

Monocure3D[®]

TDS

TECHNICAL
DATA SHEET

PFA (nFEP) FILM

Product Description

PFA (Perfluoroalkoxy) film is a premium elastic separation film engineered specifically for bottom-up MSLA 3D printers. Produced from ultra-high-purity PFA resin, this advanced film offers exceptional non-stick release, chemical resistance and thermal stability. It is durable and flexible, supporting extended service in demanding resin-printing environments. PFA stands out with smooth release, high optical clarity and long flex life, enhancing printing success rates, helping reduce release-related failures across a broad range of model geometries.

Ideal for professional MSLA and DLP printers where durability and consistent release are essential, PFA excels in producing high-quality, detailed models across a variety of industries, including **engineering, dental, and manufacturing**. Whether you are creating intricate designs or large-scale prototypes, PFA provides the reliability and quality assurance needed to achieve superior printing results.

Product Features

Superior Release Properties | The PFA film’s low-friction surface facilitates smoother and easier separation from the cured resin layer. This key feature enhances the overall printing process by significantly improving print success rates, speeding up the production cycle, and greatly simplifying the post-processing steps. The reduced force required for peeling means less stress on the models and lower risk of deformation or damage.

Increased Durability | PFA combines flexibility with strong mechanical performance, helping the installed film maintain stable tension through repeated print cycles. This durability supports consistent layer formation, fine detail and longer service life than standard FEP.

Thermal & Chemical Resistance | Ultra-high-purity PFA resists heat, resin chemistry and common cleaning exposure. Its stable fluoropolymer structure helps preserve release performance in demanding workflows and reduces the likelihood of premature film degradation.

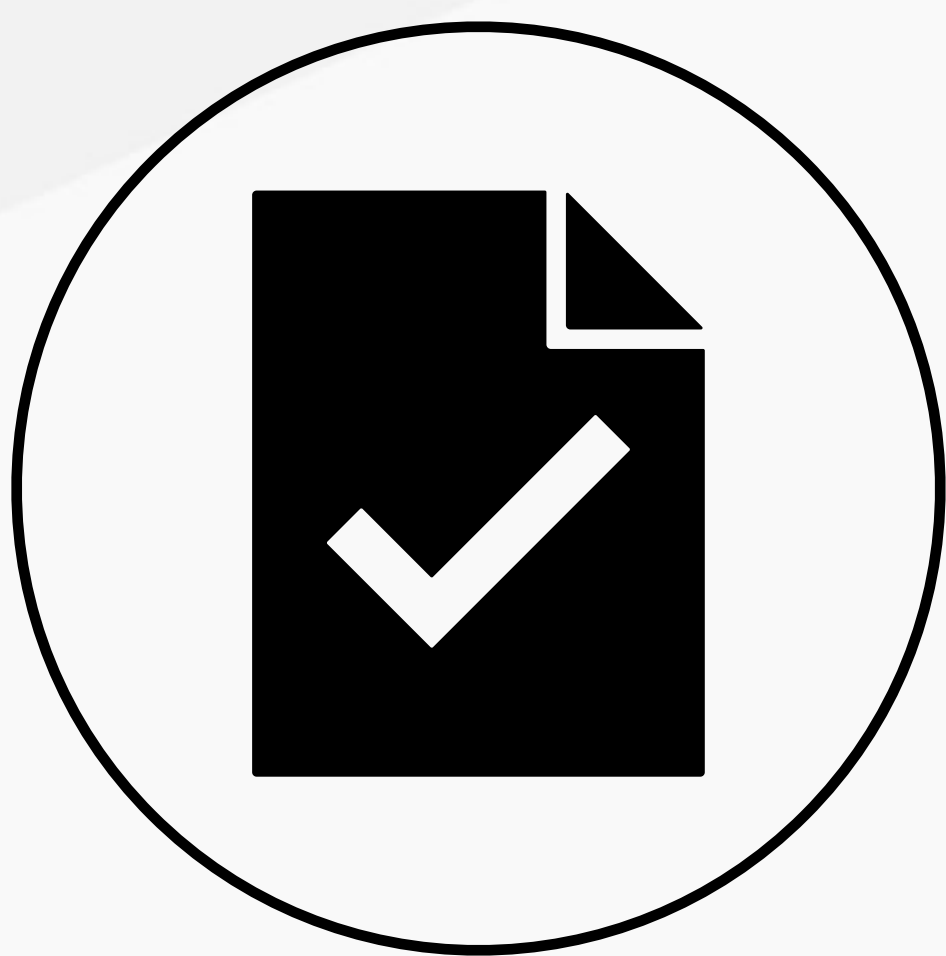
Superior Print Quality | Due to its exceptional peeling performance, the PFA film minimises deformation during the peeling process, allowing for the production of detailed, high-quality prints with excellent dimensional accuracy. This feature is crucial for professionals who demand the highest quality in their finished products, making it ideal for intricate designs and complex geometries.

Built for Demanding Printers | PFA film is suited to demanding MSLA, LCD and DLP applications where release consistency, optical clarity and service life matter. It supports dependable results across a wide range of printer sizes, printing conditions and resin types.

