Automotive Refinish Terminology

Accelerator: A substance that when added to a paint will speed up the rate of cure.

Acetone: A very fast evaporating solvent with high solvency for certain types of compounds and resins. Has a characteristic ether-like odor.

Acrylic Urethane: A coating based on urethane chemistry, which also includes acrylic chemistry as part of the cross-linked polymer backbone (see Urethane).

Activator: A necessary component used to provide a chemical reaction to cure paint. (See Hardener).

Additives: Chemical substances added to a finish in relatively small amounts to impart or improve desirable properties. Examples are UV screeners, flow agents, defoamers, fish eye eliminators, etc.

Adhesion: The phenomenon by which one material is attached to another by means of surface attraction.

Air Cap: The front of a spray gun nozzle that directs compressed air against the paint to form and shape an atomized cloud of droplets.

Air Spray: A system of applying paint in the form of tiny droplets. The paint is broken into droplets (atomized) by a spray gun as a result of being forced into a high velocity air stream. The shape and paint density of the resulting droplet cloud can be controlled by air pressure, paint viscosity and gun tip geometry.

Airless Spray: A system of applying paint in which the paint, under high pressure, is passed through a nozzle and broken into droplets (atomized) when it enters the lower pressure region outside the gun tip.

Alkyd: A coating based on a polyester binder. Such polyester are chemical combinations of molecules that contain more than one acid or alcohol group.

Ambient: Usual or surrounding conditions.

Aqueous: Describes a water-based solution or suspension.

Atomization: The formation of tiny droplets of liquid as in the paint spraying process. Atomization is usually caused by turbulence in an air stream, or a sudden drop in pressure.

Baking: Application of heat to cure and dry a coating. In automotive refinishing, baking is used to speed up the drying of air-drying finishes and is sometimes called force drying. The metal temperature in refinish baking usually does not exceed 180 degrees.

Basecoat: A color coat requiring a clearcoat. The basecoat provides color effects and appearance, while the clearcoat provides gloss as well as UV and chemical resistance.

Binder: The paint material that forms the film. So-called because it binds the pigment and any additives present into a solid durable film.

Biodegradable: An organic materials capacity for decomposition as a result of attack by microorganisms. Sewage treatment routines are based on this property. Phosphates and chlorinated hydrocarbons (DDT) are not biodegradable.

Blending: The mixing together of two or more materials; or the gradual shading of paint from one panel to adjacent areas to assure color consistency.

Blistering: The development of hollow bubbles or water droplets in a paint film. It can occur rapidly or over a long period of time after application. Blistering may occur from the presence of unreacted acid within the paint film.

Blushing: The appearance of whitish or cloudy areas in a paint film, caused by absorption and retention of moisture in a drying paint film.

Buffing Compound: A soft paste containing fine abrasive in a neutral medium, used to eliminate fine scratches and polish topcoat.

Build: The amount of paint film deposited on a substance (the depth or thickness of which is measured in mils.

Carcinogen: A material that has either been found to cause cancer in humans or to cause cancer in animals and therefore is considered capable of causing cancer in humans. Findings are based on the feeding of large quantities of a material to test animals or by the application of concentrated solutions to the animal? skin. A material is considered to be a carcinogen if (1) it has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen; (2) it is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens, published by the National Toxicology Program (NTP) latest edition; (3) it is regulated by OSHA as a carcinogen; or (4) if one positive study is published.

Clearcoat: A paint containing no pigment or only transparent pigment, which provides gloss and durability when used as protection over a basecoat.

Clouding: The formation or presence of a haze in a liquid or in a film.

Color Coat: The single stage or basecoat that provides the visible color of a coating system.

Color Match: Achieved when the applied color duplicates all aspects of the original color? appearance in hue, value and chroma.

Color Sanding: The sanding of a paint film to prepare for buffing or recoating.

Compounding: Use of an abrasive material, either by hand or by machine, to smooth and bring out the gloss of the applied topcoat.

Cross-coat: A method of painting application often used with high solids paint. The technique involves a side-to-side application followed by a top-to-bottom application with very little flash time.

Delamination: The loss of adhesion between two layers of paint, causing material to separate from the painted surface or substrate.

Dew Point: The temperature at which water vapor condenses from the air. The dew point varies with the relative humidity.

Dirt Nibs: Small specks of foreign material in a dried paint film. Then can be removed by scuff sanding and polishing.

DOI (Distinctness of Image): A measurement of the accuracy of a reflection in a paint film.

DFT (Dry Film Thickness): The resultant film thickness of a coating after it has reached its final state of dry or cure.

Dry Sanding: A method of abrading the surface by hand or machine without the aid of any lubricant (water).

