

postpro SFX

3D
M 3D-MODEL

PostPro SFX

Desktop Vapor
Smoothing for 3D-Printed
Thermoplastics

V.1.0

December 2023



DESKTOP VAPOR SMOOTHING SYSTEM

The world's first bench-top vapor smoothing system, utilizing AMT's cutting-edge green chemistry, **PostPro Pure**. Compatible with engineering plastics, the system produces high-quality sealed surfaces from an office environment.

PERFORMANCE BENEFITS

- Reliable & repeatable results from batch to batch
- Seals surface
- Smooths surface / removes irregularities
- Improves mechanical properties
- Improves UV resistance
- Enhances aesthetics



WHAT IS VAPOUR SMOOTHING ?

Vapor smoothing for 3D printing is a process in which additively manufactured parts are exposed to a vapor under carefully controlled conditions. This non-line-of-sight approach creates parts with a smooth surface, improved mechanical performance, sealed and sterilizable surfaces. This innovative technology opens a world of new application opportunities in industries such as medical, automotive, food & beverage and consumer goods.

PLUG & PLAY

Simple and fast installation with a small footprint, enabling operation in an office environment.

COMPACT & VERSATILE

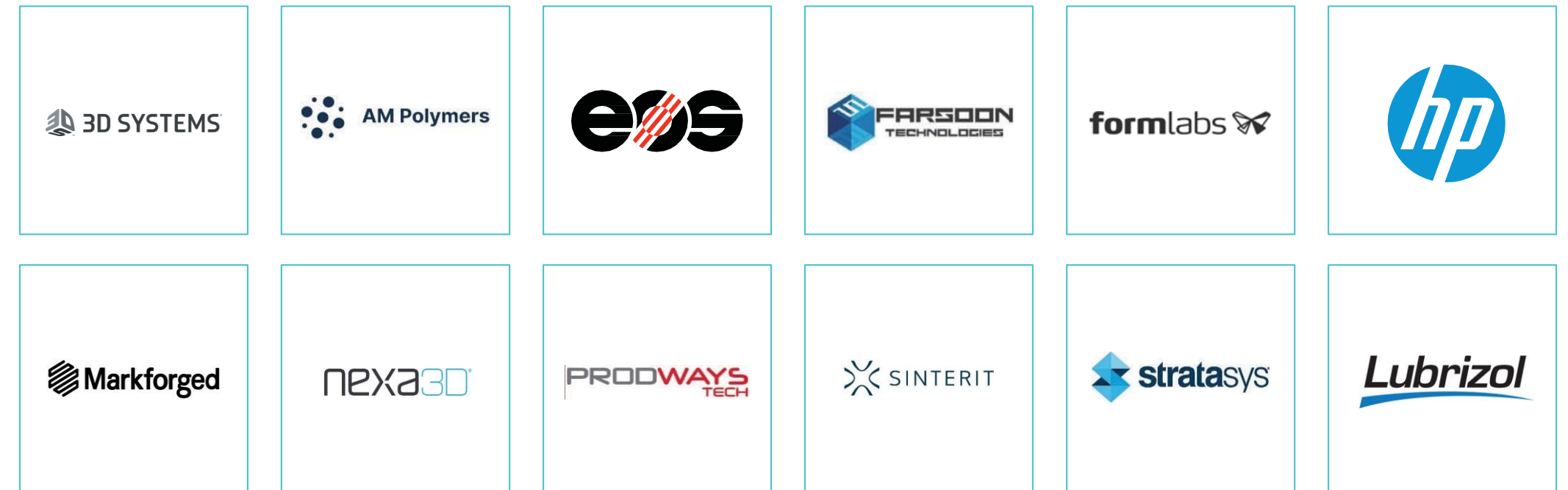
Designed for R&D and low-volume prototyping projects. Suitable for a range of engineering plastics.

SAFE & GREEN CHEMISTRY

The system utilizes PostPro Pure in quick-change cartridges, for safe and hassle-free operation.



POSTPRO SFX COMPATIBLE MATERIALS/ OEM PARTNERS



PostPro SFX Key Features

COMPACT SIZE

Small footprint to operate in even the most compact of workshops and laboratories.

