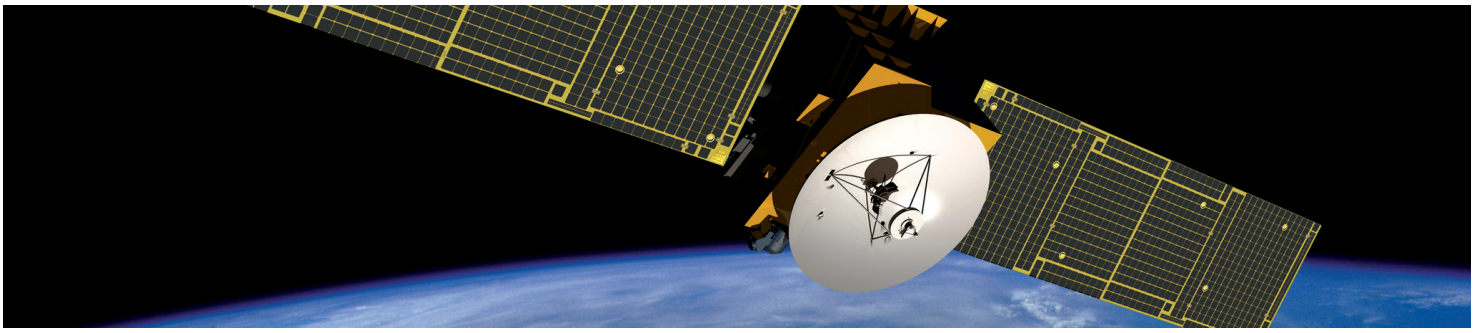
Lord Aeroglaze®
Space and Optical Coatings



Pexa is the exclusive European distributor of the Lord Corporation's Aeroglaze® range of specialist coatings. Aeroglaze® offers proven performance in the most demanding of environments. Key applications include space equipment and optics where light reflectance and thermal emissivity must be managed in difficult conditions, including in vacuums and at extreme temperatures. Pexa provides delivery and full technical support for the Lord Aeroglaze® range.

Typical application areas include; telescopes, baffles, waveguides, vacuum test chambers, probes, satellites, launch vehicles, aircraft, optics, antennae and radomes.

Coating Systems

Topcoats

- Aeroglaze® Z306 and Z307. These moisture cured polyurethanes provide a matt black finish with extreme durability, mar resistance, cleanability and resistance to environmental degradation. Many scientific evaluations of Z306 have established its properties for the high absorption of wavelengths in the visible spectrum (low reflectance), combined with low emissivity in the infra-red spectrum. These properties ensure maximum absorption of stray light & minimum scatter combined with minimum emission of heat which can disturb the light path. Z307 provides essentially the same properties with additional conductivity for the discharge of static electricity.
- Aeroglaze® A276. Gloss white finish provides extreme durability in harsh environments typical of aerospace and space applications. A276 provides high reflectivity in accordance with space industry requirements.

All Aeroglaze® topcoats perform their functions in vacuums and with low outgassing.

Primers

Lord Aeroglaze® primers provide enhanced adhesion and corrosion resistance for a wide variety of substrates used in the space and optical markets including; gold, aluminium, stainless steel, copper, silver, beryllium, magnesium, glass, nickel and FRP. Pexa also supplies the Lord Chemlok® range of adhesion promoters for a wide variety of challenging substrates. The primers have been tested in combination with the topcoats to ensure that systems meet the technical requirements of the space and optical industries.

- Aeroglaze® 9924.-Wash (etch) primer containing chromates suitable for a wide range of substrates including untreated aluminium, copper, silver, gold, galvanised steel and many other alloys.
- Aeroglaze® 9947. Wash (etch) primer chromate free suitable for a wide range of substrates including FRP, untreated aluminium, copper, silver, gold, galvanised steel and many other alloys. Allows compliance with regulations such as REACh if chromate pigments are not permitted.
- Aeroglaze® 9929. Epoxy primer containing chromates is suitable for a wide range of treated metal substrates. This primer additionally conforms to the requirements of Mil-P-23377.
- Aeroglaze® 9741. Epoxy primer chromate free suitable for a wide range of treated metal substrates. Allows compliance with regulations such as REACh if chromate pigments are not permitted.

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Key Performance and Specification Data

Property	Product	Factor	Performance	Source
Conductivity	Z307	Resistance ohms/ square	100 - 100,000Ω (typically 2800Ω)	Lord Corporation
Hemispheric reflectance	Z306	λ 546nm @ 20° incidence angle	0.048	NASA Heaney 1992
Hemispheric reflectance	Z306	λ 5 - 25 µm	0.08 - 0.11	Persky 1999
Outgassing	Z306 (+ primer 9929)	TML	0.60%	NASA outgassing section A
Outgassing	Z306 (+ primer 9929)	CVCM	0.01%	NASA outgassing section A
Outgassing	Z306 (+ primer P123)	TML	1.55%	ESA ECSS-Q-ST-70-02C
Outgassing	Z306 (+ primer P123)	CVCM	0.00%	ESA ECSS-Q-ST-70-02C
Outgassing	Z306 (+ primer P123)	RML	0.47%	ESA ECSS-Q-ST-70-02C
Outgassing	Z307 (+ primer 9924)	TML	0.80%	NASA outgassing section A
Outgassing	Z307 (+ primer 9924)	CVCM	0.04%	NASA outgassing section A
Outgassing	A276	TML	0.99%	NASA outgassing section A
Outgassing	A276	CVCM	0.08%	NASA outgassing section A
Outgassing	A276	TML	0.57%	NASA Ellis & Jaworske 2009
Outgassing	A276	CVCM	0.01%	NASA Ellis & Jaworske 2009
Solar Absorptance	Z306	α_s	0.96	NASA Lauder 2005, Henninger 1984
Solar Absorptance	Z306	α_s	0.95	ESA ECSS-Q-70-09
Solar Absorptance	A276	α_s	0.263	NASA Lauder 2005, Henninger 1985
Temperature resistance	Z306		-150°C to +130°C	Lord Corporation
Temperature resistance	Z307		-150°C to +130°C	Lord Corporation
Temperature resistance	A276		450K 500hrs in vacuum	NASA Ellis & Jaworske 2009
Temperature resistance	A276		-150°C to +130°C	Lord Corporation
Thermal Emissivity	Z306	ε_n	0.91	NASA Lauder 2005, Henninger 1986
Total Hemispherical emittance	Z306	ε_n	0.9	ESA ECSS-Q-70-09
Total Hemispherical emittance	Z306	ε_n	0.86	Lord Corporation
Thermal Emissivity	A276	ε_n	0.88	NASA Lauder 2005, Henninger 1987

Pexa is a supplier of high technology materials to the aerospace, defence, electronics and energy industries.
We are trusted partners of brand leading industrial product manufacturers; we employ progressive supply chain systems to deliver our promises. Our mission is to assist our customers to meet their own business objectives using our products and services; these products include surface finishing materials, aircraft maintenance products, application equipment and unique packaging solutions.

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