
- Flexible (elongation: ~ 60 %)
- High impact resistance

Loctite® Hysol® 9489 A&B is a general purpose, 2K-Epoxy adhesive, suitable for low stress and high impact resistant bonding of large surfaces. Ideal for bonding dissimilar substrates like GRP, SMC and composite elements.



Loctite® Hysol®

Five-minute epoxies

Your application

Multi purpose

Toughened

Flowable

Medium viscosity

Solution

3430 A&B

9455 A&B

3422 A&B

Description	2K-Epoxy	2K-Epoxy	2K-Epoxy
Mix ratio by volume (A:B)	1:1	1:1	1:1
Mix ratio by weight (A:B)	100:100	100:105	100:100
Working life	4 min.	3 min.	3 min.
Fixture time	12 min.	15 min.	7 min.
Colour	Ultra clear	Ultra clear	Pale yellow
Viscosity	25 Pa.s	3.2 Pa.s	50 Pa.s
Shear strength (GBMS)	22 N/mm ²	14 N/mm ²	18 N/mm ²
Peel strength (GBMS)	1.5 N/mm	1.8 N/mm	1 N/mm
Operating temperature	-55 °C to 100 °C	-55 °C to 100 °C	-55 °C to 100 °C
Pack sizes	24 ml twin syringe 50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 20 kg pails	50 ml dual cartridge 200 ml dual cartridge 1 kg jerry cans 20 kg pails	50 ml dual cartridge 200 ml dual cartridge

Loctite® Hysol® 3430 A&B

- Medium viscosity
- Ultra clear
- Toughened
- Water resistant

Loctite® Hysol® 3430 A&B is a five-minute, 2K-Epoxy adhesive, suitable for applications requiring an optically clear bond line. Ideal for bonding glass, decorative panels and displays and general DIY applications.

Loctite® Hysol® 9455 A&B

- Flowable
- Ultra clear
- Flexible (elongation: ~ 80 %)
- UV resistant

Loctite® Hysol® 9455 A&B is a five-minute, 2K-Epoxy adhesive, which forms a clear bondline with good flexibility and peel resistance. Ideal for bonding and potting of optical components like sensors and lenses.

Loctite® Hysol® 3422 A&B

- Medium viscosity
- Fast curing
- High strength
- Water resistant

Loctite® Hysol® 3422 A&B is a five-minute, 2K-Epoxy adhesive, suitable for a wide variety of substrates including metals, ceramic, glass and most plastics.





Metal repair

Gap filling

Medium viscosity

High viscosity

Kneadable stick

9450 A&B

3450 A&B

3455 A&B

3463 A&B

2K-Epoxy	2K-Epoxy	2K-Epoxy	2K-Epoxy
1:1	1:1	1:1	1:1
100:92	100:105	100:106	100:100
4 min.	4 min.	8 min.	3 min.
13 min.	12 min.	120 min.	10 min.
Translucent	Black	Grey	Dark grey
200 Pa.s	35 Pa.s	100 Pa.s	Putty
23 N/mm ²	25 N/mm ²	19 N/mm ²	6.8 N/mm ²
< 1 N/mm	1.5 N/mm	1.5 N/mm	< 1 N/mm
-55 °C to 100 °C	up to 100 °C	up to 100 °C	up to 100 °C
50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge	25 ml twin syringe	24 ml twin syringe	50 g stick 114 g stick

Loctite® Hysol® 9450 A&B

- Non-sag paste
- Translucent
- Fast curing

Loctite® Hysol® 9450 A&B is a five-minute, 2K-Epoxy adhesive, suitable for a wide variety of substrates including metals, ceramic, glass and most plastics. Ideal for gap filling and vertical applications.

Loctite® Hysol® 3450 A&B

- Medium viscosity
- Grindable
- High strength

Loctite® Hysol® 3450 A&B is a five-minute, 2K-Epoxy adhesive, suitable where large gaps are present. Ideal for bonding and filling damaged components.

Loctite® Hysol® 3455 A&B

- Non-sag paste
- Grindable
- High strength

Loctite® Hysol® 3455 A&B is a five-minute, 2K-Epoxy paste, suitable for repairing and rebuilding worn metal parts.

Loctite® Hysol® 3463 A&B Metal Magic Steel™ Stick

- Steel filled kneadable stick
- Cures under water
- NSF approved (for potable water)

Loctite® Hysol® 3463 A&B Metal Magic Steel™ Stick is a rapid cure, 2K-Epoxy adhesive, suitable for emergency metal repairs. Ideal for sealing leaking tanks and pipes, filling oversized bolt holes, smoothing welds and repairing small cracks in castings.



Loctite® Hysol®

Toughened epoxies

Your application

Extended working life

Gap filling

Multi purpose

Solution

3425 A&B

9466 A&B

Description	2K-Epoxy	2K-Epoxy
Mix ratio by volume (A:B)	1:1	2:1
Mix ratio by weight (A:B)	100 : 100	100 : 50
Working life	120 min.	60 min.
Fixture time	240 min.	180 min.
Colour	Off-white	Off-white
Viscosity	1,000 Pa.s	30 Pa.s
Shear strength (GBMS)	28 N/mm ²	37 N/mm ²
Peel strength (GBMS)	2.0 N/mm	8.0 N/mm
Operating temperature	-55 °C to 120 °C	-55 °C to 120 °C
Pack sizes	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 1 kg tubs 20 kg pails	50 ml dual cartridge 400 ml dual cartridge 1 kg tubs 20 kg pails

① Gel time @ 120 °C

② Cure time @ 120 °C or higher; see technical datasheet

Loctite® Hysol® 3425 A&B

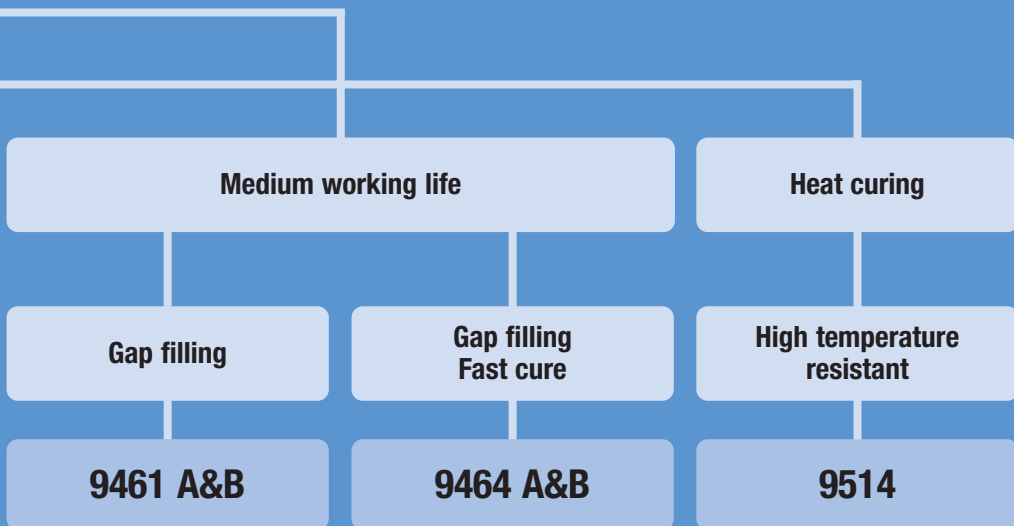
- Non-sag paste
- Extended working life
- Excellent environment resistance

Loctite® Hysol® 3425 A&B is a toughened, 2K-Epoxy adhesive for bonding large surfaces requiring a long open time. Ideal for gap filling and vertical bonding of metals and rigid plastics.

Loctite® Hysol® 9466 A&B

- Medium viscosity
- Low density – SG = 1.0
- High strength

Loctite® Hysol® 9466 A&B is a toughened, 2K-Epoxy adhesive, suitable for multi purpose applications requiring long open time and high bonding strength. Ideal for a wide variety of substrates like metals, ceramic and most plastics.



2K-Epoxy	2K-Epoxy	1K-Epoxy
1:1	1:1	Heat cure
100:100	100:100	Heat cure
40 min.	20 min.	5 min.^①
240 min.	180 min.	30 min.^②
Grey	Grey	Grey
270 Pa.s	270 Pa.s	1,480 Pa.s
24 N/mm²	22 N/mm²	46 N/mm²
10.0 N/mm	10.5 N/mm	9.5 N/mm
-55 °C to 120 °C	-55 °C to 120 °C	-55 °C to 200 °C
50 ml dual cartridge 400 ml dual cartridge 1 kg tubs 20 kg pails	50 ml dual cartridge 400 ml dual cartridge 1 kg tubs 20 kg pails	300 ml cartridge 20 kg pail

Loctite® Hysol® 9461 A&B

- Non-sag paste
- Heat accelerated (4 min. @ 120 °C)
- High peel strength
- Excellent low temperature properties

Loctite® Hysol® 9461 A&B is a toughened, 2K-Epoxy adhesive, suitable for applications requiring gap filling and high peel strength. Ideal for bonding dissimilar substrates like GRP, SMC and composites.

Loctite® Hysol® 9464 A&B

- Non-sag paste
- Heat accelerated (4 min. @ 120 °C)
- Fast handling strength
- Excellent low temperature properties

Loctite® Hysol® 9464 A&B is a toughened, 2K-Epoxy adhesive, suitable for applications requiring fast cure and high peel strength. Ideal for bonding dissimilar substrates like GRP, SMC and composites.

Loctite® Hysol® 9514

- Suitable for induction curing
- High shear and peel strength
- Excellent chemical resistance
- High temperature resistant (200 °C)

Loctite® Hysol® 9514 is a toughened, 1K-Epoxy adhesive, suitable for gap filling and resistance to high operating temperatures. Ideal for applications requiring toughness such as filter and magnet bonding.



