

## RESOURCE GUIDE



**Golden Artist Colors, Inc.**  
188 Bell Road  
New Berlin, NY 13411-9527  
USA  
Toll Free: 800-959-6543  
Fax: 607-847-6767  
techsupport@goldenpaints.com  
[www.goldenpaints.com](http://www.goldenpaints.com)

### Glossary

**Acrylics** - resins resulting from the polymerization of derivatives of acrylic acids, including esters of acrylic acid, methacrylic acid, acrylonitrile, and their copolymers.

**Additive** - any substance added in small quantities to another substance, usually to improve properties.

**Adhesion** - state in which two surfaces are held together by interfacial forces which may consist of valence forces or interlocking action, or both.

**Alkali Resistance** - the degree to which a coating resists reaction with alkaline materials such as soap or ammonia.

**Alkyds** - synthetic resins formed by the condensation of polyhydric alcohols with polybasic acids.

**Batch** - industrial unit or quantity of production used in one complete operation.

**Binder** - nonvolatile portion of the liquid vehicle of a coating. It binds or cements the pigment particles together and the paint film as a whole to the material to which it is applied.

**Bleeding** - the diffusion of colorants through a coating from a previously painted substrate due to the action of the vehicle or solvent or both.

**Brilliance** - a subjective term referring to the cleanness or lack of a muddy or dirty tone in pigmented coatings.

**Bronzing** - a subjective, descriptive, appearance term applied to the metal-like reflectance which sometimes appears at the surface of nonmetallic colored materials.

**Caking** - settling of pigment particles of a paint into a compact mass which is not easily redispersed by stirring.

**Catalyst** - substance whose presence increases the rate of a chemical reaction.

**Clear Liquid Separation (CLR)** - often referred to as syneresis, is the spontaneous appearance of a transparent liquid over an opaque liquid paint during storage.

**Coagulation** - process whereby a fluid liquid is changed into a thickened, curdled or congealed mass.

**Coalescence** - the formation of a film of resinous or polymeric material when water evaporates from an emulsion, permitting contact and fusion of adjacent polymer particles.

**Color Development** - the extent to which the colorant has achieved its full tinting potential.

**Colorant** - any substance that imparts color to another material or mixture. Colorants may be dyes or pigments.

**Copolymer** - a polymer consisting of molecules containing large numbers of units of two or more chemically different types in irregular sequence.

**Consistency** - the "feel" of a product; the combination of both Viscosity and Rheology.

**Craze** - a tear or other similar defect in an acrylic film, usually found in thin, pourable products that are applied too thickly in a single coat. crazes result from the paint surface skinning over (as it begins to dry) and shrinking while the center remains liquid. crazes may also occur from excessive hot or cold temperatures, or movement of the painting during the film formation process.

**Defoamer** - additive used to reduce foam in a coating.

**Dilatant Flow** - a type of flow characterized by an increase in viscosity as shear stress is increased.

**Dispersant** - additive that increases the stability of a suspension of powders (pigments) in a liquid medium.

**Dispersion** - process of dispersing a dry powder in a liquid medium in such a way that the individual particles of the powder become separated from one another and are reasonably evenly distributed throughout the entire liquid medium.

**Drawdown** - a layer of paint deposited on a substrate by use of a drawdown bar to evaluate the characteristics of the paint.

**Dye** - colorant which does not scatter light, but which absorbs certain wavelengths and transmits others, generally soluble in water.

**Emulsification** - the process of dispersing one liquid in another (the liquids being mutually insoluble or sparingly soluble in each other).

**Film** - any supported or unsupported thin continuous covering or coating.

**Film Formation** - An ongoing drying process comprised of several steps that an acrylic film undergoes until it completely cures. The result of water and other additives leaving the paint film as the polymers align into a stable, honeycomb-like structure.

**Film Integrity** - continuity of a coating free of defects.

**Fineness of Grind** - a numerical assessment of the degree of dispersion or of the presence of coarse particles in pigmented coatings as determined by the protrusion of particles through the wet film at a given thickness.

