

Product Information

Tarnish protection

x-tec® TP 4053

-Technical Application-

Product Description:

x-tec® TP 4053 is a solvent-based, inorganic-organic hybrid coating material for coating metals (e.g. stainless steel). After thermal hardening, x-tec® TP 4053 forms an abrasion-resistant, transparent tarnish protection layer for stainless steel components with a smooth surface. Tempering coated stainless steel at 500°C for 1 hour does not show any tarnish. The layers are water-stable and can be deformed (subsequent bending by 90° is possible).

Characterisation*:

Active agent:	Inorganic-organic composite material in isopropanol
Colour:	Clear to slightly cloudy liquid
pH:	Alkaline
Solubility:	Can be diluted in isopropanol
Solid Content:	38 – 39 wt.-%
Stability:	The tightly closed original containers at least 4 months, have to be stored at 5°C to 25 °C (protect from direct sunlight). Opened container should be processed quickly. The expiration date of each batch is shown on the product label. Storage beyond the specified period also does not necessarily mean that the product is unusable. A check-up of the necessary properties for the specific application is essential in this case for reasons of quality assurance.
Handling:	Refer to safety data sheet. During processing appropriate personal protective equipment must be ensured.



Application:

For safety assurance, we recommend that smock, goggles and gloves must be worn. Splashes on skin have to be rinsed with water and soap thoroughly. The product contains alcohol, therefore the compatibility with sensitive surfaces has to be checked. Ensure that the work place is well ventilated.

The processing is accomplished in three steps: 1. Cleaning, 2. Application, 3. Curing.

1. *Cleaning:*

Surfaces have to be cleaned thoroughly from dust, dirt, oil and grease. We recommend using an abrasive cleaner, an alkaline or an acidic cleaner (compatibility has to be tested). Please use only cleaner without drying agents! Please rinse surfaces after cleaning with demineralized water in order to remove surfactant residues. An indicator for a proper cleaned surface is an even laminar wetting with the clear rinse water. If the surface is still showing hydrophobic properties, please repeat the cleaning step. After rinsing, the surface has to be dried, e.g. with compressed air. Please make sure that the compressed air is oil-free!

2. *Application:*

Dip, spray or flood coating. Spraying or dipping is particularly recommended on metal surfaces. An undiluted application is recommended as a tarnish protection coating for stainless steel. For other metallic surfaces, dilution with isopropanol is recommended, preferably in a ratio of x-tec TP 4053: isopropanol 1:1.

Parameter example spray coating:

Spray gun: Sata minijet 3000 B HVLP, nozzle 0.8

Compressor pressure: 1.5 bar

Gun pressure: III

Beam width: wide

Layer thickness: approx. 1-3 µm

3. *Curing:*

Thermal treatment of the applied wet film is required to dry and harden the layer. Coated substrates are allowed to flash off for approx. 5 minutes and then cured in a circulating air oven at 220 to 250 °C for approx. 15 to 30 minutes. The exact parameters must be determined at the coating system.



Concluding remarks:

The above-mentioned details reflect the criteria regarding our quality inspections. They do not constitute any legal assurance of particular product features or of the suitability for a specific application. All of the values are applicable at the time when the product leaves the supplier's factory. The values stated are reference points, they are subject to being continually updated within the scope of product maintenance. A written sales agreement shall be required for the information concerning product specifications to have a binding character. Please refer to our warning notices, our product information sheets and safety data sheet.

Should you require further information and technical advice, our Applications Engineering Department and the relevant R&D Department are at your disposal.

Our product information and (applications) engineering consultancy services, whether communicated orally, in writing or by means of tests, are in accordance with the current status of the knowledge and experience gained by us.

We reserve the right to modify and update our products within the scope of technical progress and further developments within the company. This information is provided without engagement. The sole purpose of such information is to provide details on the properties of our products and their potential applications. It does not constitute any guarantee and is not intended to be an assurance of any particular properties or suitability for a specific application. The client or user is thereby not exempt from carrying out his/her own testing to determine the suitability for the intended processes, purposes and applications by members of staff with the appropriate qualifications. This also applies with regard to the protection of proprietary rights of third parties. Brand or trade names of other companies are mentioned merely by way of example and do not constitute any endorsement, the use of other products of the same nature is not excluded.

*No concluding knowledge is yet available regarding trial products still in the testing stage. Their specifications have not yet been conclusively determined and may change at any time during the testing stage. Therefore, it is not possible to make conclusive statements with regard to characteristics including, but not limited to their processability as well as the parameters for production and applications engineering. Subject to technical modifications and amendments.