Loctite® Hysol®

High temperature epoxies

Your application

Room temperature curing

Multi purpose

Thermally conductive potting

Thermally conductive

Solution

9492 A&B

9496 A&B

9497 A&B

Description	2K-Epoxy	2K-Epoxy	2K-Epoxy
Mix ratio by volume (A:B)	2:1	6:1	2:1
Mix ratio by weight (A:B)	100:50	100:7	100:50
Working life	15 min.	2 hrs	2 hrs
Fixture time	75 min.	8 hrs	8 hrs
Colour	White	Black	Grey
Viscosity	30 Pa.s	2.5 Pa.s	30 Pa.s
Shear strength (GBMS)	20 N/mm ²	17 N/mm ²	20 N/mm ²
Shear strength @ 120 °C (GBMS)	4.2 N/mm ²	6.8 N/mm ²	6 N/mm ²
Operating temperature	-55 °C to 180 °C	-55 °C to 150 °C	-55 °C to 180 °C
Pack sizes	50 ml dual cartridge 400 ml dual cartridge 1 kg tubs 20 kg pails	1 kg tubs 20 kg pails	50 ml dual cartridge 400 ml dual cartridge 20 kg pails

① Gel time @ 120 °C

② Cure time @ 120 °C

Loctite® Hysol® 9492 A&B

- Medium viscosity
- Excellent chemical resistance
- High temperature resistant (180 °C)

Loctite® Hysol® 9492 A&B is a high operating temperature resistant, 2K-Epoxy adhesive, suitable for multi purpose applications. Ideal for bonding electronic components and mesh to frames.

Loctite® Hysol® 9496 A&B

- Flowable
- Low shrinkage
- High thermal conductivity

Loctite® Hysol® 9496 A&B is a thermally conductive, 2K-Epoxy adhesive for low stress applications. Ideal for potting electronic components.

Loctite® Hysol® 9497 A&B

- Medium viscosity
- High thermal conductivity
- High compression strength
- High temperature resistant (180 °C)

Loctite® Hysol® 9497 A&B is a thermally conductive, 2K-Epoxy adhesive for high temperature filling and bonding applications. Ideal for heat dissipation.



Heat curing

Low temperature curing

Multi purpose

Gap filling

Toughened

9535

9509

9502

9514

1K-Epoxy	1K-Epoxy	1K-Epoxy	1K-Epoxy
Heat cure	Heat cure	Heat cure	Heat cure
Heat cure	Heat cure	Heat cure	Heat cure
5 min. ^①	5 min. ^①	5 min. ^①	5 min. ^①
20 min. ^②	30 min. ^②	30 min. ^②	30 min. ^②
White	Off-white	Dark grey	Grey
18 Pa.s	40 Pa.s	250 Pa.s	1.480 Pa.s
25 N/mm ²	29 N/mm ²	35 N/mm ²	46 N/mm ²
6 N/mm ²	25 N/mm ²	19 N/mm ²	20 N/mm ²
-55 °C to 180 °C	-55 °C to 180 °C	-55 °C to 200 °C	-55 °C to 200 °C
1 l cartridge 5 l pail	300 ml cartridge	300 ml cartridge	300 ml cartridge 20 kg pail

Loctite® Hyisol® 9535

- Self-levelling
- Fluorescent
- Biocompatibility tested
- Low temperature cure (> 80 °C)
- High temperature resistant (180 °C)

Loctite® Hyisol® 9535 is a high operating temperature resistant, 1K-Epoxy adhesive, suitable for multipurpose applications. Ideal for low temperature or fast curing requirements.

Loctite® Hyisol® 9509

- Self-levelling
- Roller coatable
- Excellent chemical resistance
- High temperature resistant (180 °C)

Loctite® Hyisol® 9509 is a high operating temperature resistant, 1K-Epoxy adhesive, suitable for multi purpose applications. Ideal for bonding magnets, oil filters and under-bonnet parts.

Loctite® Hyisol® 9502

- Non-sag paste
- High strength
- Excellent chemical resistance
- High temperature resistant (200 °C)

Loctite® Hyisol® 9502 is a high operating temperature resistant, 1K-Epoxy adhesive, with excellent gap filling suitable for a wide variety of substrates. Ideal for bonding magnets, oil filters and under-bonnet parts.

Loctite® Hyisol® 9514

- Suitable for induction curing
- High shear and peel strength
- Excellent chemical resistance
- High temperature resistant (200 °C)

Loctite® Hyisol® 9514 is a toughened, 1K-Epoxy adhesive, suitable for gap filling and resistance to high operating temperatures. Ideal for applications requiring toughness such as filter and magnet bonding.



Loctite® Hysol®

Metal-filled epoxies

Your application

Steel

Putty

Pourable

Fast cure

Solution

3471 A&B
Metal Set S1

3472 A&B
Metal Set S2

3473 A&B
Metal Set S3

Description	2K-Epoxy	2K-Epoxy	2K-Epoxy
Mix ratio by volume (A:B)	1:1	1:1	1:1
Mix ratio by weight (A:B)	100:100	100:100	100:100
Working life	45 min.	45 min.	6 min.
Fixture time	180 min.	180 min.	15 min.
Colour	Dark grey	Grey	Grey
Viscosity	Putty	Liquid	Putty
Shear strength (GBMS)	20 N/mm ²	25 N/mm ²	20 N/mm ²
Compressive strength	70 N/mm ²	70 N/mm ²	60 N/mm ²
Operating temperature	up to 120 °C	up to 120 °C	up to 120 °C
Pack sizes	500 g tub kit	500 g tub kit	500 g tub kit

Loctite® Hysol® 3471 A&B Metal Set S1

- Steel putty
- Low shrinkage on cure (0.1 %)
- Temperature resistant (120 °C)

Loctite® Hysol® 3471 A&B is a steel filled, non-sagging, 2K-Epoxy adhesive for repairing and rebuilding worn metal parts. Ideal for repairing pipes and castings as well as cracks in housings and machine parts.