**Fish Eyes** - paint defect which manifests itself by the crawling of wet paint into a recognized pattern resembling small "dimples" or "fish eyes".

**Flocculation** - the process of contact and adhesion whereby the particles of a dispersion form larger size clusters.

**Flow** - movement of a coating during and after application and before the film is formed.

**Gel** - a semisolid material, somewhat elastic, composed of matter in a colloidal state that does not dissolve.

**Grind** - to reduce pigment particle size mechanically.

**Grinding Slab** - a flat piece, usually of glass or stone, on which color is ground from a coarse to a finely divided state, frequently with the medium that is to blend it as a paint.

**Hydrophilic** - substance which absorbs or exhibits affinity for water; wettable.

**Hydrophobic** - substance which does not absorb or exhibit affinity for water; non-wettable.

**Inorganic** - designation of compounds that generally do not contain carbon.

**Letdown** - the process of paint manufacturing in which the pigment paste is reduced (letdown) by the addition of the remaining ingredients.

**Leveling** - the measure of the ability of a wet coating to flow out to a smooth dry film after application, without brush marks.

**Lightfast** - refers to the material's ability to withstand color change from light energy for a specified amount of time. Colorants are described as lightfast for a specified time exposed to a known amount of ultraviolet light exposure. See ASTM Lightfastness Ratings.

**Lightfastness** - (1) the relative degree of change or lack of change in color of materials exposed to the same amount and character of light. (2) - ability to withstand color change on exposure to light.

**Masstone** - a thick swatch of paint. Golden works with a standard wet thickness of 10 mil to assess paints and other products. A Masstone is helpful for painters who tend to work directly with thick or impasto painting methods. An excellent way to indicate inherent qualities of a coating, such as opacity and gloss.

**Medium** - in paints, the continuous phase in which the pigment is dispersed; synonymous with vehicle.

**Micelle** - colloidal particle composed of many aggregated small molecules having a layered structure.

**Migration** - movement of certain materials in a coating to the surface.

**Mill** - a machine or device that reduces a solid such as a pigment into minute grains by crushing, grinding or pressing.

**Miscible** - liquids that can be mixed in all proportions (any ratio).

**Mixture** - a heterogeneous association of materials that cannot be represented by a chemical formula and that does not undergo chemical change as a result of interaction among the mixed materials.

**Muller** - an instrument usually of glass used for dispersing pigments.

**Munsell Notation** - a color language used to describe the color space for any given color, created by artist and inventor Prof. Albert Munsell, circa 1905. The Munsell notation for a chromatic color is written symbolically: HV/C; or Hue Value / Chroma.

**Open Time** - length of time a coating remains wet enough to effectively work the brush.

**Opaque** - a reference to the covering or "hiding" ability of a coating, known as opacity. Those that do not allow any light to pass through a film are termed "Opaque". Opposite of "Transparent".

**Organic** - designation of any chemical compound containing carbon.

**Paint** - any pigmented liquid designed for application to a substrate as a thin layer which is converted to a solid film after application.

**Pantone®** - a color matching system used in many industries to describe and reproduce a specific color; first introduced in the early 1960's.

**Permanence** - resistance to any object or material to change with age or exposure to deleterious conditions.

**Permanent** - term used to describe how long a media or substrate may potentially last. A very vague descriptor unless there is testing data to indicate what is meant by "permanent". Example: Permanent Marker.

**pH** - the acidity (below a neutral 7.0 pH ) or alkalinity (above a neutral 7.0 pH) of a material. Acrylic paints must be alkaline in order to maintain good working properties and shelf stability. Acidic materials should not come in contact with natural fibers such as cotton, because they speed up the degradation of the fibers.

**Pigment** - finely ground, natural or synthetic, inorganic or organic, insoluble dispersed particles which, when dispersed in a liquid vehicle to make paint, may provide, in addition to color, many of the essential properties of paint including opacity, hardness, durability and corrosion resistance.

