

The vast majority of automotive paint products can be divided into 2 different resin types Thermoplastic and Thermoset.

Thermoplastics

Also known as 1K (component) products. These will reflow when exposed to heat or solvent. Lacquer is a good example. If you soak a rag in lacquer thinner let sit on the fender of a factory 1957 Chevrolet paint job, you will be able to just wipe the paint right off. Also when you buff out this same 57 Chev, the heat and friction from your pad and compound will may the paint reflow for a smoother finish.

Thermoplastics cure by the release of solvent, they do not use a catalyst. Because of this they have reduced durability and gloss levels. They also tend to continue to shrink for a long time. Meaning that primer sand scratches and body work may reappear later on.

Thermoset

Also known as 2K (component) products. Almost all factory finishes are thermoset. They cannot be reflowed by either heat or solvent.

Thermosets use a catalysing agent to help cure. This helps them cure with greater durability and gloss and have very little shrinkage during the curing process. However, because of these catalysing agents we have limited time to use them once they have been mixed, this is known as a pot life.

IMPORTANT: Thermoplastic and Thermoset products do not always mix. If the products chosen are not compatible, wrinkling or lifting can occur.

Resin Test

If you are working on a car and don't know which paint is on it, you can soak a rag in lacquer thinner and let it sit on the paint for 5 minutes. If it wipes away or wrinkles then it is probably Thermoplastic and should all be removed. If it does not affect the finish then it is probably Thermoset and should be a reasonably strong finish to start with.

There are also 2 basic styles of paints, single stage paints and basecoat clear coat paints.

Single stage paints

Single stage paints do not get clear coated, because of this they should only be shot in solid colors. If you shoot a metallic color, it must be perfect, because you cannot wet sand and buff it. If you try to do this you will cut the top of the metallics off and this will leave you with bad flake orientation and a very mottled and hazy look.

Basecoat Clearcoat

Basecoat clearcoat paints are now used by every car manufacturer, even for solid colors. Because with a nice layer of clear coat on top of the color, you can wet sand and buff out any scratches and paint imperfections. This is nice when they have any mishaps in the factory or dealerships, they do not have to repaint.