Loctite® Hysol® 3472 A&B Metal Set S2

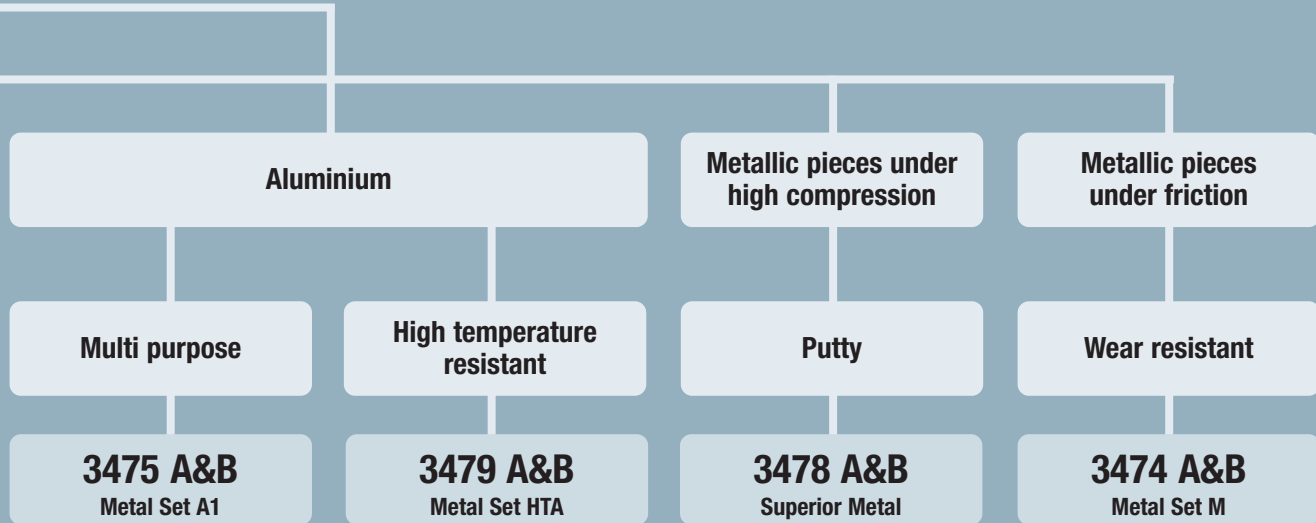
- Steel liquid
- Low shrinkage on cure (0.1 %)
- Temperature resistant (120 °C)

Loctite® Hysol® 3472 A&B is a pourable, steel filled, self-leveling 2K-Epoxy adhesive for repairing and rebuilding worn metal parts. Ideal for repairing pipes and castings as well as cracks in housings and machine parts. Making of moulds, models, tools and fixtures.

Loctite® Hysol® 3473 A&B Metal Set S3

- Steel putty
- Fast curing
- Temperature resistant (120 °C)

Loctite® Hysol® 3473 A&B is a steel filled, non-sagging, 2K-Epoxy adhesive for emergency repairing and rebuilding worn metal parts. Ideal for repairing pipes and castings as well as cracks in housings and machine parts.



2K-Epoxy	2K-Epoxy	2K-Epoxy	2K-Epoxy
1:1	1:1	4:1	1:1
100:100	100:100	7.25:1	100:100
45 min.	40 min.	20 min.	45 min.
180 min.	150 min.	120 min.	180 min.
Grey	Grey	Dark grey	Grey
Putty	Putty	Putty	Putty
20 N/mm ²	20 N/mm ²	17 N/mm ²	20 N/mm ²
70 N/mm ²	90 N/mm ²	125 N/mm ²	70 N/mm ²
up to 120 °C	up to 190 °C	up to 120 °C	up to 120 °C
500 g tub kit	500 g tub kit	450 g tub kit	500 g tub kit

Loctite® Hysol® 3475 A&B Metal Set A1

- Aluminium putty
- Low shrinkage on cure (0.1 %)
- Temperature resistant (120 °C)

Loctite® Hysol® 3475 A&B is an aluminium filled, non-sagging, 2K-Epoxy adhesive for repairing and rebuilding worn metal parts. Ideal for repairing castings and cracks in housings and machine parts.

Loctite® Hysol® 3479 A&B Metal Set HTA

- Aluminium putty
- Low shrinkage on cure (0.2 %)
- High temperature resistant (190 °C)

Loctite® Hysol® 3479 A&B is an aluminium filled, non-sagging, 2K-Epoxy adhesive for repairing and rebuilding worn metal parts in high operating temperature applications. Ideal for repairing castings and cracks in housings and machine parts.

