

METRIC

A-A-59785

9 DECEMBER 2005

COMMERCIAL ITEM DESCRIPTION

EPOXY COATING KIT (EPOXY RESIN SYSTEM)

The General Services Administration has authorized the use of this Commercial Item Description by all federal agencies.

1. **SCOPE.** This commercial item description (CID) covers a two part epoxy resin system suitable to be used in the production of advanced composite materials.

2. **SALIENT CHARACTERISTICS.**

2.1 **General.** The Epoxy Resin System is a two component resin system for use in the production of advanced composites. The two components include the epoxy resin and a hardener used for curing the final product. When the two parts (resin and hardener) mix together, they react, and join together. The advanced composite manufacturing infusion processes in which the described Epoxy Resin System could be used include Resin Transfer Molding (RTM), Vacuum Assisted Resin Transfer Molding (VARTM), Seemans Composite Resin Injection Molding Process (SCRIMPTM), prepreg hand lay-up, and/or other infusion processes. The manufacturer's formulated mix ratio, measuring out by weight and volume, shall be followed to ensure the complete reaction of the resin and hardener.

2.1.1 **Performance Requirement.** Unless otherwise noted, the epoxy resin system shall meet or exceed the performance criteria in Table I. when tested at 77°F (25°C).

TABLE I. Properties

Property	Criteria	ASTM Test Method	Value
Specific Gravity (Approximate)	Resin	D-792	1.1
	Hardener		0.94
Viscosity, cP (or less)	Resin	D-2393	1200
	Hardener		100
	Mixed		500 - 700
Gel time, minutes	100 gm	D-2471	480 - 580
Temperature (Max.)	300°F (149°C) after heated postcure		

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any other data which may improve this document should be sent by letter to: US Army Tank-automotive and Armaments Command, ATTN: AMSRD-TAR-E/268, 6501 E. 11 Mile Road Warren, MI 48397-5000.

AMSC N/A

FSC 8010

Distribution Statement A. Approved for public release; distribution is unlimited.

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TABLE II. Neat System

Property	ASTM Test Method	Value
Specific Gravity (Approximate)	D-792	1.06
Hardness (Shore D) (Approximate)	D – 2240	89
Ultimate Tensile Strength, psi (Approximate)	D – 638	6921
Tensile Modulus, psi (Approximate)		366555
% Elongation (Approximate)		2.5
Tg by DMA, E' onset, dry, °F (°C) (Minimum)	D - 4065	307 (153)
Tg by DMA, E' onset, wet, °F (°C) (Minimum)	D - 4065	270 (132)

NOTES:

1. Tested @77°F (25°C) unless otherwise noted.
2. All properties are of neat product form (non-composite). Similar cure cycle and temperature, mixing ratio, and homogeneity of mixing have to be used for the test coupons and product manufacturing.
3. **REGULATORY REQUIREMENT.** The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).
4. **PRODUCT CONFORMANCE.**
 - 4.1 Product Conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards and quality assurance practices and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.
 - 4.2 Market Acceptability. The product shall be a standard commercial item or a modified commercial item to minimize design and engineering risk. A commercial item is required to ensure serviceability, reliability and quality of materials. Bid samples may be required for the Epoxy Resin System to ensure product quality.
5. **PACKAGING.** Preservation, packaging, packing and marking shall be specified in the contract of purchase order.

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6. NOTES

6.1 Source of Documents.

6.1.1 The Code of Federal Regulations (CFR) may be obtained from the US Government Printing Office, 732 Capitol Street NW, Washington, DC 20401 or at their website <http://www.gpoaccess.gov/cfr/index.html>

6.1.2 ASTM Standards are available from the ASTM International, 100 Bar Harbor Drive, West Conshohocken, PA 19428-2959 or from their website at <http://www.astm.org>

6.2 Ordering data. The contract or order should specify the following:

- a. CID Document Number
- b. Product conformance provisions
- c. Packaging Requirements

6.3 Products known to meet the CID.

- a. RenShape Solutions Resinfusion™
8605 Epoxy Resin System
Available from: Huntsman Advanced Materials
4917 Dawn Avenue, East Lansing, MI 48823.

6.4 Key words.

Epoxy
Resin

MILITARY INTERESTS:

CIVIL AGENCY COORDINATING ACTIVITY:
GSA - FSS

Custodians

Army – AT
Navy – AS
Air Force – 11

Preparing Activity:
Army – AT

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Review Activities

Army – MI, MR,
Navy – CG, SH
Air Force – 84, 99