

Product Description

CREO Interferential CERMET (IC) is a proprietary white coating produce by Physical Vapour Deposition and designed for the thermal control of space components and systems. Originally developed to withstand the extreme environments of the BepiColombo mission to Mercury, it features high thermo-optical performance and endurance. Space qualified on various substrates -both rigid and flexible- and in several space environments.



IC COATING ON AL AA6082 AND TI-6AL-4V RIGID SUBSTRATES ^(c)

BoL Specifications on smooth surface^{(a)(b)}

α	ϵ_N	R_{sh}
0.10	> 0.80	< 1E+06 Ω/\square

Solar absorbance (α) according to ECSS-Q-ST-70-09C (§C.2).

Infrared normal emittance (ϵ_N) according to ECSS-Q-ST-70-09C (§C.6).

Front-surface sheet resistance (R_{sh}) according to ASTM D257-99.

- (a) Properties may change depending on surface finishing.
- (b) Properties after 15years GEO qualification tests were found to be (average on many samples from different batches): $\alpha=0.11$ | $\epsilon_N=0.80$ | $R_{sh} < 2E+03 \Omega/sq$
- (c) The internal of the BepiColombo HGAMA Feed is blurred for Intellectual Property reasons.

Properties

IC Thickness	< 20 microns
Material	Fully inorganic
Deposited by	Physical Vapour Deposition in vacuum
Substrates (space qualified – TRL 8)	Ti6V4Al Al AA6082 Kapton™HN Kapton™FPC (foils)
Other substrates (space pre-qualified – TRL 6/7)	Al AA2024 Upilex-S Upilex-SGA PEEK CFRP
Mass areal density	about 50 g/m ²
Specular reflectance (%)	depending on surface finishing
Outgassing	RML % < 0.500 / CVCM% = 0.000 [according to ECSS-Q-ST-70-02C standard]
Coating adhesion	As for tape test according to ASTM D3359 (with cuts only on compatible substrate)
Humidity / Corrosion Resistance	Temperature: 40÷50 ±3 °C Relative Humidity: ≥ 93 ±3 % Duration: 10 days
Radiation Resistance	Details on request.
Thermal & Vacuum Cycling Resistance	Details on request
ATOX Resistance	Details on request

Precautions & Hints

- Inspect the adaptability of this product to your intended use, prior to its application. It is your responsibility to determine its adaptability.
 - If necessary, cleaning of the front surface using IPA (and other standard solvents) moist wipes is possible.
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Contacts

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