



Oil and Solvent: The Proper Balance

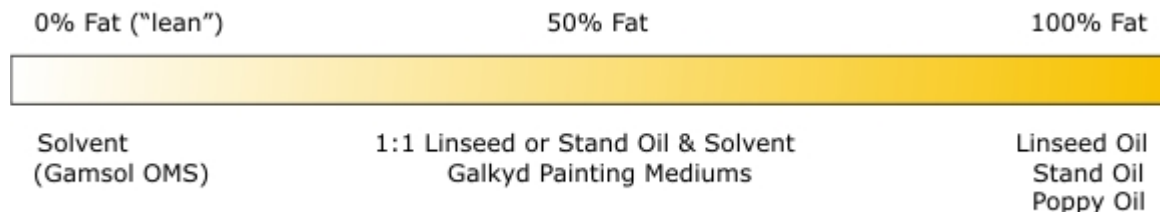
Through the Gamblin website and technical literature, the [differences between our Gamsol OMS and generic odorless mineral spirits](#) have received their due attention. This newsletter therefore travels a different road, focusing on the role that both oil and solvents play in painting mediums and in creating the sound structure of an oil painting.

Artists have, and always will, push the limitations of their materials. For some, the consistency of oil colors out of the tube is conducive to thicker applications of paint or alla prima painting. However, for a number of other painters, oil colors out of the tube must be mixed with painting mediums to achieve the unique surfaces and optical effects desired by the artist. Oil colors are made more fluid to allow the painter to develop preliminary compositional sketches, lively brushwork, and transparent glazes. Oil colors, when extended in gel mediums, can develop thicker glaze layers and transparent impasto. The balance of materials used to formulate these mediums should be considered to meet the artists' visual needs and to ensure the integrity of the resulting paint films.

Since the 19th century and the invention of the three roll mill, oil colors have been made into stiff pastes. Using these luscious pastes led to the dominance of direct painting in the 20th century. Painting mediums are used only to increase fluidity of oil colors when using this technique. Traditionally, painting mediums were made by mixing a pure drying oil or thickened, "polymerized" oil (linseed and Stand oil, respectively); turpentine; and a hard resin such as dammar. Turpentine was used for hundreds of years because it was commonly available. Pure 100% odorless mineral spirits (OMS), an innovation of the late 20th century, replaced turpentine in many painting medium formulations and subsequently lowered the toxicity in painters' studios considerably. Alkyd-based mediums have widely replaced painting mediums based on dammar varnish, as alkyd-based mediums dry to greater flexibility and speed drying time of oil colors. Alkyd has a greater affinity for oil colors than dammar or other natural resins because it is produced from oil, not from an exotic tree. Alkyd is actually the third generation of polymerized oil used by artists. (In the 18th century, artists used sun-thickened oil. In the 19th century, stand oil. In the 20th century, alkyd.)

Whether artists are using painting mediums based on traditional formulas or contemporary alkyd-based mediums, the balance of oil and solvent must be maintained to give painters greater freedom to explore a wide array of painting techniques while developing permanent painting structures.

When considering the "fat content" of painting mediums, think of these materials on a spectrum from "lean" to "fat":



There are dangers in adding too much of any one material that lives at either end of this spectrum.

Extending oil colors just with solvent can lead to failure of the paint film. By using large amounts of only solvent to thin your paint, you risk breaking the oil binder of your colors. When you break the binder, the oil molecules cannot cross-link and connect together to form a paint layer. This is commonly described as the paint film being too "lean." Instead of making an oil painting, your painting is more like a pastel painting. An oil painting gets its strength from the binder that cross-links each layer or "film." To dry into a tough, flexible film,

the oil must form a continuous surface. Decades and even centuries later, every molecule of oil will still be connected to every other, holding the layer to the canvas and firmly locking the pigment particles in the paint film.

Adding more than a small amount of pure oil (100% fat) can increase the tendency of oil paint films to wrinkle. As the linseed oil binder of paint films take in oxygen to dry, they increase in mass. Large increases in mass are visually indicated by pronounced wrinkling of the paint film. Too much oil makes the paint film too "fat."

A painting medium should exist in the middle of this spectrum, creating the proper balance of oil and solvent (50% Fat). A simple mixture of one part linseed or Stand oil and one part Gamsol OMS maintains this balance and creates a general-purpose, slow-drying painting medium. Gamblin's alkyd-based [Galkyd painting mediums](#), straight from the bottle, equal 50% fat, as they maintaining the ideal oil/solvent balance. The Gamblin Galkyds give painters fast-drying painting mediums in varying viscosities. These mediums are still fatter than oil colors out of the tube. For information on incorporating these mediums into a painting structure, please refer to our Fat Over Lean Guide ([download PDF](#)).

Creating that perfect balance of oil and solvent, Galkyd painting mediums give painters greater freedom in expanding the working properties of their oil colors, resulting in a wide array of optical effects.



Red Rocks with Mist, Oil and Galkyd glazes on Clayboard Panel, 2009.

Sincerely,

Scott Gellatly
Product Manager
Gamblin Artists Colors Co.

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Gamblin Artists Colors Co. PO Box 625 Portland OR 97207 USA
Telephone: 503.235.1945 Fax: 503.235.1946