POL NF02

NanoFlame NF02 Surface Pretreatment Device

Description

The **Polytec PT NanoFlame NF02** is a surface pretreatment device used to alter the surface energy of a substrate in order to improve wetting and so give better adhesion to adhesives or coatings. This flame pretreatment device is based on the principle of **flame-pyrolytic surface silicating**. The NanoFlame burns a special propane-butane-organosilicon gas mixture, which is easily replenished.

Features & Benefits

- Pretreatment of small and medium sized surfaces
- Improve wetting
- Improve adhesion

Applications

The NanoFlame NF02 generates a very thin (20-50nm), but very dense, layer of silicon dioxide by flame-pyrolytic deposition of an organosilicon compound. These silicon dioxide layers produce very high surface energies and adhere strongly on:

- Metals
- Glass

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- Ceramics
- Polymeric materials

This layer provides the basis for long term water and solvent resistant adhesive bonds. The NanoFlame NF02 is recommended for the pre-treatment of small and medium sized surfaces up to A4 size.

The surface of the substrate is treated for a short period of time with the outer (oxidizing) part of the fame, which should continuously be moved during operation. It is very important that the treatment is never done with inner blue (reducing) part of flame. If necessary, the illumination of the working site can be reduced for better differentiation.

In case of pre-treating very small, thin walled or heat sensitive parts, it is recommended to repeat the flaming in short intervals. As a rule of thumb, an area of 1 cm² requires a treatment time of 3-5 seconds. Local overheating should be avoided. Generally, the temperature of the pretreated parts should not exceed 150-200°C. Particular care has to be taken in case of thermoplastic materials.

The storage time of the flame pretreated part should not exceed 12 hours. Storage at slightly elevated temperatures – up to 50°C – is favourable.

Refilling
Empty flame device can be refilled with NanoFlame gas mixture from 200 resp. 600ml cartridges.

Safety and Transport Regulations

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NanoFlame is a special propane-butane-organosilicon gas mixture and forms like pure propane-butane propellants explosive mixtures with air. Hence, open sources of ignition have to be removed, smoking during work with NanoFlame is not allowed.

Additional Recommendations for Surface Pretreatment of PTFE

Particular care has to be taken, when PTFE or other fluoropolymers are pretreated. PTFE and other fluoropolymers decompose at temperatures above 350°C. Some of these decomposition products are very toxic after inhalation. Therefore, it is absolutely necessary, that the flame pretreatment is carried out considering the instructions given under 2. In particular, the flame has to be moved to avoid overheating. Small or thin-wall parts require interrupted treatment. For obtaining the intended effect no higher temperatures than 100°C are necessary when treating such polymers.

Specifications

Treatment time	3-5 seconds (for an area of 1 cm²)
Storage	Up to 50°C

Ordering Information

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Part number	Description
POL NF02	NanoFlame NF02
POL NF02-SET	NanoFlame NF02 Set – presented in a wooden box, comprising: · NanoFlame NF02 · Tet Ink · Refill Adapter · 200ml Refill Cartridge
POL NF-RF05-200ML	Refill Cartridge 05 200ml

Supplied by:

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