



CUSTOMER INFORMATION PACK

Introduction of the upgraded
LOCTITE® Instant Adhesives.

August 1, 2021



INTRODUCTION

The latest innovation from LOCTITE® is the introduction of an instant adhesive range formulated without adding hydroquinone (HQ). This innovation combines more globally acceptable raw materials with the high quality and reliability for which the LOCTITE brand is known. The upgraded product range includes LOCTITE 401™, 406™, 454™, 495™, 3090™ and 3092™.

In recent times, we have received increasing requests from our customers for instant adhesive product formulations without HQ and/or 2,2'-Methylenebis (4-methyl-6-tert-butylphenol) (MMBP). In response to this growing market trend, Henkel has upgraded its top-selling LOCTITE instant adhesives by replacing the raw materials HQ and MMBP with more globally acceptable raw materials. This has been achieved without compromising any of their key properties like fixture times, bond strengths, material versatility and shelf-life. The temperature resistance up to 120°C for 401, 406, 454 and 495 have also been maintained.

The data reported within this Information Pack supports the conclusion that the active removal of HQ (and MMBP) has been achieved without compromise to the quality and performance properties that you can expect from LOCTITE instant adhesives. (See Note Below).

SAFETY DATA SHEET

Depending on the country/region that you are in, you may see some changes in the Safety Data Sheet, under Section 3.

In the EU, and for all countries that follow the EU CLP regulations, hydroquinone no longer appears in the composition listed in Section 3 of the SDS for all product grades. In addition, MMBP no longer appears in the composition for LOCTITE 454, 3090 and 3092.

For other countries, you may not see any difference in the Safety Data Sheet, depending on the regulations that apply. Please refer to a locally available copy of the Safety Data Sheet for further details of any changes.

Note: It is important to note that although these ingredients are no longer part of the LOCTITE product formula ("HQ-Free or MMBP-Free"), trace amounts are possible due to shared manufacturing processes and/or select raw material impurities. Hence, Henkel has taken the additional step of introducing a low specification level for these (<50 PPM for HQ and <100 PPM for MMBP) and each batch is now checked for this after manufacture.

LOCTITE® 401™ UPGRADE – TEST RESULTS

1. LOCTITE MATERIAL SPECIFICATION

There is no change in LOCTITE Material Specification (LMS) for LOCTITE 401:

	NEW LOCTITE 401
Appearance (uncured)	Transparent, colorless to straw-colored liquid
Viscosity, Cone & Plate, mPa.s; Temp: 25°C; Shear Rate: 3,000 s ⁻¹	70–110 mPa.s
Tensile Strength, BunaN, 10 s RTC	≥ 6.9 N/mm ²

2. TEST RESULTS FOR LOCTITE 401

2.1. Fixture time vs. substrate

There is no change in fixture time for LOCTITE 401:

FIXTURE TIME (SECONDS)

	CURRENT LOCTITE 401	NEW LOCTITE 401
Steel	< 5	< 5
Aluminum	< 5	< 5
ABS	< 5	< 5
PVC	< 5	< 5
PC	5 to 10	5 to 10
Paper	< 5	< 5

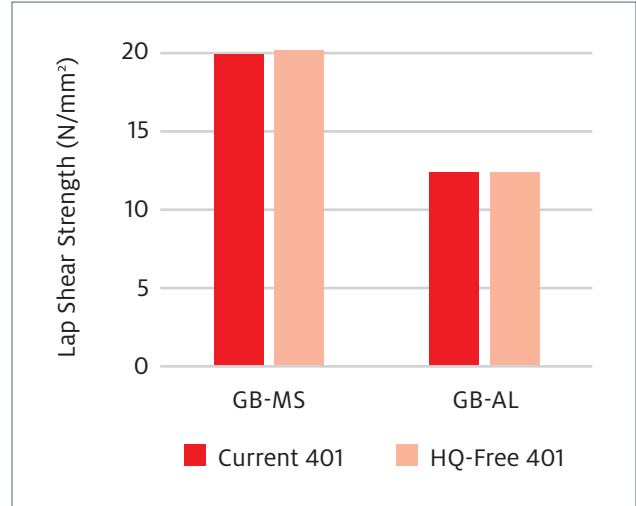
2.2. Initial bond strengths

The initial bond strength on plastics is unchanged. Substrate failure (SF) was observed on all plastics tested:

