

DIGLYCIDYL ESTER RESIN

1. SCOPE:

- 1.1 Form: This specification covers a prepolymer in the form of a low molecular weight aromatic diglycidyl ester resin.
- 1.2 Application: Primarily for use in manufacture of composite matrices.
- 1.3 Safety - Hazardous Materials: While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods
AMS 2825 - Material Safety Data Sheets

SAE Technical Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

AMS documents are protected under United States and international copyright laws. Reproduction of these documents by any means is strictly prohibited without the written consent of the publisher.

- 2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D1652 - Epoxy Content of Epoxy Resins

ASTM D1726 - Hydrolyzable Chloride Content of Liquid Epoxy Resins

ASTM D1763 - Epoxy Resins

ASTM D2393 - Viscosity of Epoxy Resins and Related Components

- 2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

- 3.1 Material: Shall be a low molecular weight, aromatic diglycidyl ester resin partially derived from phthalic anhydride reacted with epichlorohydrin to form first diglycidyl phthalate and subsequently a polyepoxide.

- 3.2 Impurities: Resin shall be substantially free of foreign matter and shall contain not more than 1% hydrolyzable chlorine, determined in accordance with ASTM D1726.

- 3.3 Properties: Resin shall conform to the following requirements, determined in accordance with specified ASTM methods:

3.3.1 Epoxy Content (equiv. per 100 g) 0.556 - 0.667 ASTM D1652

3.3.2 Viscosity at 25°C (77°F), cps 600 - 1800 ASTM D2393

- 3.4 Quality: The resin, as received by purchaser, shall be uniform in quality and condition, clean, and free from foreign materials and from contaminants detrimental to usage of the resin.

4. QUALITY ASSURANCE PROVISIONS:

- 4.1 Responsibility for Inspection: The vendor of the resin shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.5. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the resin conforms to the requirements of this specification.

- 4.2 Classification of Tests: Tests to determine conformance to all technical requirements of this specification are classified as acceptance tests and as preproduction tests and shall be performed prior to or on the initial shipment of resin to a purchaser, on each lot, when a change in material, processing, or both requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.