SAFE & GREEN CHEMISTRY

Utilizing AMT's Green PostPro Pure consumable for safe and sustainable operation.

EASY CONSUMABLE HANDLING

Proprietary safe pour cartridges and no-hassle, non-hazardous packaging for fast and efficient delivery.

AMT PATENTED TECHNOLOGY

Drawing on AMT's 6 years professional experience in the chemical vapor smoothing industry. Protected under the following patents: EP3565712, GB2582225 & GB2597240B.

ENHANCING PART PROPERTIES

The original technology that smooths and seals the surface and internal cavities of 3D printed polymer parts, while also improving mechanical properties.

UNLIMITED APPLICATIONS

Optimized for rigid nylons at launch, with expanded material compatibility on the horizon. Ideal for SLS, MJF, HSS and FDM/FFF applications.



THE COMPLETE BUNDLE

PRODUCT DESCRIPTION

- ✓ PostPro SFX System
- ✓ SFX Workstation
- ✓ Rack Preparation Stand
- ✓ Rack Storage Stand
- ✓ Six Processing Racks
- ✓ Cartridge Starter Pack (3*consumable cartridges)
- ✓ 24-month Warranty

PRICE

\$25.999

€23.999



THE STARTER BUNDLE

PRODUCT DESCRIPTION

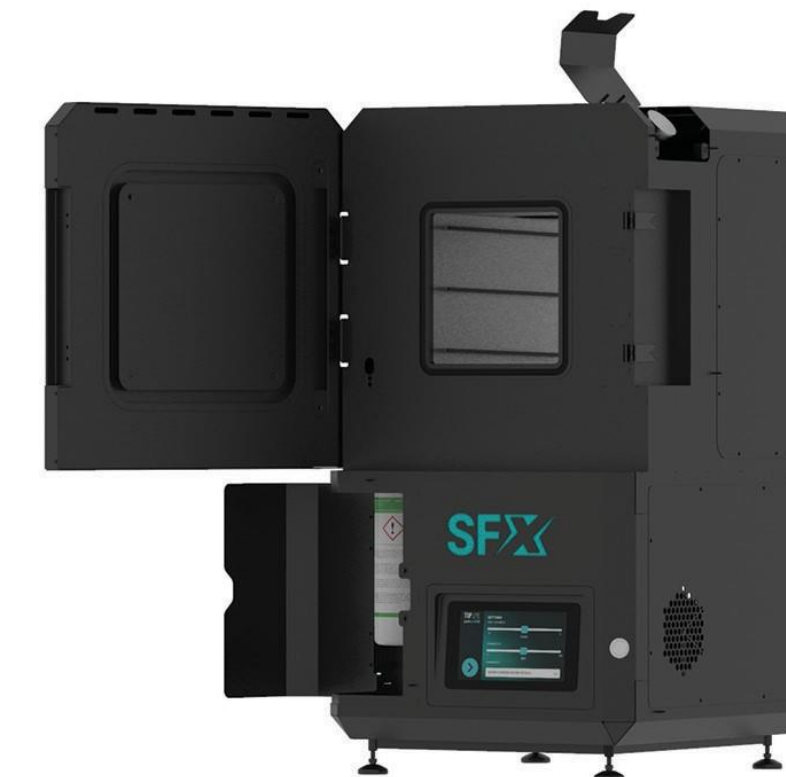
- ✓ PostPro SFX System
- ✓ Three Processing Racks
- ✓ Rack Storage Stand
- ✓ Single Consumable
- ✓ Cartridge

12 Month Warranty

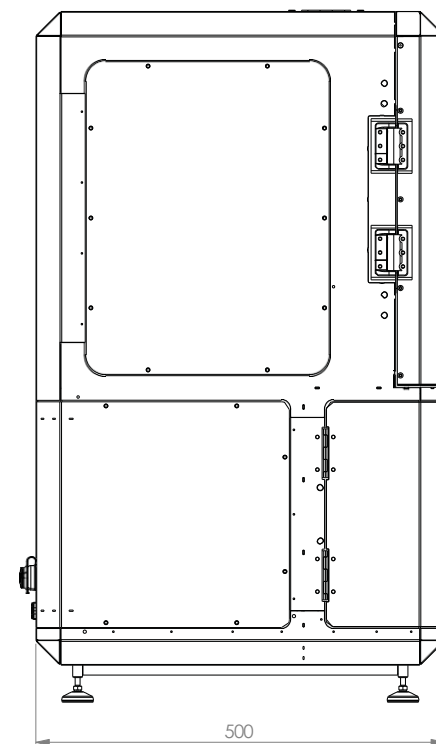
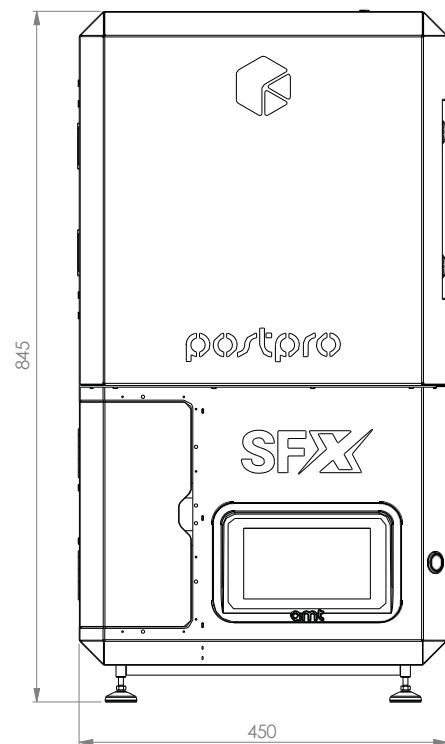
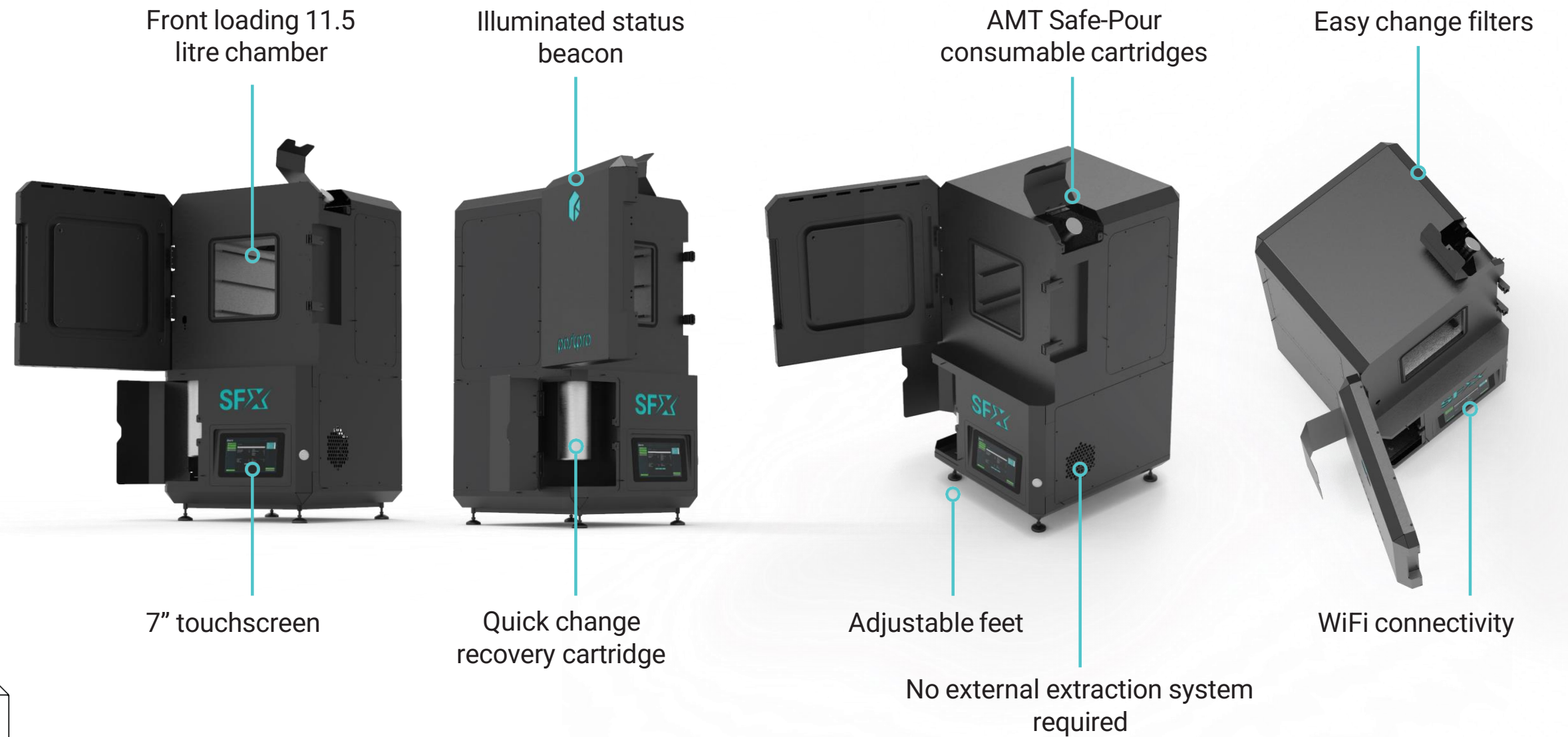
PRICE

