

# E-CTFE (Halar<sup>®</sup>) and ETFE – Thermoplastic fluoroplastic coatings for highest demands



## Technical Properties

### Types

E-CTFE (**Halar®**) is the most versatile partially fluorinated plastic which can be used for heavy-duty corrosion protection. Nowadays **Halar®** coating is available in 4 variants:

- E-CTFE (**Halar®**) standard green
- E-CTFE (**Halar®**) pharmaceutical white
- E-CTFE (**Halar®**) electrically conductive black
- E-CTFE (**Halar®**) electrically conductive grey

ETFE is slightly superior to E-CTFE in many significant points, but despite its good qualities has not yet conquered the market.

The following coating variants are available:

- ETFE unfilled
- ETFE filled

### Essential characteristics of E-CTFE (Halar®) and ETFE

All these variants have the following characteristics:

- excellent universal chemical resistance as per attached list
- very high abrasive resistance
- excellent elasticity and resistance to impact
- weather resistance
- repairable by welding with hot air
- thickness of coating 300 – 1500 µm

Characteristics	Unit	Halar® Standard Halar® Pharma	Halar® conductive black	Halar® conductive grey	ETFE
Electric conduction	Ω / cm	10 <sup>16</sup>	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>16</sup>
Suitable for foodstuffs to EC positive list		yes	yes	yes	yes
Hardness	Shore D	75	78	78	76
Heat conduction at 40° C	W/(m x K)	0.151	0.157	0.157	0.16-0,24
Chemical resistance		see techn. data sheet	see techn. data sheet	see techn. data sheet	see techn. data sheet
Elongation at break	%	280	265	265	250
Spec. weight	g/cm <sup>3</sup>	1.69	1.76	1.75	1.74
Temperature of use	°C	150	150	150	160

### Quality control

We inspect the complete surface of all E-CTFE (**Halar®**) and ETFE coatings to check it is non-porous. In addition we systematically test for the required thickness of coating with modern thickness gauges.

The results of the tests are recorded in a detailed test report and handed over to the customer. This is our standard procedure and guarantees flawless quality to meet the highest demands.

## Examples of applications

### Reaction container with heating coil



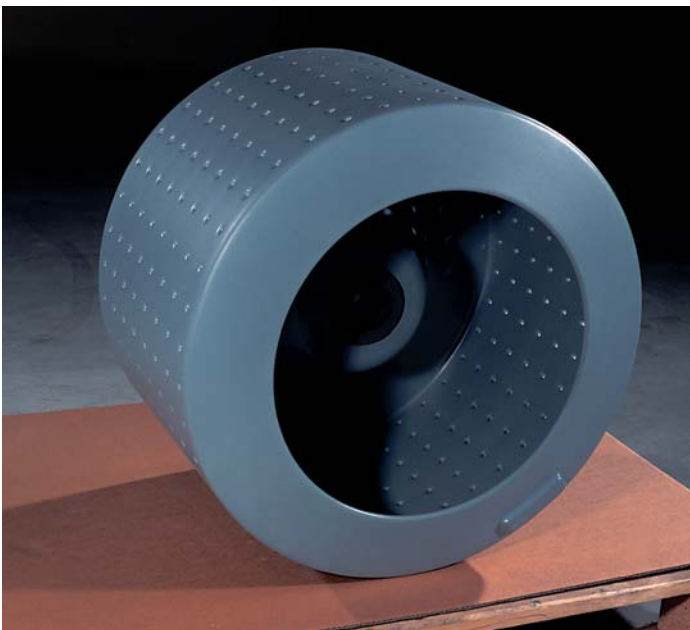
Our experienced staff find solutions to apply coating to designs that are difficult to access.

### Filter for water purification



A coating of E-CTFE (**Halar®**) is necessary to prevent contact between water and steel.

### Centrifugal drum



The light-coloured electrically conductive coating offers the operator a secondary safety in explosive regions and an easy-clean colour.

Good welding work allows repair of damaged coatings when there is no infiltration and the contamination of the coating is not too serious.

Our specialists will assess the situation and carry out any repairs at our company or in your plant, if so requested.

If the corrosion resistance of these partially fluorinated plastics is not sufficient, a more suitable solution may be found with other high performance plastics such as PFA, PEEK or PVDF.

## Areas of application for E-CTFE (Halar®) or ETFE coatings

are primarily for general applications where superior corrosion resistance and a high insulating capacity is required.

In the chemical industry:

- containers
- centrifuges
- reactors
- agitators
- filters
- electroplating accessories
- etc.

In the machine industry:

- guide vanes
- insulators
- pumps
- ventilators
- valves
- etc.



**Tricky coating tasks are our challenge – give us a call!**

**Buser coating processes – modern technology combined with experience and knowledge.**

Development and production of surface coating is our speciality. As a result of long years of experience we are able to offer sophisticated technology for a multitude of applications in all branches of industry - for individual components, serial production and repairs.

Our coatings enable the low-cost, custom-made manufacture and reconditioning of high quality industrial components.

We coat serial components up to 15 tons in weight and up to 8 meters long. Please contact us with enquires for larger parts.

We are the only company in Switzerland to offer both plastic, metal, ceramic and tungsten carbide coatings and hardplating welding and repair welding of castings as well.

Coated components stand up to the test of toughest application conditions protecting against wear and corrosion and offering thermal and electric insulation. The quality of our work is underlined by the certification to ISO 9001 and GTS.

### **Our service in surface technology:**

- competent, extensive advice
- design and production of workpieces
- preparation of the workpieces to be coated.
- coating to defined specification
- on-site coating
- quality control with report
- packing and shipping worldwide

ISO 9001  
SQS



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