

EXTEND THE LIFE OF COMPOSITE ANTI-BALLISTIC ARMOR

ARA DEFEND® 50100 Resin System offers improved damage resistance and up to a 30% increase in Tg, extending armor system life.

Composite anti-ballistic armor is key to protecting law enforcement and military personnel. With traditional composite armor, exposure to higher temperatures degrades armor's performance. Traditional composite armor resins have shorter processing times that present manufacturing challenges, particularly when producing larger panels.

ARA DEFEND® 50100 Resin System is engineered to improve damage tolerance and multi-hit performance. This product provides a 35% increase in G1C and 6% K1C. Combined with the 30% improvement in Tg, ARA DEFEND® 50100 Resin System delivers superior durability and performance at higher temperatures, resulting in extended armor life cycle and protection.

ARA DEFEND® 50100 Resin System is a two-component, low-viscosity epoxy resin system with good latency. This allows for longer working times for better infusion of larger panels via Vacuum Assisted Resin Transfer Molding (VARTM), Resin Transfer Molding (RTM), and Dynamic Fluid Compression Molding (DFCM). This resin system is designed to cure at relatively low temperatures allowing for easier processing and flexibility in large-scale production. ARA DEFEND® 50100 Resin System delivers state-of-the-art product and manufacturing performance.



MADE POSSIBLE

WHAT MAKES ARA DEFEND® 50100 RESIN SYSTEM DIFFERENT?

ARA DEFEND® 50100 Resin System is a two-component, highly heat-resistant resin system with superior toughness, designed with a long open time for direct processing applications, such as VARTM, RTM, and DFCM.

PROPERTIES & PERFORMANCE

130°C/
266°F

Glass transition
temperature (Tg)

↑ 30%

Improvement

FRACTURE TOUGHNESS:

K1C 1.8

↑ 6%

Improvement

G1C 1629

↑ 35%

Improvement

Density (mixed): 1.15 g/cc

Cure Schedule: 180 mins 121°C/250°F

Shelf life: 24 months

ILSS: 5.8 ksi (AGY S-2 Glass®)

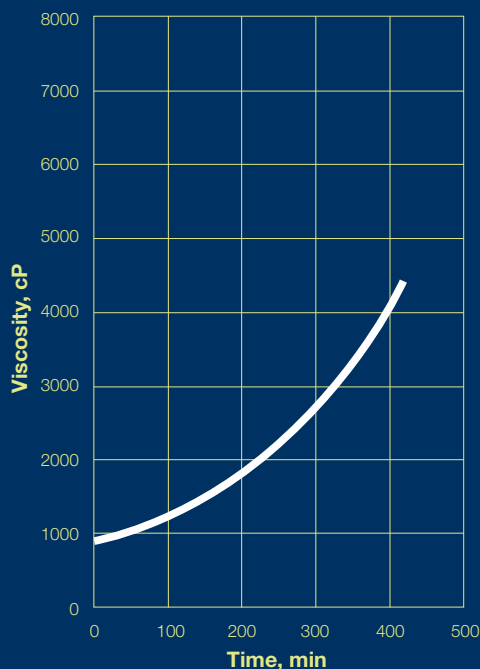
INCREASED PRODUCTIVITY



Long working time equals
increased productivity.

Viscosity: Initial mix viscosity is
~1,000 cP (under 5,000 cP after
400 mins)

Isothermal Viscosity at 25°C



Legal information

All trademarks mentioned are either property of or licensed to Huntsman Corporation or an affiliate thereof in one or more, but not all, countries. Sales of the product described herein ("Product") are subject to the general terms and conditions of sale of either Huntsman Advanced Materials LLC, or its appropriate affiliate including without limitation Huntsman Advanced Materials (Europe) BVBA, Huntsman Advanced Materials Americas Inc., or Huntsman Advanced Materials (Hong Kong) Ltd. or Huntsman Advanced Materials (Guangdong) Ltd. ("Huntsman"). The following supersedes Buyer's documents. While the information and recommendations included in this publication are, to the best of Huntsman's knowledge, accurate as of the date of publication, NOTHING CONTAINED HEREIN IS TO BE CONSTRUED AS A REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS, OR WARRANTIES AS TO QUALITY OR CORRESPONDENCE WITH PRIOR DESCRIPTION OR SAMPLE, AND THE BUYER ASSUMES ALL RISK AND LIABILITY WHATSOEVER RESULTING FROM THE USE OF SUCH PRODUCT, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES. No statements or recommendations made herein are to be construed as a representation about the suitability of any Product for the particular application of Buyer or user or as an inducement to infringe any patent or other intellectual property right. Data and results are based on controlled conditions and/or lab work. Buyer is responsible to determine the applicability of such information and recommendations and the suitability of any Product for its own particular purpose, and to ensure that its intended use of the Product does not infringe any intellectual property rights. The Product may be or become hazardous. Buyer should (i) obtain Material Safety Data Sheets and Technical Data Sheets from Huntsman containing detailed information on Product hazards and toxicity, together with proper shipping, handling and storage procedures for the Product, (ii) take all steps necessary to adequately inform, warn and familiarize its employees, agents, direct and indirect customers and contractors who may handle or be exposed to the Product of all hazards pertaining to and proper procedures for safe handling, use, storage, transportation and disposal of and exposure to the Product and (iii) comply with and ensure that its employees, agents, direct and indirect customers and contractors who may handle or be exposed to the Product comply with all safety information contained in the applicable Material Safety Data Sheets, Technical Data Sheets or other instructions provided by Huntsman and all applicable laws, regulations and standards relating to the handling, use, storage, distribution and disposal of and exposure to the Product. Please note that products may differ from country to country. If you have any queries, kindly contact your local Huntsman representative.

ARA DEFEND® is a trademark of Huntsman Corporation or an affiliate thereof in one or more, but not all, countries.
© 2021 Huntsman Corporation. All rights reserved.



Americas

Huntsman Advanced Materials
Americas Inc.
10003 Woodloch Forest Drive
The Woodlands, TX 77380, USA
Tel.: +1 888 564 9318
Fax: +1 281 719 4047