



TECHNICAL INFORMATION

HARDMAN® Extra-Fast Setting Epoxy DOUBLE/BUBBLE® Red Package #04001

PRODUCT DESCRIPTION

HARDMAN Fast-Setting Epoxy is an extra fast setting, two-component, room temperature curing epoxy adhesive. The system will cure at as low as -18 °C (0 °F). It has a convenient mix ratio, excellent cohesive strength and bonds to most substrates including metal, wood, concrete, ceramics and many plastics. It is recommended for fast patching, fixturing and other repairs requiring quick handling strength.

HARDMAN Fast-Setting Epoxy is an excellent, general-purpose adhesive. It is recommended for the following substrates:

<u>Metal</u>	<u>Plastic</u>	<u>Other</u>
Carbon Steel	Epoxy	Stone
Stainless Steel		Wood
Aluminum		Glass
		China
		Leather

TYPICAL USES

HARDMAN Fast-Setting Epoxy can be used to repair tools, auto parts, electrical and electronic components, furniture and other applications that require a fast-setting adhesive.

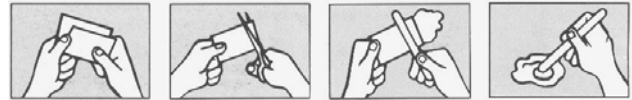
PACKAGING

The DOUBLE/BUBBLE package is a handy, dual-pouch, one-shot, job-size packaging concept. It reduces the waste typically associated with the use of larger quantities of two-component adhesives. This unique packaging ensures that DOUBLE/BUBBLE adhesives are always factory fresh and accurately portioned for optimum adhesive performance.

HARDMAN Fast-Setting Epoxy is also available in poly bottles, 1-gallon cans, 5-gallon pails and 55-gallon drums.

HOW TO USE

Surface must be clean and dry before application. Remove all chemicals, dirt, wax and oil.



FOLD SNIP SQUEEZE MIX/APPLY

Fold the DOUBLE/BUBBLE package along the center seal, snip the end, squeeze out the contents, mix thoroughly and apply.

TYPICAL WORKING PROPERTIES

	<u>Part A</u>	<u>Part B</u>	<u>Mixed</u>
Color	Amber	Amber	Amber
Viscosity @ 25 °C,cps	55,000	10,000	40,000
Weight per Gallon, lbs.	10	9.4	9.7
Specific Gravity @ 25 °C	1.2	1.13	1.16
Flash Point, PMCC, °C	157	132	---
Work Time, minutes	---	---	3
Handling Strength, minutes	---	---	15 - 30
Shelf Life, months	24	24	---

TYPICAL CURED PHYSICAL PROPERTIES

(Tested at 25 °C unless otherwise indicated)

<u>Test</u>	<u>Results</u>
Hardness, Shore D	80
Maximum Service Temp.	82 °C (180 °F)

The Lap Shear and T-Peel strength of acid-etched aluminum to aluminum is shown below:

Lap Shear Strength (various cure schedules)

Cure Schedule @ 25 °C	15 min.	30 min.	60 min.
Shear Strength, psi	150	1,000	1,500

Lap Shear Strength (cure schedule 24 hrs. @ 25 °C)

Test Temperature	-40 °C	25 °C	38 °C	66 °C	82 °C	93 °C	149 °C
Shear Strength, psi	1,695	3,000	2,400	1,100	655	300	245

T-Peel Strength (cure schedule 24 hrs. @ 25 °C)

Test Temperature	-40 °C	25 °C	82 °C
Peel Strength, pli	1.5	1.8	2.5



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STORAGE AND HANDLING

Store DOUBLE/BUBBLE adhesives at room temperature in a dry environment. Extreme low temperatures may cause crystallization. Extreme high temperatures may degrade the properties.

A wide variety of cleaning solutions are available for cured and uncured epoxies and polyurethanes

SAFETY

These materials are intended for commercial and industrial use only, and the practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

Although the system contains low volatility materials, care should be taken in handling. Use adequate ventilation in the work area.

These materials may cause dermatitis in susceptible individuals. Keep off skin and out of eyes. In case of accidental skin contact, wash thoroughly with soap and water. In case of eye contact, flush eyes thoroughly with water and consult a physician immediately.

Refer to Material Safety Data Sheet for additional information.

ADDITIONAL INFORMATION

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NOTE

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