



Utrecht Art Supplies Studio Craft: How Paint Dries



Underneath the drying process is a complex chemistry that's different for each medium, but you don't have to be a chemist to grasp the basics. A general understanding of how paint goes from workable fluid to stable solid can help you get more durable results, longer storage life and less waste.

Acrylics: Artists' acrylics are a polymer dispersion medium. In dispersion paints, the binder consists of acrylic microparticles separated by water and glycols.

Acrylic is thermoplastic, meaning it changes shape above a certain minimum temperature. When acrylic paint dries above that temperature, water and glycols evaporate and polymer particles begin to come in contact with each other. As remaining moisture leaves, the film becomes more dense and strong until it reaches full integrity. When completely dry, an acrylic paint film is water resistant and will not re-wet.

It's important to provide adequate heat for drying and curing, because acrylics applied below the Minimum Film Forming Temperature may be weak and brittle with poor adhesion.

Oils and Alkyds: Artists' oil colors don't dry through evaporation, but rather polymerize through oxidation. Drying oils- vehicles for oil paints- contain fatty acids that oxidize to a stable, flexible film with good optical clarity. How fast an oil paint film dries can be affected by temperature, humidity, absorbency of the ground and the formula of the paint itself.

Metallic salts called "driers" or "siccatives" speed up the rate of oxidation by catalyzing the oxidation process. Some pigments like Raw Umber contain small amounts of these salts. Japan Drier is a highly concentrated catalytic siccative that is added in minute amounts to mediums for more accelerated drying. (Overuse of Japan Drier can cause wrinkling, darkening and embrittlement.)

Unlike water-based paints that can remain wet in a closed jar with some head space, it only takes a small amount of oxygen to induce drying in oil paints so it's important to keep paint tubes tightly capped and be conservative in dispensing colors on the palette. Leftover paint can be kept fresh a little longer by using essential oil of clove on a cotton ball inside a covered palette with a tight-fitting lid.

Oil-modified alkyds are a type of fast-drying oil paint based on a synthetic resin made from vegetable oil. Alkyds initially dry to the touch by evaporation of solvents; afterward, they cure similarly to traditional oils.



Watercolor/Gouache: The binder for watercolor and gouache is Gum Arabic, a plant-derived, water-soluble gum. Watercolor dries by simple evaporation, resulting in a film that is permanently soluble. Wetting agents including glycerin and honey may be added to improve solubility so colors liquify more quickly. Tube watercolors often harden in storage after a few years regardless of temperature, but it's usually possible to cut open the package and retrieve the solid paint. Wet watercolor can develop mold if the palette is covered, so most artists save leftovers by simply letting it dry hard and re-wet as needed.