

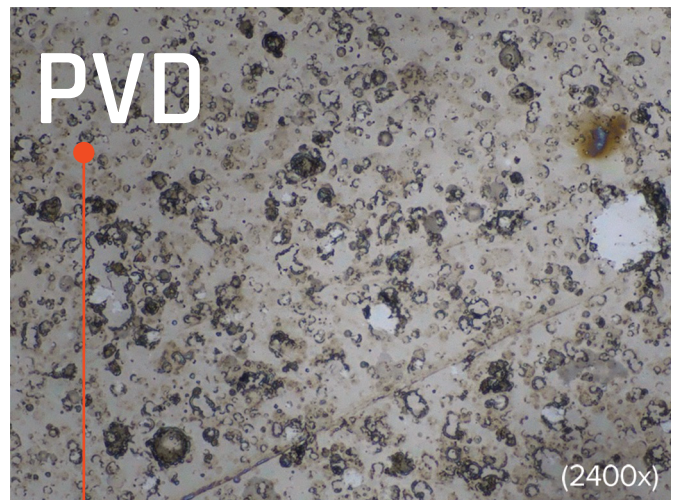
FORTIPHY™ XVD

CrN

WHILE OTHERS FLAKE AND PEEL OUR BOND HOLDS STRONG



- EXTENDED DIE LIFE
- QUALITY BENEFITS
- STRONG AND DENSE BARRIER
- NEAR DEFECT FREE



- SHORTER DIE LIFE
- QUALITY ISSUES
- WEAK AND INCONSISTENT BARRIER
- LARGE DEFECTS PRESENT

FORTIPHY™ XVD



ADVANTAGES

- Excellent solder and washout protection
- Superior abrasive wear
- Unprecedented adhesion strength
- Reduces friction and prevents galling
- Thin film coating preserves critical dimensions of tight tolerance parts
- Can be stripped and re-applied multiple times

INDUSTRIES

Automotive
Medical
Food Processing
Military
Others

APPLICATIONS

Metal Forming Tools
Deep Drawing Punches and Dies
Aluminum Die Casting Tools
Plastic Injection Molds
Precision Machine Components
Out-of-the-box applications

COATING PROPERTIES

Composition	CrN coating
Crystal structure	FCC (FACE CENTERED CUBIC)
Microstructure	Non-columnar, equiaxially grained
Average grain size, nm	16–25
Modulus of Elasticity, GPa	370–400
Nano-Indentation Hardness, GPa	22–30
Adhesion strength (scratch test critical load), N	115–120
Coefficient of Friction (CoF)	0.09–0.12 (DIESEL FUEL LUBRICATED)
	0.18–0.22 (DRY NITROGEN, WC BALL)
	0.28 ±0.02 (DRY AIR, ALUMINA BALL)
Coating Wear Rate, mm³/Nm	1.97 x 10 ⁻⁷
Coefficient of Thermal Expansion (CTE), x10⁻⁶/K	5.5–7 (20–600°C / 68–1112°F)
Oxidation Temperature (max. service temperature)	800–850°C / 1472–1562°F
Color	Silver