



Preliminary Data - *CLEARCLAD HSR 415 CF*

Product code - 252B572

Product description

HSR 415 CF is a development of the HSR range of cathodic electrocoat systems. Its special features are these:

- Excellent hardness, scratch resistance and chemical resistance.
- Non-yellowing resin system.
- Excellent clarity and flow maintained without solvent addition.
- Enhanced resistance to weathering and colorant fade due to UV light stabilizer addition.
- Capable of conversion into NANOKLAD form for advanced hardness and scratch resistance by the addition of NANOKLAD Activator. *Refer to the NANOKLAD data sheet for addition rates and process details.*

Supply form

Moderate viscosity liquid. Solids content 45 – 50% w/w determined gravimetrically at 120C for one hour. Packaging options available on request.

Process equipment

All coating, handling and other process equipment is standard as described in the relevant sections of the *CLEARCLAD Process Installation and Operation Manual*. Permeate production rate should be 10% of coating bath volume per hour. Particle filtration of the coating bath is by cartridge-type pleated surface filters normally of one micron nominal rating for un-pigmented systems. Pigmented systems may require higher micron ratings depending on pigment type and loading.

Dilution method

See relevant section of the *CLEARCLAD Process Installation and Operation Manual*.



Product Data Sheet

Bath control

User Determined Bath Parameters

	Low	High	Optimum
Solids w/w	8.0	10.0	9.0
MEQ corrected	30	35	33
Solvent A264 w/w	2.0	5.0	2.5 – 3.5
Temperature °F (°C)	68 (20)	77 (25)	72 (22)

Derivative Parameters

Conductivity $\mu\text{S}/\text{cm}$	250	800	400 – 600
pH (not controlled)	Normal range 3.5 – 4.5		

Notes: New baths should be conditioned for 24 – 48 hours before use. At least one bath volume of UF permeate should be eliminated during this conditioning period. The MEQ should be adjusted as necessary before commencing production.

HSR 415 is designed to operate with the minimum of solvent maintenance. Baths operated at the optimum solids content and temperature, and with normal turnover rates, will stabilize at about 2.5 - 3.5% Solvent A264. Therefore only occasional additions of this additive should be necessary – for example in the case of a UF permeate elimination campaign. Low turnover baths may require more frequent additions of Solvent PM and some additions of Flow Additive FCA for maintaining efficiency (refer to the FCA data sheet for addition rates).

Deposition conditions:

Depending on required thickness, 30 – 150 volts for 30 to 90 seconds.

Curing conditions:

Standard curing condition is 180C metal temperature for 20 minutes. Maximum curing temperature is 190C. Minimum curing temperature is 170C when up to 60 minutes may be required.



Chemical resistance and corrosion protection

HSR 415 CF is essentially a non-yellowing version of standard HSR and so it has very similar resistance properties. At full cure and 20 microns thickness HSR 415 CF coatings will resist four cycles of the ANSI/BHMA perspiration test.

HSR 415 CF offers excellent corrosion protection for suitably pre-treated metal substrates. Users should ensure that any system is fully tested before committing to production. Advice on all aspects of corrosion protection is available from ClearClad Coatings.

UV light resistance and weathering performance

HSR 415 CF has enhanced resistance to UV light due to the presence of an internal UV stabilizer package. This extends the lifetime of colored coatings exposed to sunlight by resisting color change and fade. The ultimate resistance of any colorant system to UV light is determined by the particular pigment chemistry. Advice on colorant selection and durability is available from ClearClad Coatings.

Covering Power

The area covered in square feet using one (1) liter of HSR 415 can be determined by dividing 4627 by the coating thickness in microns. [This assumes 100% efficiency by the use of the TRAP UF reclaim system].

For example: Coating thickness = 15 microns

$$\text{Area covered per liter: } 4627 \div 15 = 308 \text{ square feet}$$

Pigmented or NANOKLAD variants will have different covering power. Refer to ClearClad Coatings for details.

For Health & Safety and environmental information – see separate MSDS.

The information given in this data sheet is provisional and may be subject to change without notice. Users should satisfy themselves that this product is suitable for their application.