


# Richkote™

## PVD COATING TECHNOLOGY

*Timeless Beauty and Flawless Function*
*Protected by Our Advanced Coating Processes*

# RICHTER PRECISION INC.

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Richter Precision Inc. is North America's preeminent Physical Vapor Deposition coating company. Since 1978, we have been helping customers improve the appearance and durability of their products through the deposition of advanced thin-film metal-ceramic coatings. Our team can support your product development through all phases of design, engineering and production. Let us enrich your product with our Richkote™ decorative PVD coatings.

## PVD Coating

### What Is Richkote™ PVD Coating

Richkote™ is our proprietary decorative PVD coating process. This process incorporates the latest "in-line" decorative PVD coating technology to produce standard BHMA finishes, as well as non-traditional and custom colors. Richkote™ delivers a finish that is smoother, brighter, and harder than what can be achieved through typical plating methods. The color uniformity of our coatings from cycle-to-cycle and year-to-year is tightly controlled in order to ensure customer satisfaction. Our Richkote™ PVD coatings' durability, varied color options, and unmatched finish make it the premier surface treatment choice.

### What Is PVD Coating

Physical Vapor Deposition (PVD) is a term used to describe a family of vacuum coating processes. The most common of these PVD coating processes are evaporation (typically using cathodic arc or electron beam sources), and sputtering (using magnetic enhanced sources or "magnetrons", cylindrical or hollow cathode sources). All parts are processed in a vacuum chamber at working pressure (typically $10^{-2}$ to $10^{-4}$ mbar) and generally involve bombardment of the substrate to be coated with energetic positively charged ions during the coating process to promote high film density. Additionally, reactive gases such as nitrogen, acetylene or oxygen may be introduced into the vacuum chamber during metal deposition to create various compound coating compositions. The result is a very strong bond between the coating and the substrate and tailored physical, structural and tribological properties of the film.

## Characteristics of the Decorative PVD Coating Process

- Performed in a vacuum
- Relatively low process temperature
- Line of sight coating deposition
- Coating exhibits a physical bond to the substrate
- Average thickness: 0.2-0.5 µm, or .000008-.00002”
- No post-coating processing is required
- PVD deposits a conformal coating: pre-existing matte, brushed & polished finishes will be replicated.

## Benefits of Richkote™ Decorative PVD Coating

1. Superior Wear Resistance - Richkote™ PVD coatings are very hard: Micro-Hardness > 80 Rc is typical. This high hardness provides excellent scratch and scuff resistance.
2. Corrosion Resistance – Along with an ASTM Service Condition 2 of Chrome Plating, PVD will yield in excess of 1000 hours in neutral salt (B-117) and 96 hours in CASS.
3. Color Replication – Between frozen process controls and quality assurance, the Richkote™ process will consistently produce colors from order to order.
4. UV Protection – PVD films are inorganic and, thus, impervious to ultraviolet degradation. No organic clear topcoats are required.
5. Color Fastness – PVD films are colorfast over time.
6. Biocompatible - Richkote™ PVD coatings are chemically inert and hypoallergenic.
7. Versatility – Using our Richkote™ PVD coatings can allow a customer to transform a single un-coated substrate into a virtually limitless product line, simply by changing the appearance with our coatings.
8. Environmentally Friendly - Richkote™ PVD is a 100% environmentally friendly manufacturing process, with no harmful waste products. Additionally, these coatings are all RoHS compliant.

## Substrate materials suitable for the Richkote™ process

- ***Stainless Steel***
- ***Titanium***
- ***Brass***
- ***ABS Plastic***
- ***Tool Steel***
- ***Aluminum***
- ***Zinc Die-Castings***
- ***…and more***

*Please note that some materials may require pre-coating plating with Ni & Cr in order to be suitable for this coating process.*

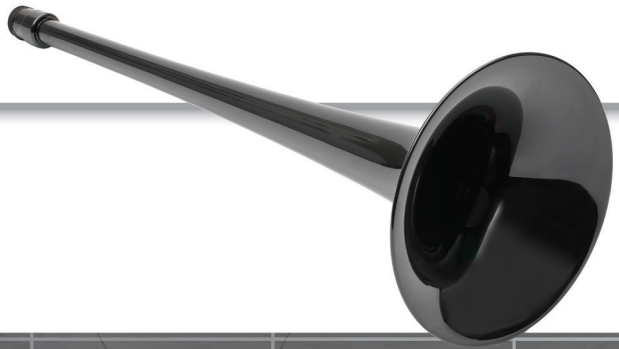
## The following are typical applications for the Richkote™ process:

- Kitchen & Bathroom (Plumbing Fixtures)
- Door & Window Hardware
- Automotive (Interior & Exterior)
- Marine Hardware & Trim
- Watches
- Jewelry
- Aircraft Interiors
- Appliances
- Architectural
- Firearms
- Cutlery
- Musical Instruments
- Fashion Accessories
- Signs & Displays
- Consumer Products

…the only limit is your imagination!

## Richkote™ PVD Coatings

- ***Anthracite***
- ***Black***
- ***Blue***
- ***Brass***
- ***Bronze***
- ***Chameleon***
- ***Champagne***
- ***Copper***
- ***Flat Dark Earth***
- ***Gold***
- ***Graphite***
- ***Nickel***
- ***Oil-Rubbed Bronze***
- ***Plum***
- ***Rainbow***
- ***Rose Gold***
- ***Stainless Steel***
- ***Custom colors, upon request***



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*with any coating questions*