

Technical DATA SHEET

PROCESS NAME

VantAno™ — Low-Reflectivity Anodize



PROCESS OVERVIEW

VantAno™ is a specific aluminum material subjected to sulfuric acid anodizing combined with an inorganic metal pigment coloring process, specifically designed to achieve controllable, excellent low reflectivity and low Total Organic Carbon (TOC) outgassing. The pre-treatment etching, followed by the sulfuric acid anodizing step, creates a micro-rough texture on the surface. Subsequent coloring via the inorganic metal pigment process yields a stable, low-gloss black oxide layer compliant with MIL-A-8625 Type II standards.

HOW IT'S USED

Applied to machined aluminum components where reflected light or surface outgassing would otherwise interfere with optical alignment, sensing, or vacuum process stability.

KEY FEATURES

- 01 **LOW REFLECTIVITY**
Engineered surface texture suppresses stray-light reflection versus standard anodize.
- 02 **VACUUM COMPATIBLE**
Reduced outgassing supports use in vacuum and contamination-sensitive environments.
- 03 **DURABLE FINISH**
Retains the corrosion and electrical insulation capability.

PROCESS VALIDATION & QUALITY CONTROL

- Periodic Chemical Solution Analysis
- Coating Thickness & Measurement
- Salt Spray Test
- Reflectance Measurement

CERTIFICATION & COMPLIANCE

- Nadcap Accredited Chemical Processing
- ISO9001 & AS9100 Certified QMS
- RoHS & REACH Compliant

TECHNICAL SPECIFICATIONS

SPECIFICATION	DETAIL
Product Line	VantAno™
Base Standard	MIL-A-8625 Type II
Coating Class	Sulfuric Acid Anodize, Black (Low-Reflectivity)
Total Reflectivity (400–1000nm)	≤10%
Corrosion Resistance	≥336 hours neutral salt spray
Thermal Color Stability	No visible change @ 500°F
Coating Thickness	≥10 μm
Dimensional Growth	~33% outward (typ.)

APPLICATIONS / USE CASES

VantAno™ is used on precision aluminum components where reflected light, surface outgassing, or cosmetic glare must be controlled without giving up the corrosion of anodizing.

PROCESS & VACUUM CHAMBERS

- Chamber walls, liners and hardware in vacuum deposition or etch systems.

OPTICAL & METROLOGY MODULES

- Baffles, apertures and housings around alignment and inspection optics.

PRECISION MOLDS & JIGS

- Fixtures and tooling surfaces where glare interferes with visual referencing.