

EVERYTHING YOU NEED TO KNOW ABOUT CERAMIC COATINGS AND SPRAYS. PERIOD.

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With the increased popularity of ceramic coatings in the Marine, Automotive and RV (Recreational Vehicle) markets, it has become even more difficult for the consumer to determine which brand or product is best for them.

Ceramic is the buzzword used for a variety of products at a wide range of price points. These types of products include ceramic soaps, ceramic sprays, ceramic waxes and ceramic coatings. With all of the fancy marketing and the constant use of the word “ceramic” it is hard to figure out the difference between these products.

Unlike the food industry where the USDA regulates the use of the word “organic,” there is no regulation on the word “ceramic” in the protective coating industry. This leads to a very liberal use of the word, which makes it extremely confusing for the consumer. What makes a product a ceramic is the use of silicon-based polymers such as SiO² (silicon dioxide), silsesquioxane, silica, or PDMS (polydimethylsiloxane) to name a few. A product

only needs to contain .01% of one of these silicon-based polymers to be considered a “ceramic”.

To help solve this dilemma we want to discuss the key differences between a “ceramic” spray and a true ceramic coating. These differences include:

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- Percentage of Active Ingredient
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- Formulation
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- Price
-
- Durability/Protection
-
- Gloss & Hydrophobic Qualities
-
- Application
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PERCENTAGE OF ACTIVE INGREDIENT

The first key difference between a “ceramic” spray and a ceramic coating is the percentage of silicon-based polymers (active ingredient) in the formulation. The active ingredient is the workhorse in a product that provides gloss, protection and hydrophobics. Most “ceramic”

spray products on the market contain between 1%-13% of the active ingredient, whereas ceramic coatings contain 20-65%. This depends on the brand and type of coating. Generally automotive coatings will be on the lower end of this scale whereas marine and RV will be higher.

FORMULATION

The second key difference is the formulation used for a “ceramic” spray compared to a ceramic coating. Most, if not all, “ceramic” sprays are water-based formulas. These formulas generally consist of a small amount of the active ingredient, coupling agents, and water. Water will typically make up 70% or more of a “ceramic” spray formula.

Without these solvents, applying a ceramic coating would be nearly impossible, like trying to apply glue or molasses to paint or gel coat. Once the coating has been applied, the catalysts take over. These catalysts help expedite the curing process of the active ingredient, once exposed to oxygen. During this curing process the ceramic coating transforms from a liquid state into a solid, bonding directly to the surface it was applied.

Ceramic coatings are solvent-based formulas with high quality catalysts. The solvents in a ceramic coating play a very important role. Solvents help keep the high percentage of the active ingredient in a liquid state, allowing you to apply the coating to the surface and buff it off with relative ease.

Water based “ceramic” sprays do not achieve the same level of hardness or bonding with the surface.

PRICE

Now that we understand the differences in the percentage of active ingredient and the formulation, it's easy to see why the prices of these products varies so much. "Ceramic" spray prices range from \$15 on the low end to \$50 plus on the high end. These spray products usually come in 8oz or 16oz sizes.

Ceramic coatings have a wider range of price points and sizes, depending on the type of coating you are looking for (Auto, Marine, RV). The variety of sizes includes 30ml, 50ml, 100ml,

120ml, 160ml and 250ml. The 30ml and 50ml sizes are most common in the Automotive industry whereas the 160ml and 250ml sizes are most common in the Marine and RV industries. Auto ceramic coatings range in price from \$60-\$200, with the average price of approximately \$80-\$90 for consumer grade coatings. Marine and RV ceramic coatings have a wider range of prices given the variety of sizes. 50ml of Marine or RV coatings start at \$85 and go as high as \$150. 250ml of Marine or RV coatings start at \$295 and go as high as \$500 or more.

NOTE: These prices are sourced from reputable ceramic coating brands.

**DURABILITY/
PROTECTION**

In the same vein as price, the durability and level of protection have a direct correlation with the percentage of active ingredient and the formulation. In most cases, the higher percentage of active ingredient, the longer a coating or spray will last and the better the level of protection it will provide.

Water-based "ceramic" sprays will typically last and provide protection for 2-4 months (depending on location), whereas ceramic coatings will typically last between 1-3 years (without re-application) depending on the type of coating (Auto, Marine, RV).

