

POLY-BOND® B46F

Polyester-Based Fiber Reinforced Adhesive for the Boatbuilding Industry

Introduction

Poly-Bond B46F is a polyester-based, water-resistant, high-strength fiber-reinforced adhesives developed for the boatbuilding industry. Poly-Bond B46F has a successful track record of over 20 years, and is used for a multitude of applications such as hull-to-deck joints, bonding interior liners and engine stringers, strake fillers, fillers for rudders and keels, and for bonding plywood to fiberglass laminates. Poly-Bond B46F is catalyzed with a green pigmented BPO (benzoyl peroxide), 50% paste, supplied by ATC, which assures consistent and predictable gel times and cure cycles.

General Features

- High strength adhesive for poly/vinylester laminates
- Tough, remains non-brittle with excellent impact strength
- Low exotherm, low shrinkage
- Non-sagging, light weight, trims easily and does not drip
- Pigmented BPO catalyst assures consistent gel times and cure cycles
- Glass-fiber reinforced for greater cohesive strength

Poly-Bond B46F

Poly-Bond B46F, with a geltime of 50 - 55 minutes, is used in larger parts that require thicker bondlines and more assembly time. The bondline thickness can range from 1/8" (1.5mm) to 1/2" (12mm). Glassfiber reinforcements assures greater cohesive strength. Poly-Bond B46F is also used to fill cavities such as strakes, rudders, skegs and keel areas.

General Properties

Color	White
Density	0.67-0.69 g/cc; 5.6-5.7 lbs. gallon
Compression Strength	2000 psi (294 kPa)
Deformation before rupture	10%
Shrinkage	Less than 1%
Thixotropy	Non-sagging
Capillary Absorption	None, non-porous surface
Viscosity	1,000,000 – 1,200,000 cps
Exotherm, 100 grams mass	270°F (132°C)
Recommended bondline thickness	1/32" – 1/2" (1 – 12mm)
Hardness after 24 hours	Shore D 55 min.
Gel time at 77°C; 25°C	50-55 Minutes

Mixing

Before use, bring pail/drum up to shop temperature, and mix using a mechanical mixer. Also mix BPO catalyst before dispersion. Do not remove any Poly-Bond from container before mixing.

Surface Preparation/Application

Surface to be bonded should be dry, clean and free of oil or grease. Ensure that no dust remains on the surface (vacuum rather than use an airhose which only redistributes the dust). Best bonds are achieved within the resin manufacturers guidelines for a secondary bonding time frame. Sand surface if in doubt. Apply Poly-Bond with a squeegee or putty knife. Always spread Poly-Bond to the entire surface to be bonded, leaving no gaps. Apply to both surfaces to be bonded, as this prevents voids, and assures a consistent bond. Avoid cleaning surface with solvents.

Catalyzation

Poly-Bond B46F is supplied mainly in 5 gallon (19 liter) pails, and uses one jar (400 gram) of green BPO (benzoyl peroxide) paste catalyst per pail. The quantity is sufficient to catalyze the contents of one 5 gallon (19 liter) pail at a 3% catalyst level. Stir the catalyst in the 400 gram jar thoroughly before dispensing. When mixing the catalyst in the pail, use a paddle-type mixer, and scrape edges of the pail to ensure uniform catalyst dispersion. It should result in a uniform light green color. If low temperatures retard the cure, raise shop temperature, not the catalyst level. Consult us for shop temperatures outside the stated range. Temperatures above 85°F (30°C) will shorten the geltime. Ensure that parts to be bonded have reached shop temperature. The BPO catalyst guarantees a predictable geltime and thorough cure.

Catalysation with a Calibrated Dispenser

Scott Bader North America supplies a 60 cc plastic dispenser with a 10 - 60 cc scale, so that enough catalyst for one gallon (3.78 liters) can be catalyzed at a time. The dispensers are made from polyethylene, and can be cleaned with a soft cloth or paper. Do not leave the dispensers in acetone, MEK, or other solvents.

Poly-Bond B46F Catalyzation
Green BPO Paste Catalyst, 50%, for a 50 – 55 Minute Gel Time

Temperature °F	°C	% of Catalyst (by Weight)	cc/Gallon (3.78 l)	Grams/Gallon (3.78 l)
75	24	3.5	125.1	138.9
80	27	2.7	96.5	107.7
85	29	2.2	78.7	87.3
90	32	1.75	62.6	69.5
95	35	1.4	51.8	57.6

The catalyst chart has been generated from laboratory conditions at a constant controlled temperature setting. The laboratory moisture level is less than 20%. Temperature and moisture can affect the results shown above. The information contained in this chart should be used as a base point. Tests must be performed at shop conditions prior to use.

Shelf Life

Poly-Bond B46F is a stable product, and adequate long-term storage conditions will result in a shelf-life of 12 months or more. After this time, the gel time may drift, and should be checked before use.

Storage

The product should be kept in securely enclosed containers. Storage should be in a dry place out of direct sunlight. The temperature should be between 65-77° F (18-25° C). Allow Poly-Bond to reach shop temperature before using. Keep containers closed to eliminate styrene evaporation, and to avoid change in properties of the material.

NOTICE: All precautionary labels and notices should be read and understood by all supervisory personnel and employees. Consult OSHA and government regulations for additional safety and health information. Purchaser is responsible for complying with all federal, state, or local laws and regulations covering the use of this product. The information contained herein is correct to the best of our knowledge. Please check our website for latest updates. The recommendations or suggestions contained in this bulletin are made without guarantee or representation as to results. We suggest that these recommendations and suggestions are evaluated by the purchaser's technical staff prior to use. Our responsibility for claims arising from breach of warranty, negligence, or otherwise is limited to the purchase price of the material. All values can be revised due to ongoing testing and are subject to change without notice.

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