



Raw Materials—Linseed Oil



The plains of eastern Montana



Flowering Flax



Entrance to the linseed oil facility



Finished oil paint at Gamblin factory



Artist Grade Oil Paint

Focusing on "pigments" is easy because we see them in the world around us - white, black and red pigments are found everywhere and colored earth pigments were trade commodities along the Silk Road. However, paint is a mixture of pigments and binder. The origin of the most common paint binder used before WWII is pre-historic. We know the Nubians made Linseed oil varnishes to seal their boats and the Egyptians wove linen into cloth. Although we do not have written records, processing flax plants must have been an important industry. And, in that ancient industry, we find the origins of artists' paint making.



By the 14th century, painters were also adding linseed oil to their egg tempera formulae to increase the transparency of their binder. Because their primary painting media —mosaics, fresco and tempera, were all opaque, painters prized Linseed oil because its transparency and luminosity lit up their paintings and created depth. LO traps light deep inside paint layers. As the light struggles to escape, it causes paintings to glow. Oil replaced egg completely as the binder by the end of the 15th century.

Now, after more than 500 years, we can see for ourselves Linseed oil is the best binder for permanent paintings. I use Linseed oil (LO) as the binder for all but a few Gamblin Artists Colors.

Flax plants thrive during long hot days and cold nights on the plains of eastern Montana and

up through central Canada. When cultivated for seed, yellow and white flowering flax is preferred. The whiter the flower is, the paler the oil.

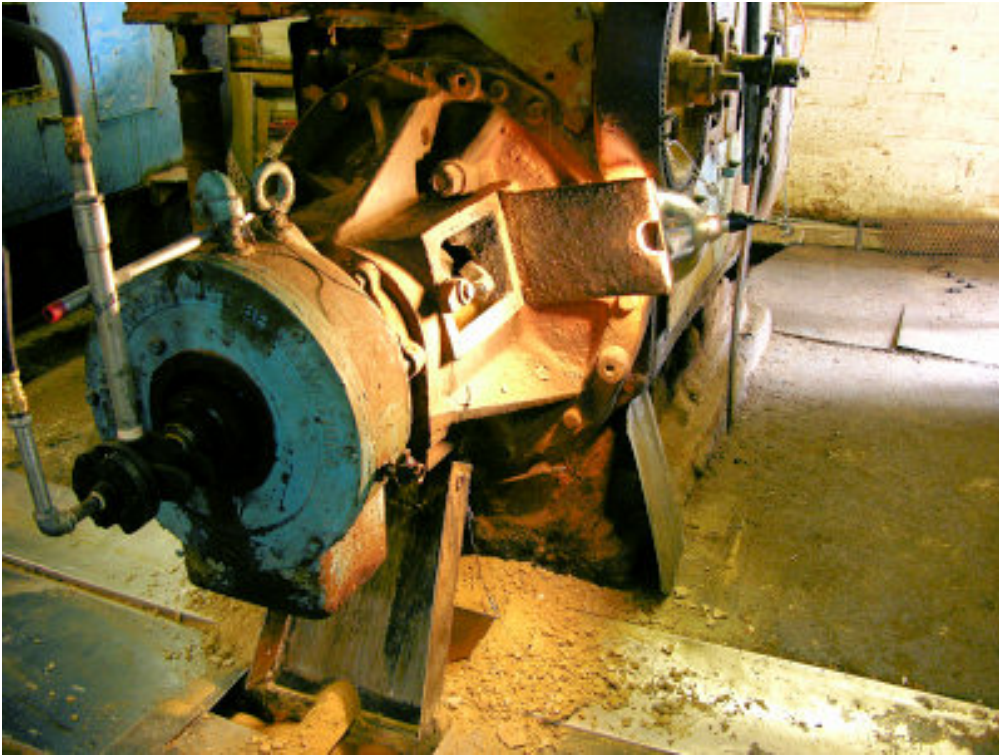
Gamblin Artists Colors Co. is fortunate to have an excellent US linseed oil supplier, a small producer, who delivers high quality oil of excellent color. High quality, mature flax seeds contain about 40% oil by volume.



After harvest, flax seeds are stored in silos.



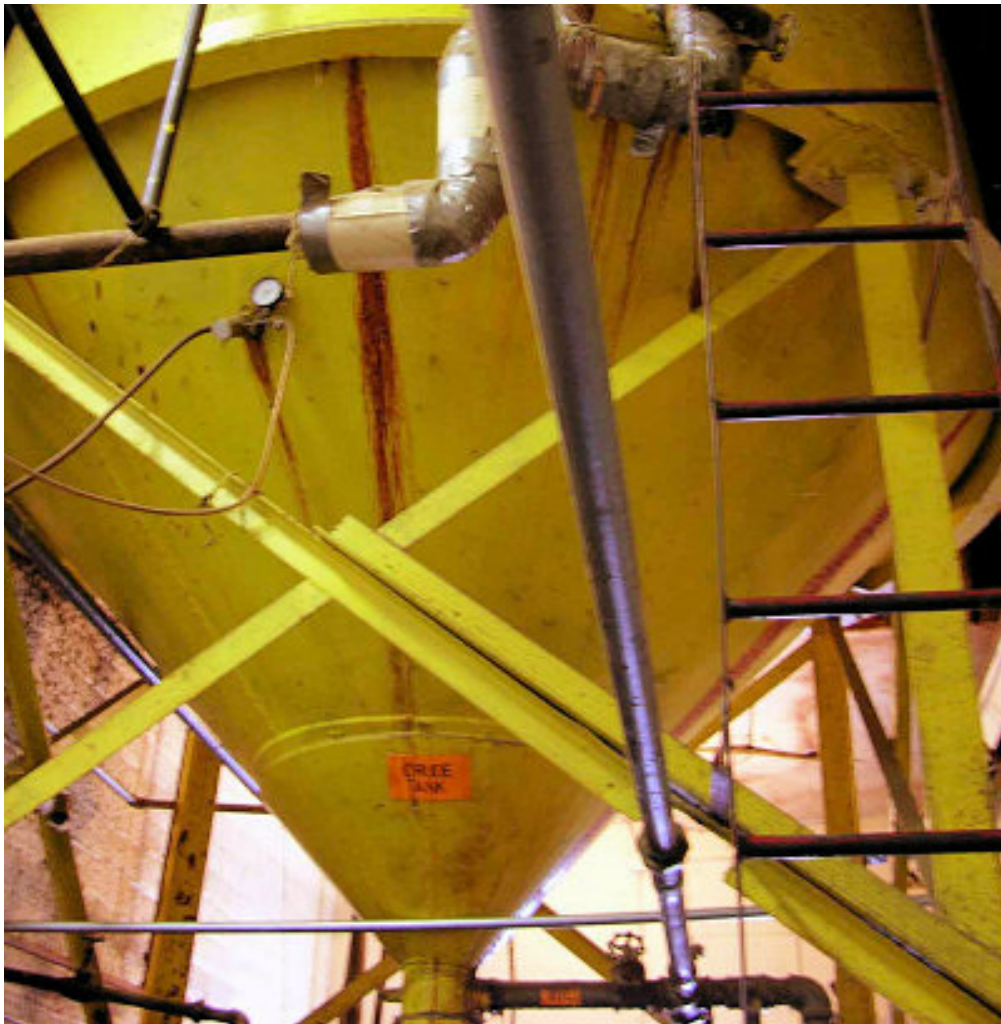
Here a worker checks the grinder, bringing the LO to temperature.



This is a close-up of an auger (screw) style seed grinder. The grinder is heated to increase expression of oil.



After crushing, husks drop down and the oil with its mucilage and sediment moves toward the holding and heating tanks. Contemporary processed LO is purer than oils of the past because it is not contaminated by weed seeds. Weed seed produces a non drying oil.



Gravity pulls oil and sediments down through the tank.



From the tank, the oil flows into this two-tiered filtration system. Thick fibrous filters catch residual sediment. The oil is filled into 55-gallon drums.



For their Friday afternoon BBQ during summer, the employees tend their organic garden with flax seed husks. Flax seed husk is a key component of dog food.

Linseed Oil is a naturally occurring vegetable oil. What makes LO special is its dry time. In about seven days (depending on heat and humidity), a thin layer of fluid oil will "dry" into a tough, flexible coating. Its high content of Linoleic fatty acid (unsaturated) is the key to its film strength and fast rate of oxidization.

And, like all organic systems, the linseed oil binder is not perfect. Its disadvantage is its tendency to yellow over time. So paintings made with, especially cold pressed linseed oil, tend to "warm up" as they dry and yellow a little more when completely dry. Definitely since the introduction of alternative oils during the Industrial Revolution, painters have searched for, but still have not found, the perfect binder.

Alternative oils include poppy, walnut, and more recently, safflower, and sunflower oils. Unlike Refined LO, alternative oils do not contain much or any Linoleic acid. White oil color made from poppy oil, for example, will be more neutral in color than the same pigments in LO. However, oils that do not have good natural drying properties are formulated with more driers or they dry more slowly. Among Gamblin artists' colors, Radiant white and Titanium-Zinc white are now made from safflower oil. They are brilliantly white oil colors.

Refined LO has been the choice of most artists' paint manufacturers for about 150 years. Refined LO dries completely and makes a strong paint film and a rich, short paste.

The color of LO is measured on the Gardner color scale. While most linseed oil is produced at 8+ on the scale, we prefer paler oils at color 4 - 5 on the scale. Our supplier is focused on quality and does let us know when light batches of oil are available. Light color oil allows us

to make Gamblin Whites in linseed oil that have little "color."

I make traditional oil paints with a generous amount of binder because I love luscious paints—not overly stiff or overly soft. I like the texture just stiff enough to make an impasto in warm weather. Because of its low molecular weight (very small molecules), linseed oil is very slippery with a tremendous capacity to wrap around particles of pigments. When we apply tremendous force during the mixing process, the fluid oil is transformed into pure color at its maximum. I do expect artists' grade oil colors to be gorgeous.

When you squeeze my colors out onto your palette you are experiencing the potential I feel is in each color.

Please notice I am careful always to use "artists' grade oil colors." There are definitely differences among [lesser grades](#).

But some painters think that there is a perfect artists' grade standard that manufacturers are striving to match. For me, the differences among artists' grade oil colors are more like the differences you find by tasting the same dish at all the best restaurants in town. All the meals will be tasty and nutritious and you will prefer one to the others.

Each of the colors made by Gamblin Artists Colors reflects my personal preferences for how that color should look and feel. I certainly hope my vision supports your work.

If you have any further questions about raw materials—linseed oil, please feel free to [contact](#) us.

Sincerely,

Robert Gamblin



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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