\$19.999

€17.999



SPECIFICATIONS



DIMENSIONS	EU	US
External Dimensions (WDH)	450 x 500 x 845 mm	17.7 x 19.7 x 33.3 in
Weight	50 Kg	110 lb
CAPACITY		
Process Chamber Dimensions (WDH)	190 x 320 x 190 mm	7.5 x 12.6 x 7.5 in
Process Chamber Volume	11.5 litres	11.5 litres
POWER		
Electrical Configuration	230V / Single Phase / 13A	120V / Single Phase / 20A

PostProPure: Green and Sustainable Chemistry for use in SFX

- ✓ Most environmentally friendly solution in the post-processing market
- ✓ FDA approved chemistry unlocking applications within medical, food contact and biopharma industries.
- ✓ No regulatory restrictions making worldwide shipping quick and simple
- ✓ Biodegradable, non-halogenated and non-toxic chemistry

1 CARTRIDGE

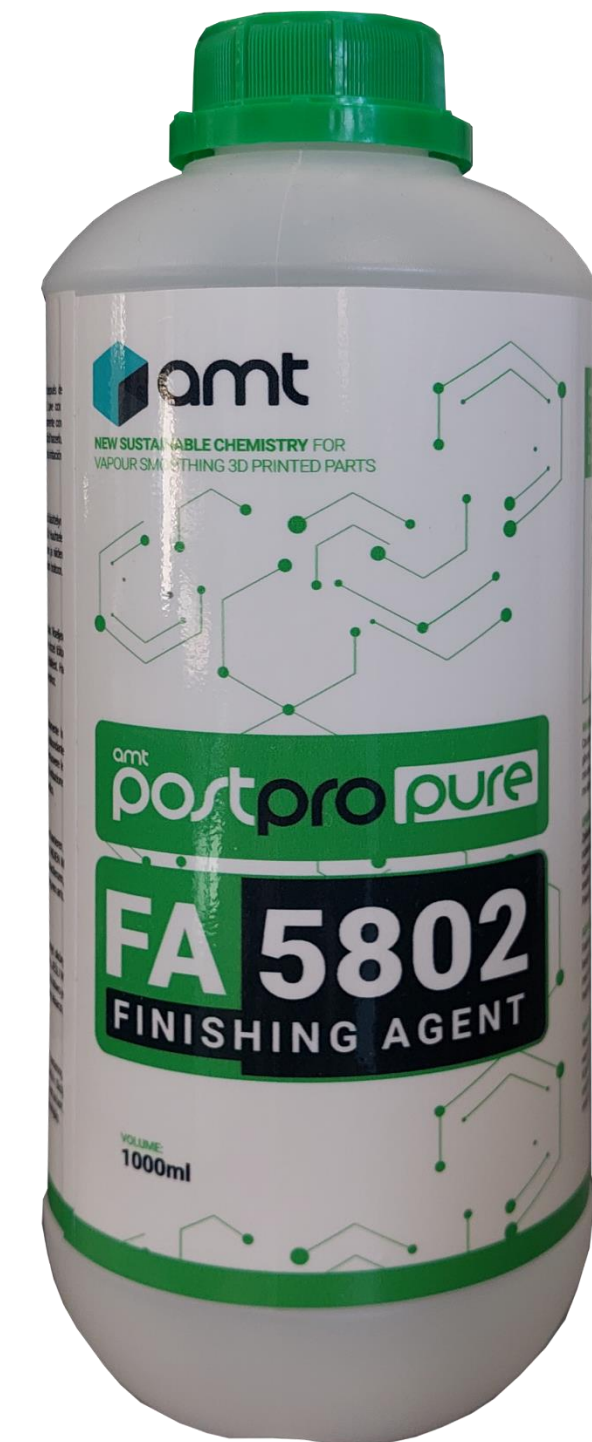
525 EUR / 600 USD

lasts for 20-25 process runs

BATCH COST

25-30 EUR/USD

amt
postpro pure



FAQ

Questions related to the PROCESS

What is the processing time?

The entire process takes ~120 minutes in the SFX, including a full drying cycle. This varies depending on the part's material, quantities, and geometry.

How do you load parts into the machine?

Parts are suspended or placed on metal trays which can then be loaded directly into the chamber.

How big is the machine?

The external dimensions of the machine are 450 x 500 x 858mm (WDH) and weighs around 50kg meaning it fits most workshops with ease.

What is the chamber size?

The chamber dimensions are 190 x 320 x 190mm (WDH) and 11.5L in volume.

How does the machine know what recipe to use?

The SFX comes with our revolutionary TUP Lite software. The operator inputs part wall thickness and the fill level of the processing chamber, the software then automatically generates a recipe. Fine tuning is also available depending on the desired results.

How much does it cost per process run?

Depending on the number of parts, geometry and material, the cost per run is around 25-30 EUR/USD.

Questions on PARTS, MATERIALS and COMPATIBLE TECHNOLOGIES

What geometries can be processed?

Most geometries can be processed without any issues; this also includes internal channels and complex shapes. Parts with thinner wall thicknesses are prone to overprocessing and deformation so need to be done carefully (<1mm).

