



TECHNICAL INFORMATION

HARDMAN® Extra-Fast Setting Durable Epoxy DOUBLE/BUBBLE® Silver Package #04009

PRODUCT DESCRIPTION

HARDMAN DOUBLE/BUBBLE Silver Durable Epoxy is an extra fast setting, two-component, room temperature curing epoxy adhesive. Compared to standard fast setting epoxies, DOUBLE BUBBLE Silver Durable Epoxy has improved humidity and moisture resistance and lower service temperature. The system will cure at as low as -30 °C (-22 °F). Additional improvements over standard fast setting epoxies include higher toughness and impact resistance. It has 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.

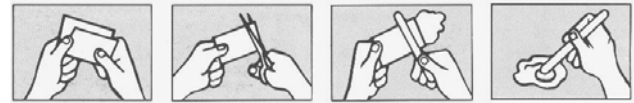
PACKAGING

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 Durable 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

	Part A	Part B	Mixed
Color	Amber	Amber	Amber
Viscosity @ 25 °C, cps.	8,000	5,000	7,000
Weight per Gallon, lbs.	9.8	8.6	9.2
Specific Gravity @ 25 °C	1.17	1.03	1.10
Work Time, minutes	---	---	5
Handling Strength, minutes	---	---	45-60
Shelf Life, months	24	24	---

TYPICAL CURED PHYSICAL PROPERTIES

(Tested at 25 °C unless otherwise indicated)

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

Lap Shear Strength

Acid-etched Al/Al - various cure schedules

Cure Schedule @ 25 °C	60 min.	24 hr.
Shear Strength, psi	1,200	4,200

Acid-etched Al/Al - cure schedule 7 days @ 25 °C

Test Temperature, °C	-40	25	66	82	93
Shear Strength, psi	2,650	4,500	850	620	400

→ After 30 day exposure in water:

Test Temperature, °C	49
Shear Strength, psi	3,200

T-Peel Strength

Acid-etched Al/Al - cure schedule 7 days @ 25 °C

Test Temperature, °C	25
Peel Strength, pli	2.0



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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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