

# ACT

ADVANCED COATING TECHNOLOGIES, INC.

## AEROSPACE

### WHY ADVANCED COATING TECHNOLOGIES:

- Industry Leading Research and Development Team
- PVD and DLC Coating Capabilities
- Extensive Material Coating Testing
- Enhanced Quality Control & Quick Turnaround
- Ph.D. Scientist on staff
- ISO 9001 & AS9100 Certified

ACT has developed a range of surfaced engineered solutions to help the aerospace industry solve problems and improve efficiency.

Using ACT's low temperature Physical Vapor Deposition (PVD) and advanced Nano-Structured DLC coatings we have been able to dramatically increase the lifetime of critical aerospace industry components.

PVD coatings help reduce friction and wear, increase lubricity to minimize potential hazards and protect against corrosion with enrichment of the surface layers.

#### **Dr. Andreas Schuetze,**

VP of Technology and Lead Scientist

- Master's Degree in Physics and Ph.D. in Mechanical Engineering
- (4) Registered Patents and more than (20) Published Papers
- Contributor / Professor at UCLA & Technical University, Zurich
- Former head of Research & Development at OERLIKON (Balzers)

**You make it First...**  
**We make it *Last!***

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## Common Coatings - Aerospace

Average coating thickness = 2 microns

Coating	Coating Material	Color	Hardness [HV]	Friction Coefficient	Thickness [Microns]	Max. Working Temperature	Characteristics	Common Use
TiN	Titanium Nitride	Gold	2400	0.50	1-7	600c - 1100f	The General Purpose Coating	Steels - Cast Iron - Aluminum - Bronze - Copper
ALTiN/TiAlN	Aluminum Titanium Nitride	Dark Grey	3400-3600	0.60	1-4	700c - 1300f	Universal High Performance Coating	Steels - Copper
TiCN	Titanium Carbonitride	Silver Grey	3500	0.25	1-4	400c - 750f	Conventional Coating	Steels - Alloyed Steels - Superalloys - Cast Iron - Wood - Bronze - Copper - Aluminum
ZrN	Zirconium Nitride	Light Gold	2400	0.30	1-4	550c - 1300f	Monolayer Ti or Cr based adhesion layer	Steels - Alloyed Steels - Superalloys - Cast Iron - Wood - Bronze - Copper - Aluminum
CrN	Chromium Nitride	Silver Grey	1800	0.30	1-4	700c - 1300f	Standard Coating for Non-Cutting Application	Steels - Copper
DLC	Diamond Like Carbon	Dark Grey	2400-4000	0.1-0.2	1-10	200c - 400f	Ultimate Performance Coating	Low Friction Properties - Molds & Mold Components - High Performance Moto & Auto - Aerospace - Bearings
DLC Plus	Diamond Like Carbon	Black	2400-4000	0.1-0.2	1-8	200c - 400f	Ultimate Performance Coating	Low Friction Properties - Molds & Mold Components - High Performance Moto & Auto - Aerospace - Bearings
X-LC (MOS)	Molybdenum Disulfide	Black	600	0.10	1	200c - 400f	Low Coefficient of Friction	Bearings - Sliding Parts - Injection Molding - Engine Components - Shaft/Gear - Vacuum / Space
ALTiSiN	Aluminum Titanium Silicon Nitride	Dark Grey	4500	0.45	1-4	1200c - 2200f	Extremely High Hardness	Dry Milling - High Speed Ops
Quantum(x)	ZrN+TiN Top Layer	Gold	2400	0.30	1-4	660c - 1100f	High Wear Resistant Coating	Milling Titanium
NACO	Titanium Aluminum Silicon Nitride	Dark Grey	4500	0.45	1-4	1200c - 2200f	Extremely High Hardness	Steels - Alloys - Hardened Steels
NACRO	Titanium Aluminum Chrome Nitride	Dark Silver	4500	0.45	1-7	1100c - 2000f	Extremely High Hardness	Steels - Alloys - Hardened Steels - Cast Iron
NEXCEL	NACRO+MOS Top Layer	Black	4500	0.25	1-7	1100c - 2000f	Low Coefficient of Friction	Cutting of Non-Ferrous Material