

## Electrically Conductive Heating Paint

### CSG-IRE 550

#### 1. Characteristics:

Aqueous, solvent-free, electrically conductive, low-resistance, self-crosslinking, acrylatedispersion.

#### 2. Specification:

Color:			Black
Solid content	%	56	ISO 3251
PH value		8	ISO 976
Viscosity	mPas	2000 ± 20 %	ISO 2555
VOC	g / L	<0.2	
Pigment	µm	= <40	D90
Pigment	µm	13	D50

#### following:

#### 3. Other characteristics

Density	g / ml	1.25	ISO 2811-1
SD Value	m	0.1 m	ISTM

#### 4. Film properties:

Resistance, (RT air dried)	Ω/□	<b>2</b>	ISTM (*)
Resistance, (dried > 80°C )	Ω/□	<b>4 - 5</b>	ISTM
Film resistance (24h)	° C	120	ISTM
Tensile strength	N/mm <sup>2</sup>	2.3	ISTM
Productivity (200µm)	m <sup>2</sup> /L	5	ISTM (wet)

#### 5. Curing proposition :

Sintering temperature	° C	120	ISTM
Sintering time (thickness)	Min	2-10	ISTM
Speed (band )	m/min	5-10	ISTM

#### 6. Storage:

Shelf life (month)	M	12	ISTM
Frost stability (cycle)	F/H	5	ISTM (frost/heat)

In original sealed containers are COATING SUISS E dispersions and Varnishes are 12 months from delivery at 20 ° C storable. The Recommended storage temperature is + 5 until + 25 ° C. Freezing or temperatures above 30 ° C can adversely affect the viscosity and thus the average particle size and lead to sedimentation or coagulation. A Contamination with Bacteria, fungi or algae can irreversibly damage the product.

However, storage for longer than 12 months from the date of shipment means not necessarily that the product is useless. Before using a longer stored product, you first need the values of the specification check. A guarantee or liability after expiry of the 12 months COATING SUISSE GmbH does not accept. The product must be stirred in each case.

## 7. Delivery:

Plastic cans 1 liter (sample container)

Plastic canister 5 liters (20 liters / carton)

## 8. Processing:

Particularly suitable and recommended for machine processing by means of a racker / R2R, or Screen Printing. The paint is ready for use. The best adhesion is achieved on hydrophilic substrates or with primers hydrophilic modified surfaces / films.

## 9. Thinner:

To increase the electrical resistance (ohms) of the paint, without changing the viscosity of CSG-IRE-550, dilute only with **CSG-IR-P5**, (Newtonian polymer thinner).

## 10. Application:

Particularly suitable for the production of electrically conductive Low-resistance films and coatings. By diluting with water or even better by pure polymer, the varnish is adjustable in its electrical spectrum.

## 11. Industrial robot application:

Slight variability in the flow behavior (rheology) and the viscoelasticity of the paint are always due to the raw material. Before using a new batch, please check whether you may have to make any adjustment to your application equipment (volume dosage) in order to be able to meet your own specification.

## 12. Hazard identification:

For product safety, please refer to our current Material Safety Data Sheet. Preservatives MIT & BIT.  
SZID no / Application: SZID 236308  
According to RID / ARD no hazardous material  
GHS : Environment

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#### 14. Hints:

- Electrically homogeneous and "hot spot" free heat (IR) radiation is obtained only with a mechanical coating! Rolling, spreading or spraying does not always result in 100% homogeneous layer thicknesses.
- Contaminants can be cleaned easily with water and a little detergent.

#### 15, (\*) Ohm/Sqr ( $\Omega$ □) Value

**Please note that the specified Ohm/sqr value at the table above is only achieved if the coated film has been dried in the air at room temperature (RT).**