Loctite® Hysol® 3478 A&B Superior Metal

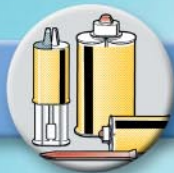
- Steel putty
- Low shrinkage on cure (0.1 %)
- High compression strength
- High temperature strength (120 °C)

Loctite® Hysol® 3478 A&B is a ferro-silicon filled, non-sagging, 2K-Epoxy adhesive, for repairing and rebuilding worn metal parts in areas under high compression loads. Ideal for shafts, bearing seats and parallel key assemblies.

Loctite® Hysol® 3474 A&B Metal Set M

- Self-lubricating
- High wear resistant
- Temperature resistant (120 °C)

Loctite® Hysol® 3474 A&B is a mineral filled, non-sagging, 2K-Epoxy adhesive which forms a self-lubricating surface to reduce sliding wear on moving parts. Ideal for metallic surfaces under friction.



Convenient Packaging

Detailed information about pack sizes

Loctite® Hysol® 2K epoxies

- To reduce wastage and control costs, two-component products are available in easy-to-use 50, 200 and 400 ml dual cartridges with square mix-nozzles, designed for use with Loctite® manual and pneumatic dispensers. These compact mixers offer the highest mixing efficiency as well as the lowest waste and pressure drop.
- Two-component epoxies are also available in 1 and 20 kg packs for high volume applications.
- Some special products for emergency repairs, maintenance and high temperature applications are packed in manual mix twin syringes, tub kits or kneadable sticks.



Loctite® Hysol® 1K epoxies

One-component products are packed in convenient 300 ml and 1 l cartridges, designed for use with Loctite® handheld applicators and automatic systems.



Loctite® Dispensing Equipment



Select the compatible dispensing solution

To increase the speed of production and provide accurate and consistent dispensing, Henkel offers a complete range of Loctite® equipment for manual, semi-automatic as well as automated application of epoxy products. The equipment range varies from simple hand-operated dispensers to fully automated systems, each with a respective mixer nozzle and other accessories. The engineers and technicians at Henkel have the expertise and experience to develop products and equipment, design prototypes, carry out testing and evaluation, in addition to on-site consultation and support.

Handheld applicators

These ergonomically designed applicators are made for the fast, precise, clean and economic dispensing of epoxy adhesives from their original packages. Whether manual or pneumatic, they reduce waste and ensure safe handling. The selection of a Loctite® handheld applicator is based on product type, package configuration and process requirements.

Automatic systems

An analysis of your production process will determine the most cost effective dispensing system and application method for your current requirements. However, if you are planning to update your production process, Henkel can demonstrate the benefits of installing a flexible system that can grow with your changing needs.

Manual Handguns for 2K products

Handheld manually operated applicators provide a convenient method to apply product accurately with minimal waste.

Available for:

- 50 ml dual cartridges 1:1 & 2:1 (96001)
- 200 ml dual cartridges 1:1 & 2:1 (96003)
- 400 ml dual cartridges 1:1 & 2:1 (983438)



Pneumatic Handguns for 2K products

Handheld pneumatic applicators provide a convenient method to apply a product accurately with minimal waste.

Available for:

- 50 ml dual cartridges 1:1 & 2:1 (97042)
- 200 ml dual cartridges 1:1 & 2:1 (983437)
- 400 ml dual cartridges 1:1 & 2:1 (983439)





Loctite® Dispensing Equipment

Select the compatible dispensing solution

Dual Cartridge Dispense System



Pneumatic ram system for prepackaged dual cartridge adhesive, designed for automatic applications. The correct mix ratio is secured by design.

Consists of:

- 400 ml Dual Cartridge Pusher (983439)
- Refitting kit for pneumatic handgun (97543)
- Clamp shell (8954263)
- Mixer Pinch Valve (97141)
- Pinch tube insert (97541)
- Support tube for square mixer (97542)
- Adjustable aluminium stand (Q1000661)
- Precision control unit (97006)

The Loctite® Pinch Tube Valve (97141) attaches directly to the end of the square mix nozzle. It provides no-drip shut off, using disposable pinch tube elements.

Twin Dispenser for 2K products



Volumetric mix dispenser, designed for semi-automatic and robotic applications in conjunction with a double reservoir or pump system.

For mixing ratios 1:1 (97061) and 2:1 (97062)
Optional: Dispensing head heater (97534)

- Max. dispensed amount 8 ml
- Integrated controller
- Compact design

Supply option:

- Pressure tank with low level indicator (97108)

Dispense Units for 1K products



Clampshell design for easy and secure loading and unloading:

- 300 ml cartridges (97631)

Handheld, pneumatic powered applicators, which provide a convenient method to apply a product accurately with minimal waste:

- 300 ml cartridges (97002)

Henkel is not only supplier of state-of-the-art dispense modules, but can also design and build complete customized assembly stations. These can include robots, x/y-axis, rotary index tables and fully automatic feed systems or a combination of standard modules and customized equipment.