**Pigment Load** - also known as Pigment Volume Content (PVC), Pigment Load is the amount of pigment in a paint, compared to the amount of binder and other ingredients. May also refer to the maximum amount of pigments or other solids that can be added to a paint and still form a strong, stable film. Each pigment varies greatly and therefore will have its own unique maximum pigment load.

**Pigment to Binder Ratio** - ratio of total pigment to binder solids in paint.

**Pinholes** - film defect characterized by small pore-like flaws in a coating which extend entirely through the applied film and have the general appearance of pin pricks.

**Polymer** - substance, the molecules of which consist of one or more structural units repeated any number of times.

**Polymerization** - chemical reaction in which two or more small molecules (monomer) combine to form large molecules that contain repeating structural units.

**Repeatability** - qualitatively, the closeness of agreement between successive results obtained with the same method of identical test material, under the same conditions.

**Reproducibility** - qualitatively, the closeness of agreement between individual results obtained with the same method on identical test material but under different conditions.

**Resin** - general term applied to a wide variety of more or less transparent and fusible products, which may be natural or synthetic.

**Retarder** - generally, a component added to a composition to slow down a chemical or physical change.

**Rheology** - the flow characteristics of a product; described as either "long" (flowing) or "short" (stiff). The study of deformation and flow.

**Rheology Modifier** - an additive used generally for changing the viscosity or flow of paints.

**Setting Up** - conversion of liquid paint during storage to a gel-like or pseudosolid condition. The process is usually reversible by agitation and thinning.

**Shade** - a mixture of a color with black. Golden uses a 3:1 shade mixture (Bone Black: color) to evaluate white paints. Dark shade mixtures may indicate low pigment load or the inherent transparency of a pigment.

**Shear** - an action or stress, resulting from applied forces, which causes two contiguous parts of a body to slide, relative to each other, in a direct parallel to their plane of contact.

**Silicate** - any member of the very widely occurring compounds characterized by the presence of the elements silicon, oxygen and one or more metals with or without hydrogen.

**Solution** - a homogeneous mixture of two or more elements or compounds.

**Supersaturation** - an unstable system which has a greater concentration of material in solution than would exist at equilibrium.

**Surface Tension** - property arising from molecular forces of the surface film of all liquids which tend to alter the contained volume of liquid into a form of minimum superficial area.

**Surfactant** - (Surface Active Agents) additives which reduce surface tension and may form micelles and thereby improve wetting and help disperse pigments.

**Thickener** - any material used to thicken a liquid (increase viscosity).

**Thixotropic** - adjective which describes full-bodied material which undergoes a reduction in viscosity when shaken, stirred or otherwise mechanically disturbed and which readily recovers the original full-bodied condition on standing.

**Tint** - a mixture of a color with white. Golden uses a 10:1 tint (Titanium Dioxide White: color) to assure color quality and pigment load. Tint strength can indicate low pigment levels in a paint mixture or it can indicate inherent pigment characteristics. Most helpful when comparing similar colorants such as two opaque red pigments.

**Three-Roll Mill** - type of mill used for the fine grinding of pigment compositions.

**Tinting Strength** - measure of the effectiveness with which a quantity of colorant alters the color of a material.

**Translucent** - Not totally water clear, but still allows for light to easily pass through its film.

**Transparent** - refers to an extremely high degree of clarity known as "water clarity". Commonly misused term instead of "translucent". Opposite of "Opaque".

**Undertone** - a very thin scrape of paint, used to assess pigment qualities over a white background. Very useful for determining what washes or glazes will look like in painting.

**Vehicle** - the liquid portion of paint, in which the pigment is dispersed, it is composed of binder and thinner.

**Viscometer** - an instrument used to measure flow properties.

**Viscosity** - the physical "thickness" of a product, as measured in units of centipose by a viscometer. A viscometer measures the resistance to shear of a liquid, gel or semi-solid material. One centipose (1 cPs) is the measured viscosity of water.

**Viscous** - having relatively great viscosity.