LAP SHEAR STRENGTH (N/mm²)

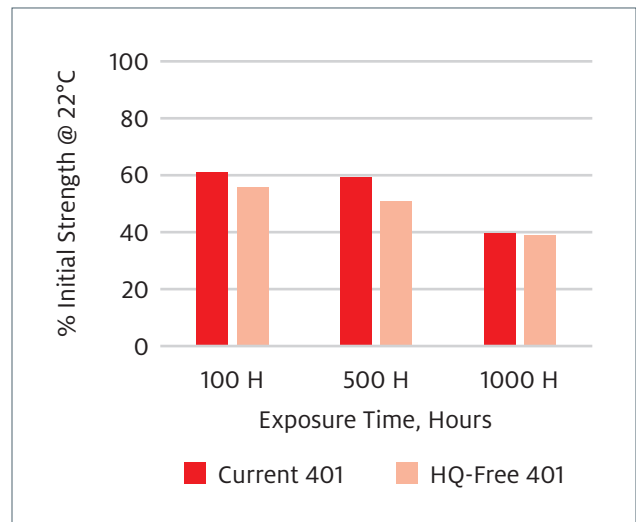
	CURRENT LOCTITE 401	NEW LOCTITE 401
ABS	7 (SF)	7 (SF)
PVC	7 (SF)	6.7 (SF)
PC	10.5 (SF)	10.1 (SF)

There is no change in initial bond strengths on grit-blasted mild steel and aluminum for LOCTITE 401:



2.3. Heat resistance up to 120°C

The superior heat resistance for LOCTITE 401 on GB-MS at 120°C is maintained:



3. CONCLUSION

LOCTITE 401 has been upgraded without any compromise to the quality and performance with respect to the LMS.

LOCTITE® 406™ UPGRADE – TEST RESULTS

1. LOCTITE MATERIAL SPECIFICATION

There is no change in LOCTITE Material Specification (LMS) for LOCTITE 406:

	NEW LOCTITE 406
Appearance (uncured)	Transparent, colorless to straw-colored liquid
Viscosity, Cone & Plate, mPa.s; Temp: 25°C; Shear Rate: 3,000 s ⁻¹	12–22 mPa.s
Tensile Strength, BunaN, 10 s RTC	≥ 6.9 N/mm ²

2. TEST RESULTS FOR LOCTITE 406

2.1. Fixture time vs. substrate

There is no change in fixture time for LOCTITE 406:

FIXTURE TIME (SECONDS)

	CURRENT LOCTITE 406	NEW LOCTITE 406
Steel	< 5	< 5
Aluminum	< 5	< 5
ABS	< 5	< 5
PVC	< 5	< 5
PC	< 5	< 5

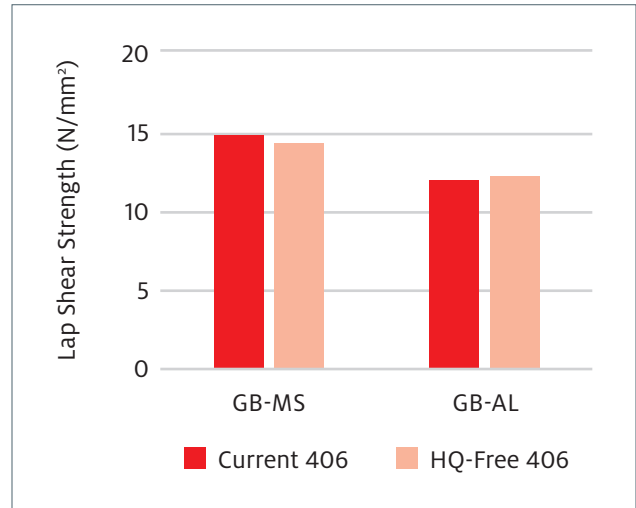
2.2. Initial bond strengths

The initial bond strength on plastics is unchanged. Substrate failure (SF) was observed on all plastics tested:

LAP SHEAR STRENGTH (N/mm²)

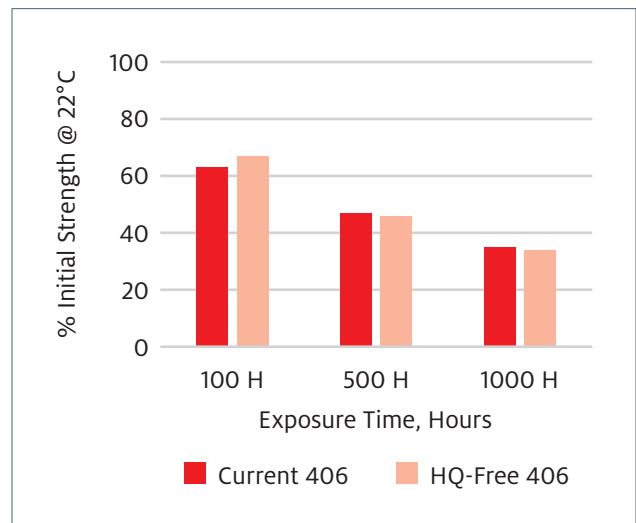
	CURRENT LOCTITE 406	NEW LOCTITE 406
ABS	6.9 (SF)	7 (SF)
PVC	7.4 (SF)	6.9 (SF)
PC	9.4 (SF)	12.7 (SF)

There is no change in initial bond strengths on grit-blasted mild steel and aluminum for LOCTITE 406:



2.3. Heat resistance up to 120°C

The superior heat resistance for LOCTITE 406 on GB-MS at 120°C is maintained:



3. CONCLUSION

LOCTITE 406 has been upgraded without any compromise to the quality and performance with respect to the LMS.

LOCTITE® 454™ UPGRADE – TEST RESULTS

1. LOCTITE MATERIAL SPECIFICATION

There is no change in LOCTITE Material Specification (LMS) for LOCTITE 454:

	NEW LOCTITE 454
Appearance (uncured)	Clear to slightly cloudy gel
Casson Viscosity, Cone & Plate, mPa.s; Temp: 25°C	150–450 mPa.s
Tensile Strength, BunaN, 30 s RTC	≥ 6.0 N/mm ²

2. TEST RESULTS FOR LOCTITE 454

2.1. Fixture time vs. substrate

There is no change in fixture time for LOCTITE 454:

FIXTURE TIME (SECONDS)

	CURRENT LOCTITE 454	NEW LOCTITE 454
Steel	20 to 30	30 to 45
Aluminum	5 to 10	5 to 10
ABS	< 5	< 5
PVC	30 to 45	30 to 45
PC	5 to 10	5 to 10
Paper	5 to 10	5 to 10

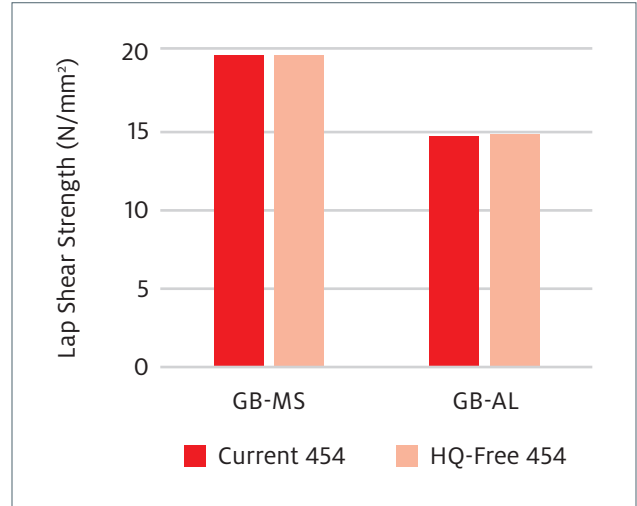
2.2. Initial bond strengths

The initial bond strength on plastics is unchanged. Substrate failure (SF) was observed on all plastics tested:

LAP SHEAR STRENGTH (N/mm²)

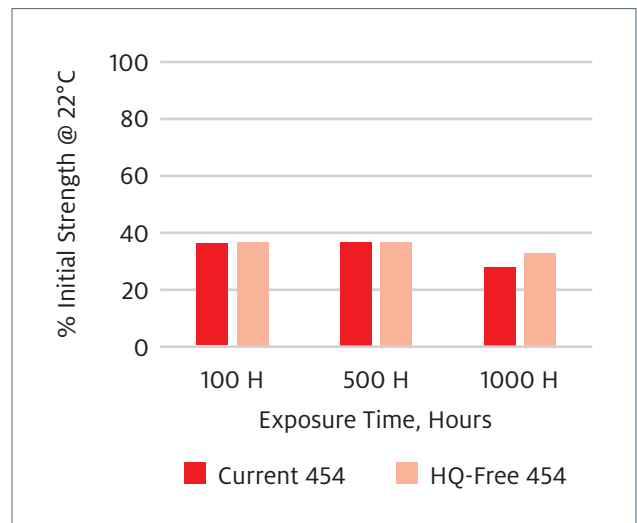
	CURRENT LOCTITE 454	NEW LOCTITE 454
ABS	7.4 (SF)	7.2 (SF)
PVC	5.3 (SF)	5.2 (SF)
PC	8.9 (SF)	8.8 (SF)

There is no change in initial bond strengths on grit-blasted mild steel and aluminum for LOCTITE 454:



2.3. Heat resistance up to 120°C

The superior heat resistance for LOCTITE 454 on GB-MS at 120°C is maintained:



3. CONCLUSION

LOCTITE 454 has been upgraded without any compromise to the quality and performance with respect to the LMS.

LOCTITE® 495™ UPGRADE – TEST RESULTS

1. LOCTITE MATERIAL SPECIFICATION

There is no change in LOCTITE Material Specification (LMS) for LOCTITE 495:

	NEW LOCTITE 495
Appearance (uncured)	Transparent, colorless to straw-colored liquid
Viscosity, Cone & Plate, mPa.s; Temp: 25°C; Shear Rate: 3,000 s ⁻¹	20–45 mPa.s
Tensile Strength, BunaN, 10 s RTC	≥ 6.0 N/mm ²

2. TEST RESULTS FOR LOCTITE 495

2.1. Fixture time vs. substrate

There is no change in fixture time for LOCTITE 495:

FIXTURE TIME (SECONDS)

	CURRENT LOCTITE 495	NEW LOCTITE 495
Steel	5 to 10	5 to 10
Aluminum	< 5	< 5
ABS	< 5	< 5
PVC	< 5	< 5
PC	< 5	< 5

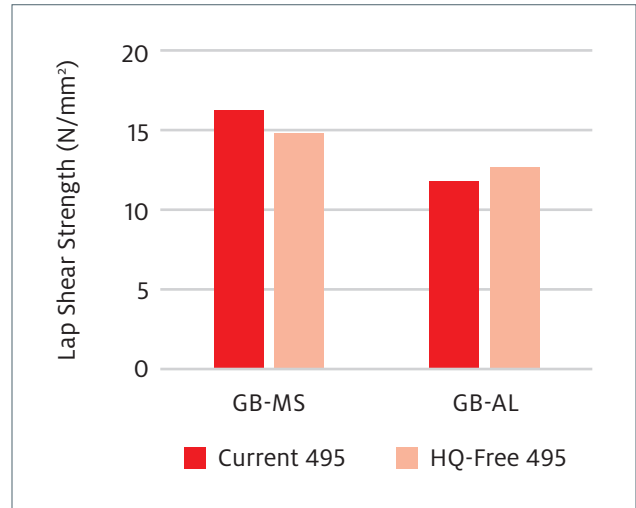
2.2. Initial bond strengths

The initial bond strength on plastics is unchanged. Substrate failure (SF) was observed on all plastics tested:

LAP SHEAR STRENGTH (N/mm²)

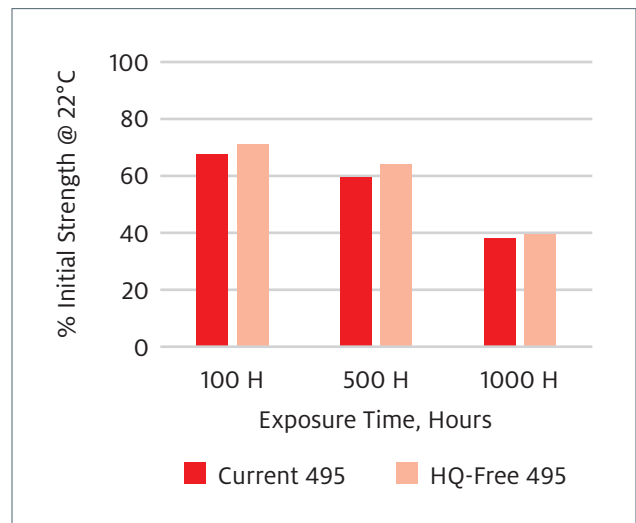
	CURRENT LOCTITE 495	NEW LOCTITE 495
ABS	6.7 (SF)	7.6 (SF)
PVC	8.9 (SF)	7.6 (SF)
PC	10.6 (SF)	10 (SF)

There is no change in initial bond strengths on grit-blasted mild steel and aluminum for LOCTITE 495:



2.3. Heat resistance up to 120°C

The superior heat resistance for LOCTITE 495 on GB-MS at 120°C is maintained:



3. CONCLUSION

LOCTITE 495 has been upgraded without any compromise to the quality and performance with respect to the LMS.

LOCTITE® 3090™ UPGRADE – TEST RESULTS

1. LOCTITE MATERIAL SPECIFICATION

There is no change in LOCTITE Material Specification (LMS) for LOCTITE 3090:

	NEW LOCTITE 3090–PART A
Appearance (uncured)	Clear to slightly cloudy gel
Casson Viscosity, Cone & Plate, mPa.s; Temp: 25°C	150–450 mPa.s
Tensile Strength, BunaN, 30 s RTC	≥ 6.0 N/mm ²

2. TEST RESULTS FOR LOCTITE 3090

2.1. Open time and fixture times

There is no change in open time or fixture time for LOCTITE 3090:

OPEN & FIXTURE TIME (SECONDS)

	CURRENT LOCTITE 3090	NEW LOCTITE 3090
Open Time(s)	90 to 180	90 to 180
Fixture Time on Al(s)	< 10	< 10
Fixture Time on Al at 1 mm gap(s)	90 to 120	90 to 120

