



TECHNICAL INFORMATION

EPOWELD® 3243 Epoxy Adhesive System

PRODUCT DESCRIPTION

EPOWELD 3243 is a two component, room temperature cure epoxy adhesive with excellent cohesive strength, pull out strength and torque resistance. The system offers a convenient mix ratio and is recommended for bonding golf clubs, striking tools, grinding wheel hubs, metal doors and windows. This system is effective over an operating temperature range of -40° to 200 °F (-40 to 93.3° C)

EPOWELD 3243 has been an industry standard for over 20 years for golf club head to shaft bonding. EPOWELD 8200 is a modified form of this system and is recommended for bonding thermoplastics such as ABS and polycarbonates. EPOWELD 3243 A-3 is a black color version.

HOW TO USE

The individual components containing fillers should be stirred or agitated without introducing excessive air before use to ensure that all fillers are properly dispersed. To obtain the best cured properties, accurate proportioning and thorough mixing are essential.

MIXING AND CURING SCHEDULE

Ratio	Part A	Part B
By weight	100	72
By volume	100	100

The cure schedule is dependent upon the temperature. The recommended cure schedule will vary with the desired properties. The recommended schedule to achieve the typical properties is shown below:

7 days at 25 °C (77 °F) or 2 hours at 66 °C (150 °F) or 10 minutes at 149 °C (300 °F).

TYPICAL UNCURED PROPERTIES

	Part A	Part B	Mixed
Color	Off White	Amber	Ivory
Viscosity @ 25 °C,cps	24,000	12,000	15,000
Weight per Gallon, lbs.	11.5	8.1	9.8
Specific Gravity @ 25 °C	1.38	0.97	1.17
Gel time, minutes			
100 gm mass @ 25 °C	---	---	152
Filler Type	Non-Abrasive	None	Non-Abrasive
Shelf Life (in separate sealed containers), months	12	12	---

TYPICAL CURED PROPERTIES

(Tested at 25 °C unless otherwise indicated)

Test	Result
Hardness, Shore D	85
Tensile Strength, psi	7,310
Tensile Modulus, psi	412,100
Flexural Strength, psi	10,540
Flexural Modulus	381,600
Elongation, %	<10
Compressive Strength, psi	9,460
Linear Shrinkage, in./in.	0.0004
Impact Strength, ft. – lbs.	15

Lap Shear Strength (Al/Al, 2024–T3 acid etched)

Various cure schedules				
Cure Schedule @ 25 °C	18 hrs.	24 hrs.	2 weeks	
Shear Strength, psi	3,500	3,472	3,360	

Lap Shear Strength (Al/Al, 2024–T3 acid etched)

Cure schedule 7 days @ 25 °C				
Test Temperature, °C	-40	25	82	149
Shear Strength, psi	3,037	3,330	990	274

T-Peel Strength (Al/Al, 2024–T3 acid etched)

Cure schedule 7 days @ 25 °C			
Test Temperature, °C	-40	25	82
Peel Strength, pli	3.4	3.6	3.3

GOLF CLUB PULL OUT STRENGTH

Steel shafts were abraded to remove the chrome finish, followed by solvent wipe using 1,1,1- Trichloroethane. Adhesive was applied to both bonding surfaces and cured 20 minutes at 80 °C plus 7 days at 25 °C before testing.

	Result
Pull out strength @ 25 °C, lbs.	5,380

TYPICAL CHEMICAL RESISTANCE PROPERTIES

(Tested at 25 °C unless otherwise indicated)

Total Immersion In:	Immersion Time, Days	% Weight Gain (Loss)	Comments
Petroleum sour crude	1	0.05	Hardness
containing > 5%	7	0.09	unchanged,
Hydrogen Sulfide	30	0.23	no swelling or cracking of the test specimen.

STORAGE AND HANDLING

These materials should be stored in a dry environment within a temperature range of 16 °C to 27 °C (60 °F to 80 °F). Extremes of temperature beyond this range may result in crystallization or polymerization of the materials. Introduction of a nitrogen blanket into the containers before closing will improve the storage life of the products.

A wide variety of cleaning solutions are available for cured and uncured epoxies and polyurethanes. For more information on proper recommendations and procedures, contact the Technical Department.

SAFETY

These materials are intended for 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, nevertheless, care should be taken in handling. Adequate ventilation of work place and ovens is essential.

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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