1. Volumetric Dual Gear Pump Dispenser

For manual and semi-automated product dispensing of flowable self-levelling products from containers. Used in combination with handheld dispensing gun and static mixer. All mixing ratios for Loctite® Hysol® products available.

- e.g. Dual Gear Pump 1:1 ratio (97690)

2. Dual Precision Piston Dispenser

Volumetric meter-mix dispensing system, suitable for filled and unfilled, flowable products. All mixing ratios for Loctite® Hysol® products available. Programmable dispense volumes 1 to 33 ml per shot.

- e.g. for semi and fully automated dispensing (97621)

3. Dual Rotor Pump Dispenser

Meter-mix dispensing system, ideally suited for bead dispensing of high viscosity products from 1 kg cans. Includes a handheld mix gun with static mixer and suckback capability to prevent run on. Minimum dispensed shot size 1 ml.

- 97504

4. Pail Pump Systems

Dispense effectively high viscosity pastes from 17 to 200 l containers. These systems are very durable, even in the toughest working environments. They are typically integrated into a complete dispensing system for a single component product, or used as a feed system for multiple component meter mix systems.

- e.g. Stainless Steel Extrusion Pump 24:1 (97560)



Loctite® Dispensing Equipment

Select the compatible dispensing solution

Accessories



50 ml Square Mix Nozzle, Luer/Stepped Combo Tip, 115 mm Overall Length, 5.3 mm, 1:1, 2:1, 4:1 mix ratios, (10 pcs)

• **984569**



200/400 ml Square Mix Nozzle, Stepped Tip, 130 mm Overall Length, 7.5 mm, 1:1, 2:1 mix ratios, (10 pcs)

• **984570**



Luer-Lok Adapter for Mix Nozzles 984570 and 983443. Allows for Dispense Needle Attachment, (10 pcs)

• **97298**



Twin Dispenser Mix Nozzle, Stepped Tip, 135 mm Overall Length, 5.4 mm, 1:1, 2:1 mix ratios, (10 pcs)

• **97502**



Twin Dispenser Mix Nozzle, Stepped Tip, 155 mm Overall Length, 6.5 mm, 1:1, 2:1 mix ratios, (10 pcs)

• **97503**



Twin Dispenser Mix Nozzle, Luer-Lock Tip, 75 mm Overall Length, 3.2 mm, 1:1, 2:1 mix ratios, (50 pcs)

• **97286**



50 ml Mix Nozzle, Stepped Tip, 115 mm Overall Length, 6.3 mm, 21 elem., 1:1, 2:1, 4:1 mix ratios (10 pcs)

• **98455**



200/400 ml Mix Nozzle, Stepped Tip, 220 mm Overall Length, 8 mm, 24 elem., 1:1, 2:1 mix ratios (10 pcs)

• **98457**



Support Tube for Square Mix Nozzle 984570 (1 pcs)

• **97542**

Complete Product List



Including ordering information

Product	Description	Pack Size	PK	Order-No.	Page	
3421 A&B	General purpose 2K-Epoxy	50 ml dual cartridge	10	*	6	
		200 ml dual cartridge	10	*		
		400 ml dual cartridge	10	*		
	3421 Part A Resin	1 kg tub Part A	4	*		
		20 kg pail Part A	1	*		
3421 Part B Hardener	1 kg tub Part B	4	*			
	20 kg pail Part B	1	*			
3422 A&B	Five-minute 2K-Epoxy	50 ml dual cartridge	10	*	8	
		200 ml dual cartridge	10	*		
3423 A&B	General purpose 2K-Epoxy	50 ml dual cartridge	10	*	6	
		200 ml dual cartridge	10	*		
		400 ml dual cartridge	10	*		
	3423 Part A Resin	1 kg tub Part A	4	*		
		20 kg pail Part A	1	*		
3423 Part B Hardener	1 kg tub Part B	4	*			
	20 kg pail Part B	1	*			
3425 A&B	Toughened 2K-Epoxy	50 ml dual cartridge	10	*	10	
		200 ml dual cartridge	10	*		
		400 ml dual cartridge	10	*		
	3425 Part A Resin	1 kg tub Part A	4	*		
		20 kg pail Part A	1	*		
3425 Part B Hardener	1 kg tub Part B	4	*			
	20 kg pail Part B	1	*			
3430 A&B	Five-minute 2K-Epoxy	24 ml twin syringe	12	*	8	
		50 ml dual cartridge	10	*		
		200 ml dual cartridge	10	*		
		400 ml dual cartridge	10	*		
		20 kg pail Part A	1	*		
3430 Part B Hardener	20 kg pail Part B	1	*			
3450 A&B	Five-minute 2K-Epoxy	25 ml twin syringe	12	*	9	
3455 A&B	Five-minute 2K-Epoxy	24 ml twin syringe	12	*	9	
3463 A&B	Metal Magic Steel™ Stick	50 g stick	24	*	9	
		114 g stick	24	*		
3471 A&B	Metal-filled 2K-Epoxy	500 g tub kit	10	*	14	
3472 A&B	Metal-filled 2K-Epoxy	500 g tub kit	10	*	14	
3473 A&B	Metal-filled 2K-Epoxy	500 g tub kit	10	*	14	
3474 A&B	Metal-filled 2K-Epoxy	500 g tub kit	10	*	15	
3475 A&B	Metal-filled 2K-Epoxy	500 g tub kit	10	*	15	
3478 A&B	Metal-filled 2K-Epoxy Superior Metal	450 g tub kit	6	*	15	
3479 A&B	Metal-filled 2K-Epoxy	500 g tub kit	10	*	15	
9450 A&B	Five-minute 2K-Epoxy	50 ml dual cartridge	10	*	9	
		200 ml dual cartridge	10	*		
		400 ml dual cartridge	10	*		
9455 A&B	Five-minute 2K-Epoxy	50 ml dual cartridge	10	*	8	
		200 ml dual cartridge	10	*		
		400 ml dual cartridge	10	*		
	9455 Part A Resin	1 kg jerry can Part A	4	*		
		20 kg jerry can Part A	1	*		
9455 Part B Hardener	1 kg jerry can Part B	4	*			
	20 kg jerry can Part B	1	*			
9461 A&B	Toughened 2K-Epoxy	50 ml dual cartridge	10	*	11	
		400 ml dual cartridge	10	*		
	9461 Part A Resin	1 kg tub Part A	4	*		
		20 kg pail Part A	1	*		
	9461 Part B Hardener	1 kg tub Part B	4	*		
20 kg pail Part B		1	*			

