

Thermal Control Coating Technology

Space Applications Centre of ISRO has qualified the process of thermal control coating for spacecraft subsystem component made of different materials such as Anodized Aluminum, Chromated Aluminum, Bare Aluminum, Electroless Nickel plated Invar, Bare Invar, Silver plated Aluminum, Chromated Magnesium, Black anodic coated Magnesium etc for space use. Black paint is commonly utilized on the interior of the satellite, to facilitate radiant heat transfer among internal components.

Most commonly used space qualified paints are available normally in two colors, Black and White. Thermo-Optical properties of Thermal Control Coatings usually carried out are as per details given below:

Coating type	emissivity (ϵ)	Solar Absorptive (α)	α/ϵ
Black	0.90	0.90	1.00
White	0.85	0.20	0.23

Terminal Specifications

Total Mass Loss (TML) : $\leq 1.0\%$
Color : Black and White
Appearance : Flat / Matt finish
Dry Film Thickness (OFT) : 50 Micron to 70 Micron
Collected Volatile Condensable Material (CVCM) : $\leq 0.1\%$

Pre-requisites

- Painting know-how
- Conditioned Thermal painting booth
- Qualified paints, guns etc.

Technology Transfer from ISRO

ISRO is willing to offer the knowhow of this technology to suitable entrepreneurs / industries in India. Capable manufacturing industries interested in acquiring this knowhow may write with details of their present activities, requirements and plans for implementation, infrastructure and technical expertise available with them, their own market assessment, if any, and plans for diversification to the address given below: