

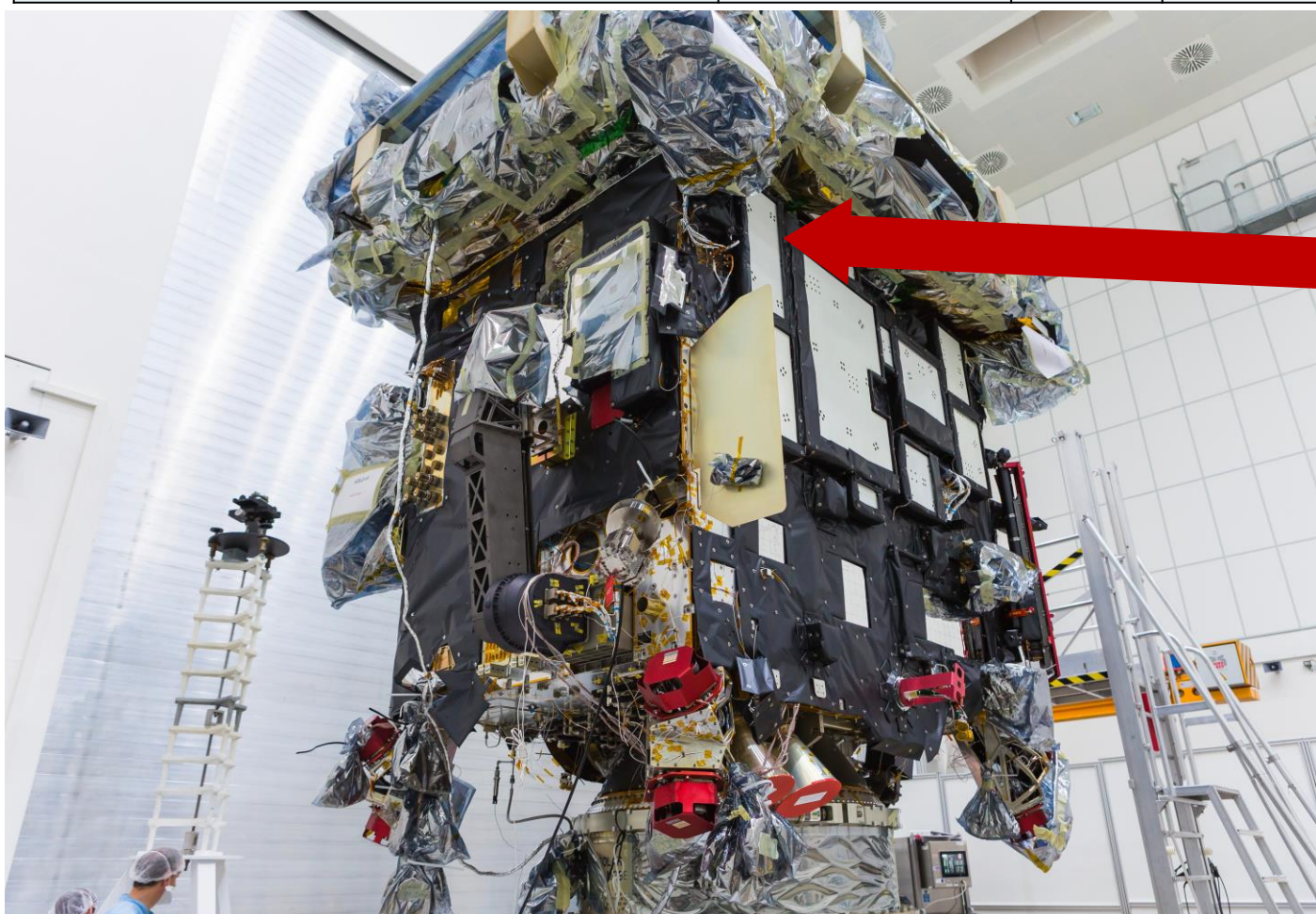
Overview

SolarWhite is a fully inorganic non-porous solar reflector coating designed for applications in space. It has been qualified by the European Space Agency and used on the Solar Orbiter mission on the instrumentation radiator assembly. It is undergoing final qualification for 18 year GEO orbit with ESA on the NEOSAT programme.

SolarWhite uses a CoBlast primer layer to achieve excellent substrate adhesion. It is applied using a wet spray process and can be cured at a range of temperatures. Some of the key benefits include:

- Non-porous, cleanable (IPA, Acetone, MEIS)
- REACH compliant
- Robust to AIT
- Almost totally diffuse in the UV/Vis/NIR range
- Excellent resistance to proton/electron irradiation
- Resistant to ATOX erosion
- Stable to temperatures up to 400 °C.

Testing		BOT	EOT
VUV (7444 Equivalent Sun Hours – 3 years GEO) Electron (equivalent 1 year 400 KeV) Proton (equivalent 1 yr hr at 240 and 45 KeV)	Absorption (α_s)	0.24	0.28
	Emissivity (ϵ)	0.83	0.83
Thermal cycling under vacuum: 100 cycles between +180°C and -180°C	Absorption (α_s)	0.18	0.18
	Emissivity (ϵ)	0.84	0.84



Typical Property	Value
Thickness	150 μm
Density / Weight	1.9 g/cm ³ or 285 g/m ²
Typical Absorption (α_s) on Al 2024T3	0.18
Typical Emissivity (ϵ_h) on Al 2024 T3	0.89
Adhesion (ECSS-Q-ST-70-13C)	Compatible (no change in optical properties)
Tested thermal range	-180°C to 180°C (under vacuum)
Outgassing (ECSS-Q-ST-70-20C)	CVCM: 0.01 (%) TML: 0.30 (%) RML: 0.03 (%)
Volume Resistivity on Titanium	200 M Ω .cm

SolarWhite absorptivity and emissivity values are very stable at high and low temperatures and under harsh radiation. The coating is static dissipative, can be applied to complex geometries and easily cleaned.

SolarWhite can be applied to:

- Titanium Grade 2 and Grade 5
- Additive Manufactured Titanium Grade 5
- Aluminium 2000, 5000, and 6000 series, scalmalloy
- Steel (stainless, mild)
- Copper
- Nickel and nickel plated aluminium
- PEEK, RFlaminate board
- Surtec 650 passivation surfaces



Interested in Trialling SolarWhite?

Please contact us at info@enbio.eu with the following information:

- Substrate type and thickness
- Component geometry and area to be treated
- Operating requirements (thermo-optical properties, temperature range, etc.)