The 50, 200 and 400 ml dual cartridges are supplied with one square mixer per cartridge.
*Please contact your local Henkel representative for ordering information.



Complete Product List

Including ordering information

Product	Description	Pack Size	PK	Order-No.	Page
9464 A&B	Toughened 2K-Epoxy	50 ml dual cartridge	10	*	11
		400 ml dual cartridge	10	*	
	9464 Part A Resin	1 kg tub Part A	4	*	
	9464 Part B Hardener	20 kg pail Part A 1 kg tub Part B 20 kg pail Part B	1 4 1	* * *	
9466 A&B	Toughened 2K-Epoxy	50 ml dual cartridge	10	*	10
		400 ml dual cartridge	10	*	
	9466 Part A Resin	1 kg tub Part A	4	*	
	9466 Part B Hardener	20 kg pail Part A 1 kg tub Part B 17 kg pail Part B	1 4 1	* * *	
9481 A&B	General purpose 2K-Epoxy	50 ml dual cartridge	10	*	7
		400 ml dual cartridge	10	*	
	9481 Part A Resin	1 kg tub Part A	4	*	
	9481 Part B Hardener	20 kg pail Part A 1 kg tub Part B 17 kg pail Part B	1 4 1	* * *	
9483 A&B	General purpose 2K-Epoxy	50 ml dual cartridge	10	*	7
		400 ml dual cartridge	10	*	
	9483 Part A Resin	1 kg tub Part A	4	*	
	9483 Part B Hardener	20 kg pail Part A 1 kg jerry can Part B 20 kg jerry can Part B	1 4 1	* * *	
9484 A&B	General purpose 2K-Epoxy	50 ml dual cartridge	10	*	7
		400 ml dual cartridge	10	*	
	9484 Part A Resin	1 kg tub Part A	4	*	
	9484 Part B Hardener	20 kg pail Part A 1 kg tub Part B 20 kg pail Part B	1 4 1	* * *	
9489 A&B	General purpose 2K-Epoxy	50 ml dual cartridge	10	*	7
		400 ml dual cartridge	10	*	
	9489 Part A Resin	1 kg tub Part A	4	*	
	9489 Part B Hardener	20 kg pail Part A 1 kg tub Part B 20 kg pail Part B	1 4 1	* * *	
9492 A&B	High temperature 2K-Epoxy	50 ml dual cartridge	10	*	12
		400 ml dual cartridge	10	*	
	9492 Part A Resin	1 kg tub Part A	4	*	
	9492 Part B Hardener	20 kg pail Part A 1 kg tub Part B 20 kg pail Part B	1 4 1	* * *	
9496 A&B	High temperature 2K-Epoxy				12
	9496 Part A Resin	1 kg tub Part A 20 kg pail Part A	4 1	* *	
	9496 Part B Hardener	1 kg jerry can Part B 20 kg jerry can Part B	4 1	* *	
9497 A&B	High temperature 2K-Epoxy	50 ml dual cartridge	10	*	12
		400 ml dual cartridge	10	*	
	9497 Part A Resin	20 kg pail Part A	1	*	
	9497 Part B Hardener	20 kg pail Part B	1	*	
9535	High temperature 1K-Epoxy	1 l cartridge	2	*	13
		5 l pail	2	*	
9502	High temperature 1K-Epoxy	300 ml cartridge	5	*	13
9509	High temperature 1K-Epoxy	300 ml cartridge	5	*	13
9514	Toughened & High temperature 1K-Epoxy	300 ml cartridge	5	*	13
		20 kg pail	1	*	

The 50, 200 and 400 ml dual cartridges are supplied with one square mixer per cartridge.
*Please contact your local Henkel representative for ordering information.

