



ECOPART SPACER VARNISH FR 54 N

Spacer varnish for all gas-curing core-making methods

Product Properties

ECOPART SPACER VARNISH FR 54 N is based on bonded silicon-organic compounds, inorganic fillers and surfacing agents suspended in hydrocarbons. ECOPART SPACER VARNISH FR 54 N has anti-adhesive and cushioning properties and can be applied by brush as well as by spray-gun. The product is preferred as SPM spacer varnish for steel core boxes used in the cold box process. ECOPART SPACER VARNISH FR 54 N provides special protection and good release properties to areas subjected to high mechanical stress, like for instance, the input plenum directly below the blow ports, where customary release agents often fail after a few blowing cycles, leading to frequent tool cleaning downtimes. ECOPART SPACER VARNISH FR 54 N is highly effective and protects the core box from abrasion-related wear, thus making wear-intensive maintenance downtimes redundant.

Contrary to customary release agents, ECOPART SPACER VARNISH FR 54 N does not appear in liquid form on the tool surface, but hardens like real varnish after drying. The product has excellent adhesive properties, preventing erosion by the core sand stream. To guarantee optimum adhesive results, the tool surface must be thoroughly cleaned, and the spacer varnish allowed resting and hardening for min. 2 hours at room temperature.

ECOPART SPACER VARNISH FR 54 N has been developed for partial application to especially critical core box areas – in combination with conventional release agents, such as ECOPART 756 – to reduce cleaning downtimes and to guarantee high productivity.

ECOPART SPACER VARNISH FR 54 N contains highly volatile solvents, thus providing good binding properties. For safety measures related to the product, please refer to the respective Safety Data Sheet. After evaporation of the volatile components and completion of the hardening process, the varnish is harmless..

Analytical values

- Bonded silicon-organic compounds, inorganic fillers and surfacing agents, suspended in hydrocarbons.
- Condition: Liquid dispersion
- Color: Red
- Odor: Typical for hydrocarbons
- Boiling point/
• range: 81°C
- Flash point: -18°C

ASK Chemicals GmbH | Reisholzstraße 16-18 | 40721 Hilden | Tel. +49 21171103-0 | info@ask-chemicals.com | www.ask-chemicals.com

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Storage & Handling

- Product Storage Conditions: 6 months under normal conditions.
- After opening the container, seal tight again.
- Once opened, use up remaining product as soon as possible.

Packaging

- Brush: 15g
- Small container: 40-400g
- Spray can: 200ml (45 g active substance).

Handling:

Before applying ECOPART SPACER VARNISH FR 54 N, we recommend cleaning the surface first with ZIP CLEAN FR 54 N, then priming same with the surfacing agent ECOPART PRIMER N. Ambient temperature and temperature of tooling must be minimum 15°C.

We have created a video explaining the correct handling of ECOPART SPACER VARNISH FR 54 N. The video can be found here: <https://youtu.be/JOUH9G-m6EM>

1. Cleaning the surface:

Keep core box surface absolutely free from any substance which may inhibit the adhesion of ECOPART SPACER VARNISH FR 54 N. During core production, liquid release agents are often used, to which some degree of surface contamination cannot be excluded. Although CO2 pellets are widely recommended for rough cleaning, they have proven, however, quite ineffective on many release agents, the residues of which can still be found in the tiniest fissures and pores of the metal tooling. Following the ice blasting, we recommend using our liquid metal cleaner ZIP CLEAN FR 54 N, which has been developed analog to our release agents. Please note: Wipe off soiled cleaner residues from the tool after application.

2. Primer application:

ECOPART PRIMER N is a surfacing agent which improves the adhesion on metal surfaces. Before primer application, make sure which areas of the mold need painting with the FR system. Apply a thick coat of primer in these areas (after cleaning according to step 1) in order to obtain a visible wet film on the surface in question. We recommend using a solvent-proof pump spray. Since the primer ages with ambient air, please always seal container tight after using. Let the primer air out and harden. 10 – 15 minutes resting period between primer application and ECOPART SPACER VARNISH FR 54 N (Step # 3) yields best results.



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3. ECOPART SPACER VARNISH FR 54 N:

Apply ECOPART SPACER VARNISH FR 54 N like any other kind of varnish, either with a spray gun or a spraying can. The material can also be applied by brush (according to steps 1 + 2). If you are using a spray can, shake vigorously for 15-30 seconds, then install spray head (absolutely centered and straight). The pertaining spray head ensures a high degree of precision during application. For the painting of larger areas, please contact the manufacturer, who will then deliver the suitable spray nozzle or nozzle arrangement. Before applying the product, please test the spray action on a piece of paper or carton to get a feel for the spray pattern and to avoid dribbling. We recommend a minimum spraying distance of 10cm. Apply the spray film with swift movements in crisscross fashion, provided the contour allows for such. After a succession of 4 spraying cycles, the area should air out a couple of seconds. To avoid drop formation at slanted areas, we recommend to observe the painting quality as early as after 2 spraying actions and interrupt, if need be. During this time you can start coating other areas. 4 spraying cycles yield approx. 50µm layer thickness (recommended protective coat thickness under normal mechanical stress). More than 4 spraying cycles are only recommendable for highly stressed areas (8-10 cycles 100µm layer thickness). The higher the layer thickness, the longer the resting period. The number of spraying cycles and thus, increasing coat thickness depends on the dimensional accuracy demanded in the production parameters.

Please turn the spray can upside down after use and release excess material to clean both spray head and nozzle. Remark: The layer thickness of 50µm does not clog the core box vents. In some cases however, you may observe that the varnish has covered the holes in the vents. This is a temporary situation caused by the wet layer thickness. As soon as the coating has hardened, the core box vents are free again. Accidentally painted areas (sealing gaskets outside the core contour) must be wiped off immediately. Some slightly reddish film might remain, which however improves the core box tightness.

4. Hardening:

The solvents evaporate from the varnish within minutes. The coating needs 90-120 minutes to harden at room temperature and regular air circulation. Higher temperatures and increased air moisture accelerate the hardening process. By no means close the core box during the hardening period! Sufficient air circulation must be guaranteed. After completion of the hardening process, the core box is ready for immediate use or storage. The varnish film on the tool is not hard and brittle, but rubbery and compressible.



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5. The process:

The application of ECOPART SPACER VARNISH FR 54 N calls for the previously described steps 1-4. During this cycle of operations, you cannot repair the varnish film. According to the instructions, the coating might last for about 1000 core blowing actions, before disappearing. Some binder systems may leave some minor resin build-up following a couple of 100 blows, which can be easily wiped off. This is a frequently recurrent situation.

6. Cleaning:

Remove the layer of ECOPART SPACER VARNISH FR 54 N prior to every new application. It is not possible to paint over the old varnish. We recommend ice-blasting, because the coating layer becomes brittle and chips off under the influence of cold temperatures. Equally efficient is the combination of lie bath and ultrasound. If not previously contaminated with other chemicals, the flaky coating residues are harmless and can be disposed of with regular household refuse.

Product-related indications contained in the Safety Data Sheet always refer to the varnish in wet conditions. To maintain ideal tooling management, we recommend re-painting the tool directly after ice-blasting.

7. Handling:

Handling and storage of ECOPART SPACER VARNISH FR 54 N is similar to other spray cans. Store the cans at room temperature (by all means, below 50°C) and in upright position. For storage and disposal, please refer to the instructions in the Safety Data Sheet.

- Labelling: Please refer to the Safety Data Sheet

Complimentary Products

All gas-curing core-making methods