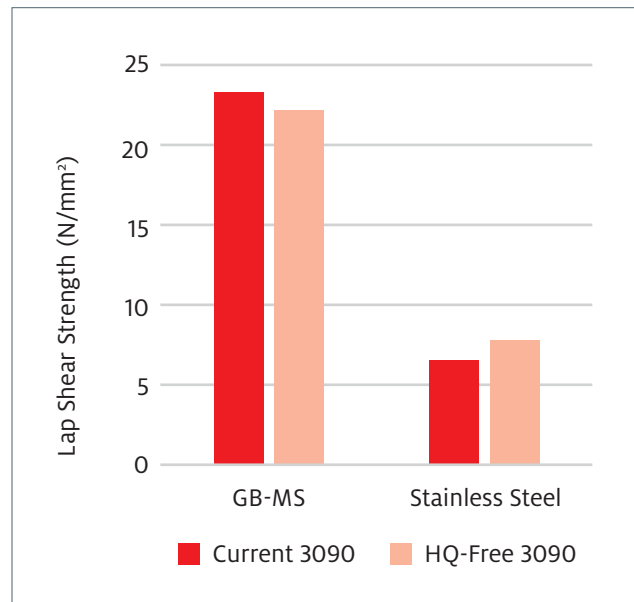
2.2. Initial bond strengths

The initial bond strength on polycarbonate is unchanged. Substrate failure (SF) was observed for both formulations:

LAP SHEAR STRENGTH (N/mm²)

	CURRENT LOCTITE 3090	NEW LOCTITE 3090
PC	10.8 (SF)	10.6 (SF)

There is no change in initial bond strengths on grit-blasted metals for LOCTITE 3090:



3. CONCLUSION

LOCTITE 3090 has been upgraded without any compromise to the quality and performance with respect to the LMS.

LOCTITE® 3092™ UPGRADE – TEST RESULTS

1. LOCTITE MATERIAL SPECIFICATION

There is no change in LOCTITE Material Specification (LMS) for LOCTITE 3092:

	NEW LOCTITE 3092–PART A
Appearance (uncured)	Clear to slightly cloudy gel
Casson Viscosity, Cone & Plate, mPa.s; Temp: 25°C	150–450 mPa.s
Tensile Strength, BunaN, 30 s RTC	≥ 6.0 N/mm ²

2. TEST RESULTS FOR LOCTITE 3092

2.1. Open time and fixture times

There is no change in open time or fixture time for LOCTITE 3092:

OPEN & FIXTURE TIME (SECONDS)

	CURRENT LOCTITE 3092	NEW LOCTITE 3092
Open Time(s)	240 to 390	240 to 390
Fixture Time on Al(s)	10 to 20	10 to 20
Fixture Time on Al at 1 mm gap(s)	270 to 300	270 to 300

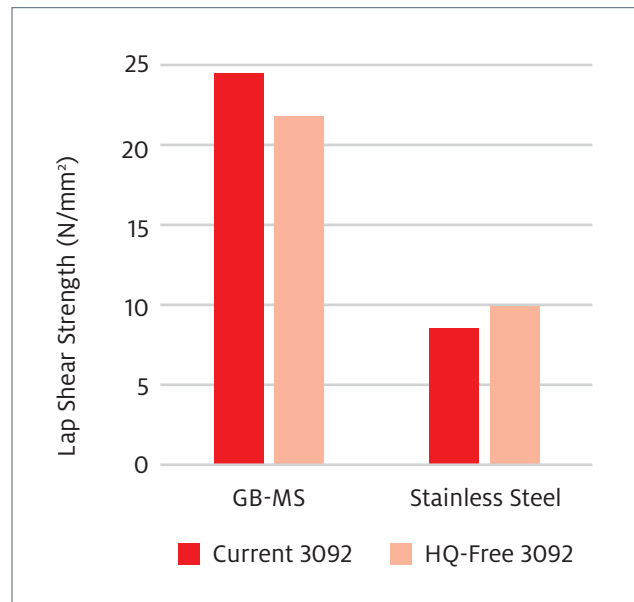
2.2. Initial bond strengths

The initial bond strength on polycarbonate is unchanged. Substrate failure (SF) was observed for both formulations:

LAP SHEAR STRENGTH (N/mm²)

	CURRENT LOCTITE 3092	NEW LOCTITE 3092
PC	9.9 (SF)	9.9 (SF)

There is no change in initial bond strengths on grit-blasted metals for LOCTITE 3092:



3. CONCLUSION

LOCTITE 3092 has been upgraded without any compromise to the quality and performance with respect to the LMS.

Note:

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