What materials can be processed?

Upon release, the SFX is capable of smoothing PA12. Post launch new materials will be added including composites and elastomers. Please consult AMT's SFX Material Compatibility list for the latest information.

What printing technologies are compatible with SFX?

Thermoplastic polymers from FFF, SLS, MJF and HSS are compatible, initially only PA12 (nylon).

Do I need different solvents for different materials?

No, all materials on the SFX Compatible Material list can be smoothed with the PostPro Pure (FA5802).

FAQ

Questions on INSTALLATION

How does the installation of the PostPro SFX work?

The SFX is a plug and play solution so it can be done by the customer independently with guidance found on AMT Academy.

Will there be an engineer available for the installation?

The installation is done by the customer with support from AMT installation manuals.

How long does the installation process take?

1-2 hours.

Will there be a training provided?

Yes, via AMT academy

What are the machine power requirements?

The SFX only needs an electrical connection and internet connection to run, and access AMT's service platform for updates. This can be either 230V - Single Phase - 13A or 120V - Single Phase - 20A.

Any other requirements for the room?

We recommend that the room is clean and dust-free with a stable temperature for optimal processing results.

Questions on DELIVERY and LEAD TIME

Where are the machines manufactured?

Veszprém, Hungary.

What is the current lead time?

Q2 2024.

What are the shipping conditions / Incoterm?

EXWORKS Veszprem, Hungary.

How is the machine packed?

SFX machines are packed in secure cardboard boxes.

Do I need a forklift to unload/unpack the machine?

No, the machine only weighs 50kg so can be transported on a sack truck and unboxed by two people.

Questions on SOLVENT

Is the solvent safe to use?

Yes, PostProPure is a sustainable, non-toxic and non-hazardous chemical that circulates in the SFX via a closed loop mechanism.

Are operators exposed to the solvent?

No, the machine goes through a full drying cycle before being allowed to open. Parts will be dry and safe to touch when the full 2 hour cycle has finished.

Does solvent remain in the parts after processing?