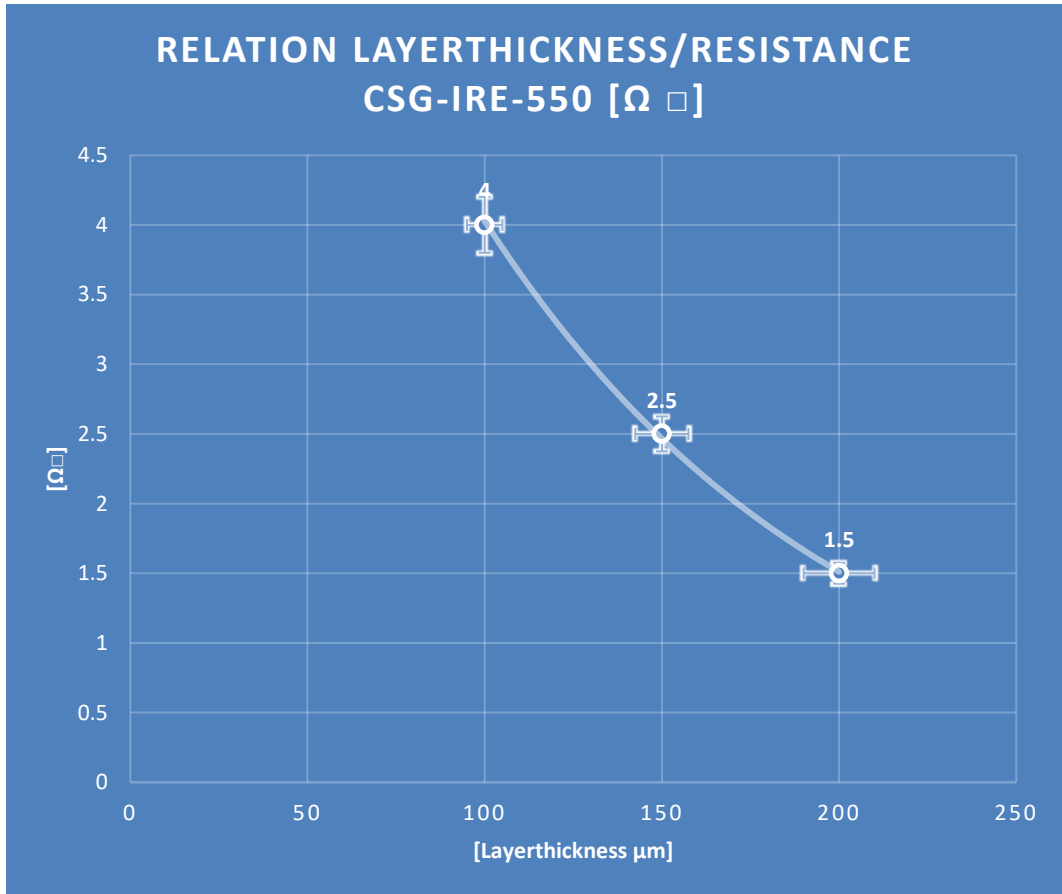
#### Screen printing:

**For a professional "heater" print, with absolutely homogeneous film thickness, distribution, it is best to use a screen type: "SEFAR Pet 1500-43-80 Y". These screens are to be cleaned immediately after use with warm water and a few drops of with warm water and a few drops of washing-up liquid.**



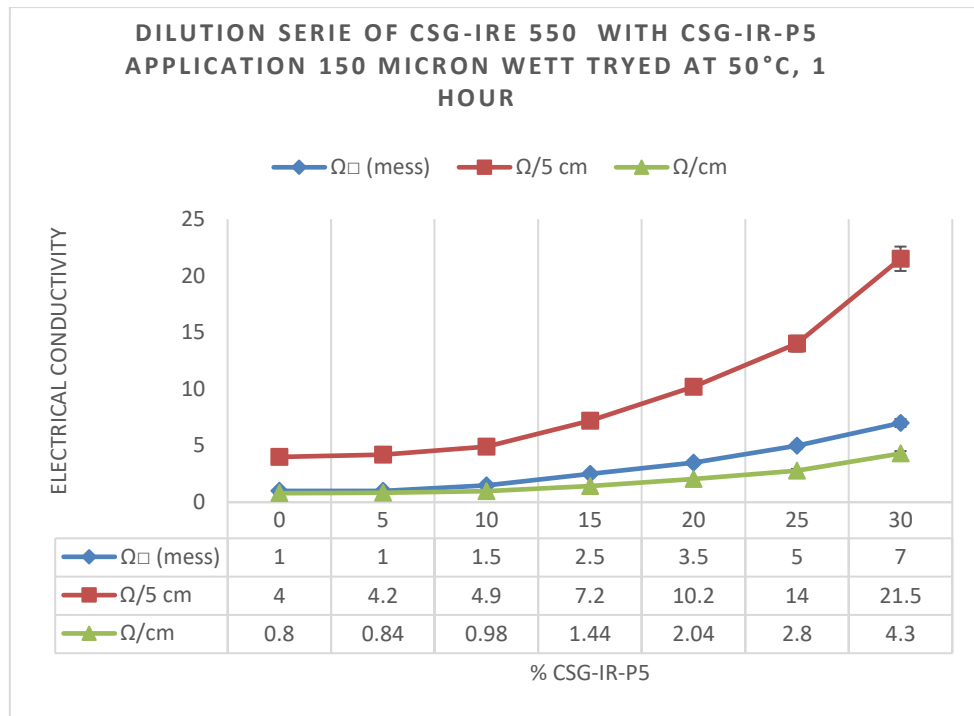
**Electrical floor heating film made by print screen**

The electrical resistance ( $\Omega \square$ ) in relation to the layer thickness



**Fig.1**

Values measured at a applied 200 micron wet film after air dried at room temperature (RT)



**Fig. 2**

**Dependence of the electrical conductivity of the CSG-IRE-550 paste by adding the Newtonian diluent CSG-IRE-P5.**

The graph also shows the dependence of the measured values on the measuring method. The measured values [Ohm/Sqr] result from a 4-point measurement (calibrated 4-point meter from EDTM), while the [cm]-based measured values were recorded using a point measurement (multimeter).

If the measured values of Ohm/Sqr are recorded via parallel opposing copper strip electrodes over the same distances, the recorded ohm values are up to 1/2 lower than those measured directly in the coated carbon layer.

**16. General Information:**

The information given in this technical Information correspond to our present state of knowledge. The given working conditions of the user are however beyond our knowledge and control. Due to the variety of application and processing possibilities, therefore, liabilities and liability are excluded. Without written permission, the product may not be used for purposes other than those described. In the case of new editions, previous leaflets lose their validity