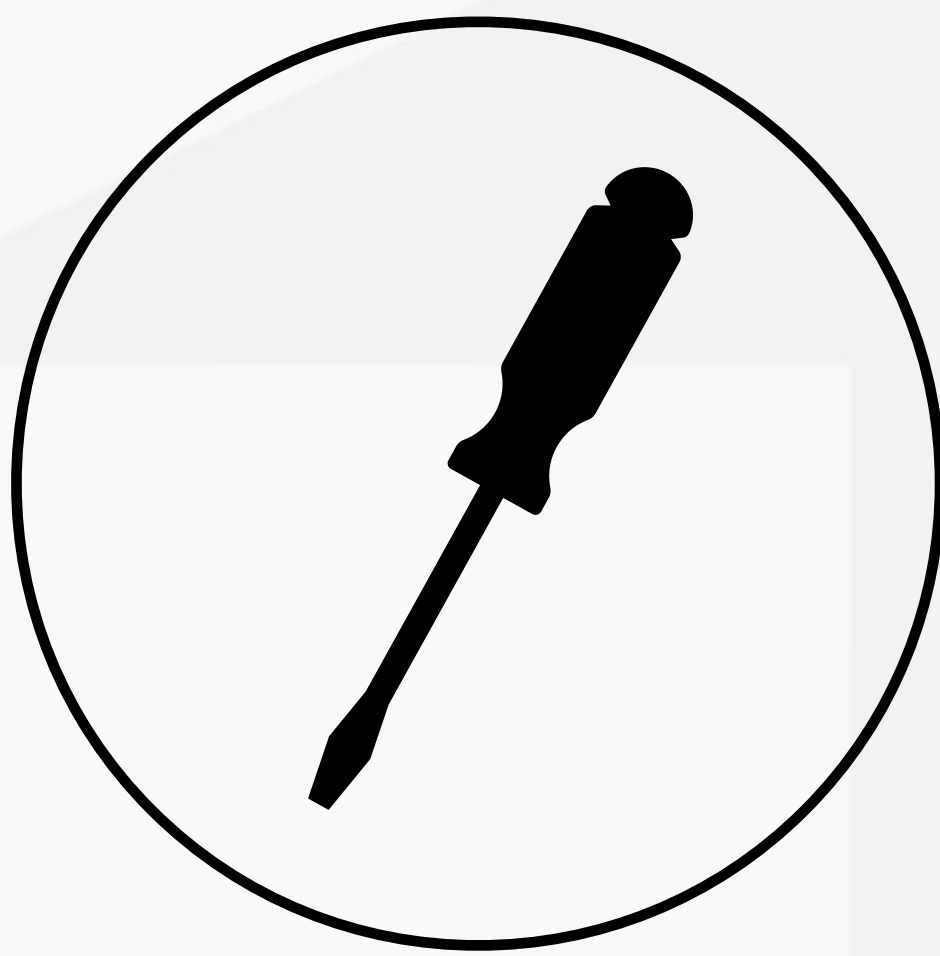
Installation Instructions

1. Prepare a Suitable Work Area: It's important to prepare a clean, non-scratch surface to work on. This can be a lint-free cloth that will prevent scratches and damage to the PFA film. Ensure the area is free of dust and any sharp objects that could compromise the integrity of the film.
2. Remove the PFA Film from Packaging: Open the packaging and carefully remove the sheet of PFA film. Handle the film by the edges to avoid direct contact with the surface, which could leave fingerprints or transfer oils from your skin.
3. Peel Protective Layers: Each side of the PFA film is protected by a thin layer to prevent damage during storage and transport. Start at one corner and gently peel away the protective layer from one side. Repeat the process for the other side, making sure to touch the film as little as possible.
4. Installation of the Film: Align the film with the resin vat of your printer. Follow the manufacturer's instructions closely for installation. The film should be installed without any wrinkles or bubbles to ensure optimal performance.
5. Check Film Tension: Once the film is installed, it is crucial to check that it is stretched taut across the vat. Gently tap the surface of the film with a finger. It should make a drum-like sound if properly tightened. Proper tension is key to achieving high-quality prints, as it affects the release characteristics of the film during the printing process.
6. Cleaning the Film: After installation, inspect the film for any smudges or fingerprints. Use a lint-free cloth to gently clean the surface. If cleaning is required, use only a film-safe cleaner recommended by the printer or vat manufacturer and wipe gently until clear and streak-free.

PFA Quick Start Guide



1. Remove Protective Layers



2. Install the Film



3. Check the Tension



4. Cut & Clean Film

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Technical Specifications

Property	Typical Value
Film Thickness	0.127 mm
Density	2.15 g/cm³
Tensile Strength at Break	21 MPa
Continuous Use Temperature	260°C
Elongation at Break	300%
Moisture Absorption	<0.02%
Kinetic Coefficient of Friction	0.1–0.3
Solar Transmission	96%
Refractive Index	1.35
Folding Endurance (MIT)	100,000 cycles

Head to Head | PFA (nFEP) vs. FEP vs. ACF Film

PFA (nFEP)	FEP	ACF
✓ Smooth release	✓ Optical clarity	✓ Very low peel force
✓ Strong & durable	✓ Lower cost	✓ High flexibility
✓ Chemical resistant	✓ Durable	✓ Fast release
✓ High purity	✓ Broad compatibility	✓ Low-stress separation
✓ High transmission	✓ Standard formats	✓ Large formats
✓ Long flex life	✗ Shorter flex life	✗ Lower optical clarity
✓ Thermal stability	✗ Higher peel force	✗ Careful handling
✗ Higher cost	✗ Lower heat stability	✗ Easier to puncture

Disclaimer | The values provided herein are intended for specification purposes only and represent typical PFA film properties derived from recognised ASTM test methods and supplier literature. Monocure3D does not guarantee performance in specific applications. Given that product performance can vary, it is essential for each user to conduct their own testing to ascertain the suitability of the product for specific applications. The purchaser assumes all risks and liabilities associated with the use of this product. Store flat, clean and dry at ambient conditions, away from sharp objects and direct sunlight. Monocure3D is committed to delivering superior products; please [contact our support team](#) for expert application assistance.