Completing a full drying cycle as suggested by AMT ensures no solvent remains on the parts.

What happens with the recovered solvent?

Recovered consumable is disposed by the customer in accordance with all applicable local regulations.

Are there any safety considerations for the solvent?

The solvent is non-hazardous but a detailed breakdown of all considerations can be found in the PostPro Pure (FA5802) MSDS.

How is solvent added to the SFX machine?

The ergonomic design means it is quick and easy to add consumables to the SFX machine in a matter of minutes via a human aided filling system.

How many cycles does 1 cartridge handle?

20-25 process runs

FAQ

Questions on PROCESS SAFETY

Does the machine emit any odours or smells?

No, during processing and after running a full process cycle, there's no odour or smell coming from the machine or parts.

Do I need any special protective clothing for handling the machine or the solvents?

AMT recommend that standard lab PPE (safety glasses, heat-resistant gloves, respirator and lab coat) are worn while operating the machine and changing cartridges/filters.

Do I need to clean or prepare the machine before and after every use?

The machine should be cleaned with IPA and a lint-free wipe between runs.

Questions on SERVICE and MAINTENANCE

What regular maintenance is required?

PostPro systems are designed to need little maintenance. The maintenance that is required is the cleaning of the process chamber, replacement of waste and consumable cartridges and finally replacing the exhaust filter.

What warranty comes with the machine?

As standard, the machine comes with a 1-year manufacturer's warranty which comes with remote diagnostic and where it cannot be fixed, can be returned to AMT for replacement. Additional care packs are available, and details will be announced closer to the release date.

Application Examples

AUTOMOTIVE COMPONENTS

Vapor smoothing can be used to improve the surface finish and durability of automotive components, such as air intake manifolds, engine covers, and dashboard components. Moisture and solvent absorption reduction can also be useful for automotive applications in which solvents such as gasoline and diesel fuel are present, as vapor smoothing creates a sealed surface, reducing liquid and gas intake.

MEDICAL DEVICES

SLS 3D printing, particularly with Nylon 11 Powder, is widely used in the production of medical devices today, and vapor smoothing can be used to improve the surface finish of parts such as prosthetics, orthotics, and medical device assemblies, while maintaining the biocompatibility of the base material. Vapor smoothing also greatly reduces the surface friction that patients wearing orthotic devices may feel, as well as reducing the potential for bacteria growth.

CONSUMER PRODUCTS

Vapor smoothing can be used to enhance the appearance of consumer products, such as phone cases, eyewear, gaming components, and other electronic accessories, to that of a Class A or B surface. The surface glossiness can also be moderately controlled through this process, offering glossy to semi-matte finishes. Lastly, to achieve the best possible aesthetic, consider adding a coating on top of the vapor smoothed part, such as Cerakote on rigid SLS materials, or the BASF Ultracur3D Coat F on TPU 90A Powder.



Customer Case Study: 3D Nation

3D Nation is a professional 3D printing service provider with a focus on the automotive and aerospace industries. Located in the south of Germany, the company was founded after an engineer's lockdown hobby of 3D printing turned into a full-scale business. One of the company's main focus areas is developing and prototyping new products and brand concepts for automotive companies and private aerospace manufacturers. They're currently building up their end-use production facility with a large fleet of SLA and SLS 3D printers, including eight Fuse Series selective laser sintering (SLS) 3D printers, as well as two AMT vapor smoothing machines.

"By using the vapor smoothing technology we can skip the process of injection molding after the rapid prototyping phase. The parts that we print on our Fuse Series printers and post-process with a vapor smoother look very similar to an injection molded part and have very compelling material properties," Jon Yates, the founder of 3D Nation explains.

The superior surface quality of vapor-smoothed parts, even without further painting or coating, makes them suitable for end-use applications, where finishes, textures, and imperfections are of paramount importance.

"For any parts that are going to be under a lot of stress or have to withstand a lot of temperature changes, we use vapor smoothing. For instance, for the ducting for cooling breaks on race cars, because at the front of the ducting, it's taking cold air in, and at the back of the ducting it can be 150 °C to 200 °C. Here, a vapor smoothed part out of Nylon 12 GF Powder does a perfect job," Yates says.





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THANK YOU!