Equipment	Description	PK	Order-No.	Page
96001	Manual Handguns for 2K products (50 ml dual cartridges 1:1 & 2:1)	1	267452	17
96003	Manual Handguns for 2K products (200 ml dual cartridges 1:1 & 2:1)	1	267453	17
97002	Pneumatic Handguns for 1K products (300 ml cartridges)	1	88632	18
97006	Precision control unit	1	88633	18
97042	Pneumatic Handguns for 2K products (50 ml dual cartridges 1:1 & 2:1)	1	476898	17
97061	Twin Dispenser for 2K products (1:1)	1	727063	18
97062	Twin Dispenser for 2K products (1:2)	1	727062	18
97108	Pressure tank with low level indicator for 1 kg tubs	1	135555	18
97141	Mixer Pinch Valve	1	548168	18
97504	Dual Rotor Pump Dispenser	1	614699	19
97534	Twin Dispenser for 2K products (Dispensing head heater)	1	727408	18
97541	Pinch tube insert	1	376719	18
97542	Support tube for square mixer	1	550435	18
97543	Refitting kit for pneumatic handgun	1	585945	18
97560	Pail Pump Systems (24:1)	1	647717	19
97621	Dual Precision Piston Dispenser	1	571099	19
97631	Pneumatic Handguns (Clampshell) for 1K products (300 ml cartridges)	1	142634	18
97690	Volumetric Dual Gear Pump Dispenser	1	587982	19
983437	Pneumatic Handguns for 2K products (200 ml dual cartridges 1:1 & 2:1)	1	218315	17
983438	Manual Handguns for 2K products (400 ml dual cartridges 1:1 & 2:1)	1	218312	17
983439	Pneumatic Handguns for 2K products (400 ml dual cartridges 1:1 & 2:1)	1	218311	17/18
8954263	Clamp shell 90 mm	1	653689	18
Q1000661	Adjustable aluminium stand	1	586100	18

Accessories	Description	PK	Order-No.	Page
97286	Twin Dispenser Mix Nozzle, Luer-Lock Tip, 75 mm Overall Length, 3.2 mm, 1:1, 2:1 mix ratios	50	446903	20
97298	Luer-Lock Needle Adapter for mixers with stepped end	10	486510	20
97502	Twin Dispenser Mix Nozzle, Stepped Tip, 135 mm Overall Length, 5.4 mm, 20 elem., 1:1, 2:1 mix ratios	25	486499	20
97503	Twin Dispenser Mix Nozzle, Stepped Tip, 155 mm Overall Length, 6.5 mm, 20 elem., 1:1, 2:1 mix ratios	25	397503	20
97542	Support tube for square mixer (nozzle 984570)	10	550435	20
98455	50 ml Mix Nozzle, Stepped Tip, 115 mm Overall Length, 6.3 mm, 21 elem., 1:1, 2:1, 4:1 mix ratios	10	720230	20
984569	50 ml Mix Nozzle, Luer/Stepped Combo Tip, 115 mm Overall Length, 5.3 mm, 24 elem., 1:1, 2:1, 4:1 mix ratios	10	478562	20
98457	200/400 ml Mix Nozzle, Stepped Tip, 220 mm Overall Length, 8 mm, 24 elem., 1:1, 2:1 mix ratios	10	720174	20
984570	200/400 ml Mix Nozzle, Stepped Tip, 130 mm Overall Length, 7.5 mm, 24 elem., 1:1, 2:1 mix ratios	10	478563	20

Henkel – The Solution Provider

Truly Integrated, Truly International

Henkel is a world-wide operating, market-driven specialist in brands and technologies with affiliates in over 75 countries, providing technology competence from one single source. People in 125 countries around the world trust in brands and technologies from Henkel. The portfolio includes adhesives and sealants, products for direct glazing, corrosion protection, underbody and anti-chip coating, sound deadening solutions, body care and many other speciality chemicals.

Strong brands with proven and trusted names, such as Loctite® Hysol® Epoxies, are incorporated into this common platform and have long been the key to Henkel's success.

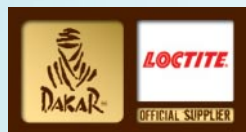
Around the world, Henkel also has an extensive commitment to motorsports. In 2004, the Henkel logo appeared for the first time on the rear-wing of the Team McLaren Mercedes race cars, thereby continuing the technical association with the team. The Dakar Rally is the latest in a long line of top-level competitive motor sport events in which Henkel has been involved. Loctite® and Teroson products from the Henkel portfolio have demonstrated their capability to provide fast and reliable repairs in the most difficult situations and have proved that they are more than a match for the world's most demanding conditions.

Meets all Needs

Henkel offers much more than outstanding products, it provides solutions to many of industry's biggest challenges – and to the problems that you face in ensuring reliability, safety and durability.

**We're here to ensure that you receive all the help and support you need.
All you have to do – is ask.**

For more information on the complete range of Loctite® products from the Henkel portfolio, please visit www.loctite.com, where you can download catalogues, data sheets, technical papers and application examples.



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