GENERAL

araldite ly 564 aradur 22962 parscomposite

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Introduction

In the world of industrial bonding and composite fabrication, choosing the right adhesive or composite material can make the difference between a durable, high performance product and a costly failure. Among the many solutions available, three names stand out for their unique properties and specialized applications: **Araldite LY 564**, **Aradur 22962**, and **ParsComposite**. Whether you are a mechanical engineer, a product developer, or a maintenance professional, understanding how these materials work, where they excel, and how they compare will help you make informed decisions that enhance performance and reduce lifecycle costs.

What Is Araldite LY 564?

Overview

Araldite LY 564 is a high performance two component epoxy resin system produced by Huntsman Advanced Materials. Designed for demanding industrial applications, it offers exceptional mechanical strength, excellent adhesion to a wide range of substrates, and superior resistance to heat, chemicals, and wear. Its fast cure time and low viscosity make it ideal for both hand labeled and automated processes.

Key Properties

- Cure Time: 4–6 minutes at 25 /°C, with a full cure in 24 /hours.
- Temperature Range: Up to 200 /°C continuous service, with a glass transition temperature (Tg) of 140 /°C.
- Mechanical Strength: Tensile strength of 80 /MPa and impact resistance of 12 /kJ/m².
- Chemical Resistance: Excellent resistance to solvents, acids, and bases.
- Electrical Properties: Low dielectric constant (;R ò$, ó2ã ’ æB †–v, –ç7VÆ F–öâ &W6—7F æ6P.

Applications

Araldite LY 564 is widely used in aerospace, automotive, and electronics manufacturing. Typical applications include:

- Bonding of metal, ceramic, and composite parts in structural assemblies.
- Encapsulation of electronic components and PCB interconnects.
- Repair of damaged composite structures in aircraft and wind turbine blades.
- Adhesive bonding of high temperature components in power generation.

What Is Aradur 22962?

Overview

Aradur 22962 is a premium epoxy resin formulated by Aradur for high performance composites. It is engineered to provide outstanding mechanical properties, superior thermal stability, and excellent compatibility with a variety of reinforcement fibers. The resin is typically paired with Aradur’s proprietary hardeners to achieve optimal performance.

Key Properties

- Cure Time: 10–12 minutes at 25 /°C, with a full cure in 48 /hours.

- Temperature Range: Continuous service up to 260 /°C.
- Tg: 155 /°C, offering a high thermal margin for demanding environments.
- Mechanical Strength: Tensile strength of 95 /MPa and flexural strength of 120 /MPa.
- Impact Resistance: 18 /kJ/m², suitable for high impact applications.
- Chemical Resistance: Outstanding resistance to hydrocarbons, fuels, and many solvents.

Applications

Aradur 22962 is a go to resin for aerospace composites, marine structures, and high performance sporting goods. Typical uses include:

- Manufacture of carbon fiber reinforced polymer (CFRP) panels and skins.
- Construction of high strength marine hulls and deck structures.
- Production of lightweight, high impact sporting equipment such as bicycles and wind surf boards.
- Repair and reinforcement of composite parts in automotive and rail applications.

What Is ParsComposite?

Overview

ParsComposite is a line of advanced composite materials that combine high modulus fibers with a specially engineered resin matrix. Developed by Pars Industries, this product line focuses on delivering lightweight, high strength solutions for structural components in the aerospace, automotive, and renewable energy sectors.

Key Properties

- Fiber Composition: 100 /% carbon or glass fibers with a modulus of 70 /GPa.
- Matrix Resin: Proprietary epoxy resin with a Tg of 160 /°C.
- Density: 1.6 /g/cm³, providing a high strength to weight ratio.
- Mechanical Strength: Tensile strength up to 3.5 /GPa and flexural strength of 2.5 /GPa.
- Impact Resistance: 25 /kJ/m², suitable for crash worthy structures.
- Corrosion Resistance: Excellent resistance to marine environments and UV exposure.

