DEPOSITION SCIENCES, INC.
A LOCKHEED MARTIN COMPANY

AO-Resistant Material Boosts VLEO Satellite Longevity

Sunshade® Tape for Thermal Control

October 2025

Deposition Sciences, Inc. (DSI), a wholly owned subsidiary of Lockheed Martin, specializes in advanced materials and optical coatings. For over 20 years, they've been producing their Sunshade® thermal control material, which is designed to provide reliable performance in extreme space environments.

DSI's Sunshade® offered in both free film and tape versions. Both versions can withstand an atomic oxygen (AO) fluence greater than 1×10^{22} (AO/cm^2). AO testing was performed concurrent with UV exposure to simulate survivability in 8 years of LEO. AO exposure testing showed negligible effect on Beginning of Life (BOL) and End of Life (EOL) performance.

Property (Tape Form)	**BOL**	**EOL**	**Change**
Solar Absorptance	0.12	0.13 to 0.14	+0.01 to +0.02
IR Emittance	0.81	0.81	0.00