



## Premium Grades of Odorless Mineral Spirits #10

What do you get when you pay for premium grades of odorless mineral spirits? This issue of the Gamblin Studio Notes continues our discussion on solvents. I want to answer questions about what you get when you pay for premium grades of odorless mineral spirits, like Gamsol, rather than cheap "hardware" store brands. [Gamsol](#) is a highly purified form of odorless mineral spirit, distilled at high temperature and purified of all aromatic components. The purification process accounts for the price difference.

Odorless mineral spirits (OMS), and mineral spirits (MS) also called "white spirit" in Britain and Europe, are petroleum distillate solvents. These and other solvents such as naphtha, kerosene, toluene, and xylene are distilled from petroleum. First petroleum starts boiling. Then at different temperatures, different solvents are distilled. Each solvent has unique physical properties: viscosity, evaporation rate, solvent power (KB value), and permissible exposure level (PEL). The higher the boiling temperature, the less volatile the solvent. The less volatile, the safer.

After gross separation into MS and OMS, OMS solvent can be further purified. Gamsol is so purified that all impurities and aromatic components have been removed. Cheaper grades of OMS have enough aromatic content to smell as strong as mineral spirits, and contain oily residues that do not evaporate and remain in the paint film.

Because the harmful aromatics have been removed, Gamsol is safer than the OMS sold at hardware stores. Disregard the urban legend about solvents. Gamsol IS SAFER because you cannot smell it. Gamsol has a high permissible exposure level so you can work around this pure OMS much longer because you are not going to exceed its permissible exposure level.

Permissible Exposure Limit (PEL) is the maximum amount (or concentration) of a chemical to which a worker may be exposed under OSHA regulations. For the studio artist, the PEL of a solvent is a guide to its relative safety. Because artists cannot easily measure how many parts per million of solvent (PPM) are in their studios at a particular time, this information should be used as a guide to choosing solvents.

The higher the PEL, the milder the solvent and generally the slower the solvent evaporates. By U.S. federal regulation, the PEL has to be included on the material safety data sheet (MSDS) for the solvent. Knowing the PEL of a solvent, you can deduce a lot about a solvent. If you receive an MSDS without PEL information, do not use the brand. Turpentine has a PEL of 100. It is a strong solvent that evaporates quickly. MS generally has a PEL of 100-200. It is strong, but not as strong as turpentine, and evaporates more slowly than turpentine.

Hardware store brands of "odorless" mineral spirits have a PEL of 200. The only difference between cheap OMS and MS is solvent power. OMS has a lower KB value. MS may be an appropriate choice for cleaning dried paint from brushes or palettes. Some brands of alkyl

resin painting mediums are made with MS and need to be diluted with MS. Request a material safety data sheet (MSDS) from the manufacturer to find out about solvent content.

OMS, commonly found in art supply stores, will have a slight odor from trace amounts of aromatics and a PEL of 200.

Gamsol Odorless mineral spirit has a PEL of 300. This is the highest available PEL in a petroleum solvent that still evaporates in a time frame that does not inhibit the painting process. Gamsol will not reach its PEL at normal room temperature (under 70 degrees Fahrenheit).

PEL ratings are usually calculated at an "8 hour Time Weighted Average." This is an average value of exposure during an 8 hour work day. On material safety data sheets, some companies prefer to use two different values: Maximum Short Term Limit Value and Long Term Exposure Limit Value, for example: STELV of 500 & LTELV of 200. The Long Term Exposure is the more significant PEL.

In the Gamblin factory, we use only Gamsol for making mediums and for clean up so we use "Time Weighted Average." Gamsol has a TWA PEL of 300. If you want clarification on this, please e-mail me at [RobertGamblin@gamblincolors.com](mailto:RobertGamblin@gamblincolors.com). Also, MSDS for all Gamblin painting materials are available on this web site in the [Artists Materials](#) section.

Understanding KB value is also important. There is an inverse relationship between safety and solvent power. The safer the solvent, the weaker the solvent. Oil colors do not require strong solvents because solvents merely dilute the oil. So Gamsol works great for diluting oil colors.

To dilute natural resin mediums and varnishes, you must use strong solvent. Drop a lump of damar resin into turpentine, it dissolves and makes damar varnish. Properly dissolved damar is crystal clear. Drop a lump of damar resin into Gamsol, all it does is get wet. OMS are not strong enough to dissolve natural resins. MS may partially dissolve natural resins but the resulting solution will be cloudy. We do not recommend adding OMS to pre-mixed damar varnish because that will also make the varnish cloudy.

If you want to use safer solvents, I suggest you find alternatives to natural resins. I formulated [Gamblin Galkyd Painting Mediums](#) because I want to paint with and work around safer solvents. By using Galkyds, you can enjoy all traditional working properties and lower the solvent level in your studio.

Because artists' grade oil colors do not contain solvents, artists can maintain healthy studio environments by carefully selecting mediums and solvents. As manufacturers and as artists, we maintain healthy environments in our factory and studios by using [Gamsol](#). If we do not send any toxic materials from our factory into your studios then we also do not send any toxic materials into the landfills. If artists' colors do not carry health warning labels, dispose of them as normal household trash. We recycle our waste solvent from clean up into fuel for the aluminum industry. You can easily recycle OMS and MS with motor oil at local recycling centers.

If you have any further questions about premium grades of odorless mineral spirits #10, please feel free to [contact](#) us.

Sincerely,

Robert Gamblin

*T. Gambini*

**Thank you very much for your interest in our Gamblin Studio Notes.**  
If you are interested in sharing your impressions about Gamblin Artist's Colors,  
please visit our [Gamblin Artist's Survey](#)

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