Applications

ParsComposite's high performance laminates are employed in a range of demanding fields:

- Construction of aircraft fuselage panels and wing spars.
- Manufacture of high strength automotive body panels and chassis components.
- Fabrication of wind turbine blades and nacelle structures.
- Development of high performance sporting goods such as racing bicycles and surfboards.

Comparing the Three Materials

Performance Overview

Below is a concise comparison of the key attributes that differentiate Araldite LY 564, Aradur 22962, and ParsComposite. While each material excels in its own niche, understanding these distinctions can help you select the best solution for your project.

Feature	Araldite LY 564	Aradur 22962	ParsComposite
Cure Time (25 /°C)	4–6 /min (partial), 24 /h full	10–12 /min (partial), 48 /h full	Not applicable (pre laminated)
Maximum Service Temperature	200 /°C	260 /°C	200 /°C
Glass Transition Temperature (Tg)	140 /°C	155 /°C	160 /°C
Tensile Strength	80 /MPa	95 /MPa	3.5 /GPa (laminate)
Impact Resistance	12 /kJ/m²	18 /kJ/m²	25 /kJ/m²
Primary Use	Bonding & encapsulation	Composite manufacturing & repair	Structural laminates

When to Choose Which Material?

• **Araldite LY 564:**Ideal for rapid bonding tasks where a moderate temperature range and high chemical resistance are required. Excellent for electronics and metal to metal bonding.

• **Aradur 22962:**Best suited for high temperature composite manufacturing, especially in aerospace and marine environments where superior mechanical strength and chemical resistance are critical.

• **ParsComposite:**The choice for lightweight, high strength structural components. Its pre laminated format saves time and ensures consistent fiber orientation, making it perfect for large scale production.

Application Guidelines

Surface Preparation

Regardless of the adhesive or composite, proper surface preparation is vital for achieving optimal bond strength:

- Clean surfaces with isopropyl alcohol or a solvent recommended by the manufacturer.
- Remove all oils, greases, and contaminants using a lint free cloth.
- For metal substrates, consider mild abrasion with fine grit sandpaper to increase surface roughness.
- Ensure substrates are dry before applying the adhesive or laying the composite.

Mixing Ratios and Techniques

Both Araldite LY 564 and Aradur 22962 are two component systems. Follow these steps for accurate mixing:

1. Measure the resin and hardener precisely using calibrated scales or syringes.
2. Mix slowly to avoid introducing air bubbles.
3. Stir for at least 30 /seconds to ensure homogeneity.
4. Apply immediately, as the pot life is limited (Araldite LY 564: ~8 /min; Aradur 22962: ~12 /min).

Application Techniques

• **Araldite LY 564:**Use a brush or syringe for small areas; a roller or spray nozzle works well for larger surfaces. Apply a thin, uniform layer to prevent excess viscosity.

• **Aradur 22962:**Ideal for vacuum bagging and resin infusion processes. Use a vacuum bag to ensure even

pressure distribution across the composite lay up.

• **ParsComposite:**Lay the pre laminated sheets onto the substrate, applying a thin layer of compatible resin or adhesive if needed. Use a roller or hand lay up tools to remove air pockets.

Safety and Handling

All high performance adhesives and composites contain chemicals that require careful handling. Below are general safety guidelines:

- Wear nitrile gloves, safety goggles, and a respirator if working in poorly ventilated areas.
- Store resins and hardeners in a cool, dry place away from direct sunlight.
- Keep containers tightly sealed when not in use to prevent evaporation.
- Dispose of waste according to local regulations and manufacturer instructions.
- Follow the Material Safety Data Sheet (MSDS) for each product for detailed hazard information.

Maintenance and Longevity

Proper maintenance extends the life of bonded or composite structures. Here are key practices:

- Inspect joints and composite panels regularly for signs of delamination or cracking.
- Clean surfaces with non abrasive cloths; avoid harsh chemicals that could degrade the resin.
- Re bond or repair damaged areas promptly using the same material to maintain consistency.
- For high temperature applications, monitor thermal cycling to avoid fatigue.

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