

ZNT-*fuse*[™] Adhesive Paste Zyvex Nano-Engineered Composite

Technical Data Sheet

December 2015

Description

ZNT-*fuse*[™] Adhesive Paste is a carbon nanotube enhanced two-part epoxy adhesive thixotropic paste.

Used for bonding or filling, ZNT-*fuse* Paste is ideal for many metals, woods, masonry products, and some plastics and rubbers. ZNT-*fuse* Paste was also designed to bond Zyvex Technologies' Arovex[®] composites.

Packaging

ZNT-*fuse* Paste is commercially available in 1-gallon (~20 lb) kits, and cartridge kits of 50 ml. Other volumes available on request.

Features

- Excellent flexibility
- Very high T-peel strengths
- Very high tensile shear strengths
- Non-drop, non-sag on vertical surfaces with 0.5" bead

Mechanical Properties

Table 1a | Shear Strength Characteristics – ZNT-*fuse* Adhesive with FPL Etched 2024-T3 Aluminum, 5 Mil

Cure Cycle	Test Temp	Shear Strength
12 hrs at Room Temp Plus 2 hours at 176 °F	-11 °F	4300 psi
12 hrs at Room Temp Plus 2 hours at 176 °F	72 °F	4100 psi
12 hrs at Room Temp Plus 2 hours at 176 °F	160 °F	3150 psi
12 hrs at Room Temp Plus 2 hours at 176 °F	180 °F	2800 psi
12 hrs at Room Temp Plus 2 hours at 176 °F	200 °F	2600 psi
1 day at Room Temp	72 °F	1500 psi
3 days at Room Temp	72 °F	3550 psi
5 days at Room Temp	72 °F	3900 psi
7 days at Room Temp	72 °F	4000 psi

Table 2b | Shear Strength Characteristics – ZNT-*fuse* Adhesive with Cold Rolled Steel, 10 Mil bond-line

Cure Cycle	Test Temp	Shear Strength
12 hrs at Room Temp Plus 2 hours at 176 °F	-11 °F	3200 psi
12 hrs at Room Temp Plus 2 hours at 176 °F	72 °F	2800 psi
12 hrs at Room Temp Plus 2 hours at 176 °F	160 °F	1850 psi
12 hrs at Room Temp Plus 2 hours at 176 °F	180 °F	1400 psi
12 hrs at Room Temp Plus 2 hours at 176 °F	200 °F	1200 psi
1 day at Room Temp	72 °F	1250 psi
3 days at Room Temp	72 °F	2600 psi
5 days at Room Temp	72 °F	2700 psi
7 days at Room Temp	72 °F	2700 psi

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Table 3 | Shear Strength Characteristics – ZNT-*fuse* Adhesive with Arovex Carbon Fiber Epoxy Laminate

7 Day at Room Temp Cure	Test Temp	Shear Strength
Arovex – Arovex (abraded)	75 °F	3440 psi
Arovex – Arovex (abraded)	140 °F	1750 psi
Arovex – Arovex (abraded) (+7 days water soak)	75 °F	3700 psi
Arovex – Aluminum (abraded)	75 °F	3500 psi
Arovex – Aluminum (abraded)	140 °F	2210 psi

Table 4 | T-Peel Characteristics – ZNT-*fuse* Adhesive with FPL Etched 2024-T3 Aluminum except where noted

Cure Cycle	Test Temp	T-Peel Strength	Bond thickness
12 hrs at Room Temp Plus 2 hours at 176 °F	72 °F	16 pli	5 Mil
12 hrs at Room Temp Plus 2 hours at 176 °F	72 °F	22 pli	10 Mil
12 hrs at Room Temp Plus 2 hours at 176 °F	72 °F	28 pli	15 Mil
12 hrs at Room Temp Plus 2 hours at 176 °F (on cold rolled steel)	72 °F	18 pli	10 Mil

Mixing Instructions

1. Stir Part A (resin) and Part B (hardener) well before mixing.
2. In separate container, pour desired amounts of Part A and Part B (according to chart below) and mix thoroughly.

Table 3 | Typical Uncured Characteristics

Characteristic	Part A	Part B	Blend
Color	Black	Off white	Black
Mix Ratio (Weight)	1	1	--
Mix Ratio (Volume)	1	1	--
Pot life at 75°F, 100g	--	--	30-40 min
Specific Gravity	1.18	1.18	--
Viscosity	158,000 cps	185,000 cps	130,000 cps

Safety Handling

Zyvex Technologies provides its customers with a product specific Material Safety Data Sheet (MSDS) to cover potential health effects, safe handling and use information.

Zyvex encourages its customers to review all relevant MSDS prior to use.

Disclaimer

Zyvex Technologies believes that the technical data provided is accurate as of the published date. Performance values are considered representative but are not intended as a specification.

Contact Zyvex

For United States quotes, orders and product information call toll free 877.Go.Zyvex (877.469.9839).

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