Aside from the longevity, the level of protection varies between "ceramic" sprays and ceramic coatings. "Ceramic" sprays will provide similar protection to a ceramic coating, like UV protection, stain resistance, and ease of cleaning,

just to a lesser degree. Because "ceramic" sprays are water based and not solvent based, they do not bond as well to the surface nor do they create a hard protective layer. These "ceramic" sprays will leave a softer layer of protection on top of the surface, which will slowly degrade over the course of a few months.

Ceramic coatings provide superior protection against UV damage, stains, oxidization, chemicals, salt, rust and hard water marks. Ceramic coatings also provide a surface that is much easier to clean, even compared to a "ceramic" spray. Ceramic coatings achieve a much higher level of protection because the coating bonds directly with the surface it is applied to, filling in to microscopic pores, and creating a hard protective layer on top of the surface. This hard protective layer is what allows a ceramic coating to last 1-3 years as opposed to 2-4 months.

**GLOSS &
HYDROPHOBIC
QUALITIES**

Gloss and hydrophobic qualities (water beading) are two of the most advertised properties in a ceramic product. People love to see their vehicle, boat or RV shine and watch the water beading on the surface. Both "ceramic" sprays and ceramic coatings provide a glossy and hydrophobic surface. Similar to the durability and protection, "ceramic" sprays will provide less

gloss (3%-10% on the gloss meter) compared to a ceramic coating. The hydrophobic qualities will also diminish faster with a "ceramic" spray (within 1-4 months) compared to a ceramic coating (within 1-3 years). The hard protective layer of a ceramic coating adds a deeper level of gloss to the surface while greatly extending the hydrophobic qualities of the surface.

APPLICATION

The final difference between a “ceramic” spray and a ceramic coating is the application method and how quickly and easily it can be applied.

The biggest benefit to a water-based “ceramic” spray is the ease of application. These products are all spray-on and wipe-off applications that require less prep work before applying and a much faster application. Standard prep for a “ceramic” spray application is to wash the vehicle, boat or RV with soap and water, then apply the product to a clean, dry surface. Typically, this application will take about 30 minutes to an hour, depending on what you are applying it to. It is not required to remove surface imperfections, such as swirl marks and scratches for you to see the benefits of a “ceramic” spray, but for optimal results it is recommended.

Ceramic coating applications are much more labor intensive and require a greater level of prep to achieve optimal results. Since a ceramic coating is providing a hard protective layer on the surface, it is important to remove any

surface imperfections before applying a ceramic coating. If you do not remove these imperfections before applying the coating, it will make these imperfections tougher to remove in the future. Surface imperfections may also affect the overall performance of the ceramic coating (durability, protection, gloss and hydrophobic qualities).

Standard prep for a ceramic coating application includes: Washing, clay bar (for vehicles), compounding and polishing the surface, decontaminating the surface with an alcohol based cleaner, then applying the ceramic coating (most ceramic coatings require or recommend two coats). While this process seems long and arduous, you are rewarded with an extremely glossy surface that is protected for years instead of months.

For a vehicle, a ceramic application will take approximately 3-6 hours depending on the amount of prep, whereas boats and RVs can take several days depending on the size and amount of prep required.

RESULTS		
	“CERAMIC” SPRAY	CERAMIC COATING
Percentage of Active Ingredient	1-13%	20-65%
Formulation	Water-based	Solvent-based
Price	\$ \$	\$ \$ \$ \$ \$
Durability/Protection	★ ★ (2-4 months)	★ ★ ★ ★ ★ (1-3 years)
Gloss & Hydrophobic Qualities	★ ★ ★ ↓	★ ★ ★ ★ ★
Ease of Application	★ ★ ★ ★	★ ★ ★

We have gone into great detail about the key differences between a “ceramic” spray and a ceramic coating. Our goal is to better educate the consumer and help them make the best decision for their specific wants and needs.

If you are a person that loves to consistently take care of your vehicle, boat or RV, and prefer an easier application, than a “ceramic” spray is for you. If you are a person that wants the ultimate in surface protection, and is willing to put in the time and effort to achieve better and longer-lasting results, then a ceramic coating is the clear choice.