Dry Spray: Sprayed paint which loses so much solvent in the air that it becomes too dry to flow out over the surface. This normally occurs when the chosen reducer is too fast for the atmospheric conditions. Dry spray has a lower gloss than the normally sprayed surface.

Durability: Refers to the retention of gloss and performance properties in a paint film during the use of exposure to sunlight.

Enamel: A term with several meanings: (1) a paint which forms a film by chemical union of its component molecules during cure; (2) a paint having a highly glossy, finished appearance; (3) in shop terminology, any paint which is not lacquer.

Epoxy: A type of paint, adhesive or plastic noted for high mechanical strength, good adhesion and chemical resistance.

Evaporation: The change from liquid to a gas. When solvents leave a wet paint film, they usually do so by evaporation.

Evaporation Rate: The speed with which any liquid evaporates.

Film Thickness Gauge: A device used to measure the coating thickness (film build) on a substrate. Magnetic units are used to measure the thickness of ferrous metals; electronic units are used on non-ferrous substrates.

Fish Eyes: A surface depression or crater in the wet paint film. Fish eyes are caused by repulsion of the wet paint by a surface contaminant such as oil or silicone. The depression may or may not reveal the surface under the paint.

Flake Orientation: The appearance of the metallic particles in a paint film during and after dry or cure. Selection of the correct aluminum flakes in the color mixing formula, proper application, etc., will lead to good flake orientation and thus to good color match and appearance.

Flash Point: The temperature at which the vapor of a liquid will ignite when a spark is struck.

Flash Time: The time between paint application and consecutive coats, and/or force dry.Fluid Needle: Parts in a spray gun that opens and closes fluid passages.

Force Dry: A method of accelerating the drying of paint by using heat (see Baking).

Gloss: The ability of a surface to reflect light. Measured by determining the percentage of light reflected from a surface at certain angles.

Gravity-feed Gun: A paint gun with the paint reservoir on the top of the gun, which allows the paint to flow into the spray area by gravity.

Guide Coat: A reference coat. For example: a thin coat of dark or tinted color applied over a primer to provide a visual check for smoothness when sanded.

Hardener: A necessary component specifically designed to ensure cure of an enamel finish. Another name for an activator.

Hiding or Hiding Power: The ability of a paint film to mask the color or pattern of a surface. May be measured while the paint is still wet or after it has dried, and these measurements may differ. Hiding power is measured by determining the minimum thickness at which a film will completely obscure a black and white pattern.

High Solids: Paints are described as having high solids when they contain more than 50-60% solids (by weight). High solids paints have lower VOCs.

Holdout: The ability of a surface to keep the topcoat from sinking in and causing a decrease in appearance or gloss.

Humidity: A measure of the amount of water vapor in the air. Absolute humidity reflects the quantity of moisture in the air compared to the maximum possible moisture content of air at the same temperature. Relative humidity is expressed as a percentage. Humidity has a great effect on the drying time of paints, in particular waterbornes.

HVLP (High Volume, Low Pressure): Describes a paint gun that uses a high volume and low pressure of atomizing air to apply material to a surface. This provides high transfer efficiency and lower overspray.

Isocyanate: A hardening agent used with acrylic urethane and other 2 component reaction type paints. It reacts with acrylic polymer, etc., to form a very durable coating.

Lacquers: Paints that dry by evaporative loss of solvent. The film remains susceptible to attack by the same or similar solvents. Lacquers can be based on nitrocellulose or acrylic resins.

Low Film Build: The condition of a paint film when it is too thin to provide protection to the substrate or withstand environmental conditions.

LVLP: Low Volume, Low Pressure (See HVLP)

Metallic Paint: Paint, which contains metallic pigment, usually in the form of tiny flakes. Generally these are aluminum or mica, and are used to increase the eye-appeal of the finish.

Mica (Pearl): A pigment used to increase the eye-appeal of the finish.

mil: A measure of paint film thickness, equal to one one-thousandth of an inch (0.00l inch).

Mist Coating: A light spray coat of high solvent content material for blending and/or gloss enhancement and metallic control in single-stage color, sometime known as drop coat or dust coat.

Mix Ratio: The proportion of ingredients to be blended together to make a ready-to-spray paint. For example, a clearcoat with a mix ratio of 4:1 requires the mixing of 4 parts of the clearcoat with 1 part activator. Mix ratios are normally done by volume.

Molecule: The smallest possible unit or amount of any substance, which retains the characteristics of that substance.

Orange Peel: An irregularity in the surface of a paint film resulting from the inability of the wet film to level out after being applied. Orange peel appears as a characteristically uneven or dimpled surface to the eye, but usually feels smooth to the touch.

Overall Painting: A type of refinish in which the entire car is completely repainted.

Over-reduce: To add more thinner or reducer to a paint than is normally necessary for application. This is sometimes done in order to lower the paint viscosity, to aid in blending, or to achieve a special color effect.

Overspray: An overlap of dry spray particles on areas that were not meant to be painted, or on previously painted areas where they do not melt in.

Particle Size: The size of the paint particle in a dispersion.

Pigment: Small particles added to paint to influence properties such as color, corrosion resistance, mechanical strength, etc. Pigments may be colored, semitransparent, black, white or colorless. They must be incorporated into a paint system by some dispersion process.

Polishing Compound: A material applied to a vehicle? surface, which removes minor imperfections with minimal cutting action. Buffing restores film to a high gloss appearance.

Pressure-feed Gun: A spray gun equipped with a separate paint container that is pressurized and connected to the spray gun by means of hoses.

Primer: The first coat of paint applied to a substrate, designed to proved adhesion and corrosion resistance.

Primer-sealer: An undercoat which improves adhesion of the topcoat, and which seals old painted surfaces that have been sanded; usually does not require sanding.

Primer-surfacer: An undercoat, which fills small imperfections in the substrate and which usually must be sanded.

Reduce: The ability of a surface to keep the topcoat from sinking in and causing a decrease in appearance or gloss.

Reducer: A solvent used to reduce or thin enamels to sprayable viscosity. (See Thinner)

Sagging: Excessive flow on a vertical surface resulting in drips and other imperfections on the painted surface. Occurs not only when the paint is wet, but also during baking in certain types of paints.

Sealer: An undercoat that enhances adhesion. Provides uniform color holdout and an even, level surface for topcoat application.

Solids: The part of the paint that does not evaporate but stays on the surface to form a film. Usually measured on a weight or volume basis.

Solvent: A liquid, which will dissolve something, usually resins or other binder components. Commonly it is an organic liquid.

Spot Repair: A type of refinish repair job in which a section of the car smaller than a panel is refinished (often called “ding” or “dent” work). The paint is usually blended into the surrounding area.

Spray: Paint is atomized in a spray gun and the stream of atomized paint is directed at the part to be painted. Atomization may be high pressure air, by high pressure stream, by high fluid pressure, or by electrical means in an electrostatic process.

Stabilizer: Something added to paint to prevent degradation.

Tack: The stickiness of a paint film or an adhesive. The time it takes for an air drying paint to reach a tack-free stage is a common measure of drying speed.

Tack Cloth or Rag: A cloth coated with a sticky substance used to remove dirt and lint prior to painting.

Tack Coat: The first enamel coat, applied full and allowed to flash only until it is quite sticky.

Thinner: Solvent added to a lacquer to reduce its viscosity to sprayable consistency. (See Reducer)

Thixotropy: The tendency for the viscosity of a liquid to be shear-rate-dependent. When the liquid is rapidly shaken, brushed or otherwise mechanically disturbed, the viscosity decreases rapidly. Thixotropic behavior is the result molecules or particles in the liquid forming weakly associated structures, which break apart upon agitation.

Topcoat: The final layer of paint applied to a substrate. Several coats of topcoat may be applied in some cases.

Touch Up: A method of repainting performed on a new or used vehicle for any reason. Also refers to correcting minor scratches by a brush, etc.

Two-component System: Materials such as some paints, fillers and adhesives, which require the addition of a hardener or activator to accomplish a chemical reaction, causing them to cure. Also described as 2K.

Undercoat: A first coat, primer, sealer or surfacer applied to the substrate. Frequently used to provide corrosion protection and adhesion.

Urethane: A type of paint or polymer, which results from the reaction of an isocyanate with a hydroxyl containing component. Urethanes are noted for their toughness and abrasion resistance.

UV Stabilizers: Chemicals added to paint to absorb the ultraviolet radiation present in sunlight. Ultraviolet radiation decomposes the polymer molecules in a paint film and thus UV stabilizers are used to prolong paint life.

Vehicle: All of a paint except the pigment. This includes solvents, diluents, resins, gums, driers, etc. The liquid portion of a paint.

Viscosity: The flow rate of a liquid. Solvents affect the fluidity or flowability of the paint. Paint viscosity must allow proper atomization and flowout. Viscosity can be determined by measuring the time it takes for a given amount of liquid to flow through a set orifice.

Waterborne: A type of paint, which uses water as its primary carrier rather than typical organic solvents.

Zahn Cup: A device to measure viscosity. It is calibrated in different sizes (numbers) for different liquids.

- See more at: http://anestiwata.com/resources/terminology/#sthash.VOjbWNFg.dpuf