4. F-A-Q: Methyl Cellulose

1. What is methyl cellulose? Methyl cellulose starts life as a plant, wood, or cotton fiber. Cellulose itself is among the most abundant materials on earth, but methyl cellulose does not occur naturally. The cellulose is treated with an alkali, such as sodium hydroxide, followed by methyl chloride. It is rendered into a granular (powdered) form and packaged. It can then be mixed with cold water. The granules swell up when they absorb water. This results in a jelly-like substance. Methyl cellulose has a lot of consumer uses. Most often, it is used as a lubricant, adhesive, and bulking agent. It is often listed on the ingredient labels of cosmetics, pills and food.

2. How is it packaged? We sell PH cellulose in a half-pound bag and in a pound bag.

3. Is it expensive? Our prices are sometimes higher than commercial grade types but usually lower than comparable archival methyl cellulose sold through art and conservation supply houses. The half-pound bag costs $14.75, and the pound bag costs $22.55. The yield per pound is 6-8 gallons. This means that the price for the half-pound bag is about $3.75 per gallon, and the price for the pound bag is about $3.25 per gallon. The instructions predict the lower yield because we can't know how thick a paperhanger might want their paste. That's why our label says 6 gallons for the pound size, although in practice you're more likely to get 8.

4. How long will it last? Methyl cellulose mixtures can keep very well for a number of weeks without losing tack or spoiling. In hot weather or for longer periods we recommend mixing smaller batches and starting over with fresh adhesive.

5. I mixed it up, but why doesn’t it seem very tacky? It's not. Methyl cellulose by itself is a very weak adhesive for the type of work that paperhangers do. It is upwards of 95% water when mixed, so that should give you some idea of what to expect.

6. If it's not that strong, then how is it used? What are the advantages? Cellulose is a great mixer. It can extend and improve the flow of most pastes, especially wheat paste. A fantastic paste is 50% PH Wheat and 50% PH Cellulose; this paste will go through a machine nicely and hang nearly all the "paper paper" products such as British pulps, many traditional paper-based clay-coated handscreens, and other light products. Cellulose is essentially stainless due to the high water content. It is a simple paste and easy to clean up.

7. Can it be mixed with other pastes? This is easy to do. Remember, cellulose is mainly water, so it's similar to thinning paste for better workability, except that you get better flow. Many paperhangers carry a quarter-inch drill bit and butterfly wheel and mix the paste for each job to order.

8. Why do your instructions say to mix it with cold water? Strangely enough, cellulose will not jell up with warm water. We tried it once, and nothing happened. However, what happens next is that the cellulose WILL jell once the water cools down. We don’t understand it, but that's how it works.

9. Why is it not ready to use immediately, like other pastes? The type we sell is not only archival, it's the base stock from which the other types are made. The types sold at retail storefronts perform okay for most uses, but they're more processed than PH Cellulose. Biocides and other ingredients for shelf life are added and they're also processed to mix up quickly. PH Cellulose works best if it looks clear before use. This will take a few hours, so the best practice is to mix it the previous day for the next day's work.

10. Can it be used to size whitestock or acid free liner? Yes, and it spreads great, but this won't deposit very many solids on the liner. Best practice is to add some starch, either by mixing the cellulose paste with some wheat paste, or by adding some diluted clear. In extreme situations, like for hanging a paper which has strong edge curl, a clay premix can be mixed with PH Cellulose for an easily spreadable size with great tack.

11. I've heard that cellulose is "stainless". Is this true? There is no paste that is absolutely stainless, but cellulose stains the least. This is because of the very high water content.

12. Why doesn't this paper have enough slip when hanging with cellulose, and what can I do about it? This often happens when it's necessary to reposition the sheet. Cellulose is so thin and fluid that it disappears into the liner fast and you usually get only one shot at a good seam. If you need to position sheets multiple times, try adding some wheat or diluted clear to the paste mixture.

13. Can I use it on prepasted paper? We've found no problem with this in many years of personal practice, in conversations with other paperhangers, or in reports from our customers. For obvious reasons, prepasted papers are made to interact well with a wide variety of water types, and since cellulose is almost all water, it stands to reason that it should work. But our cellulose has no surfactants (chemicals which reduce surface tension and help water penetrate), so we don't claim that it's an activator. We only claim that applying methyl cellulose to the back of prepasted paper with brush, roller or machine is an efficient, professional technique.

14. Does cellulose have any other advantages? The great clean-up is not well known. Many jobs are trouble to clean up. In fact, time spent cleaning up during an installation may take nearly as much time as the installing. Also, clean-up issues may come back later from sidelight or weird lighting conditions. Cellulose avoids many of these problems because, like wheat, it cleans up much better and faster than the premixes.

15. Why should I thin premix, anyway? Isn't that why it's premixed? First, supplies that paperhangers use, like painter's supplies, sometimes need to be adjusted to job conditions because of evaporation. But wallcovering installation is especially demanding because pastes need to be adjusted to two other things: 1. the absorption rate of the wallcovering; and 2. the absorption rate of the wall. The primary ingredient of all premixes and pastes is water. Adding cellulose or water to a premix is therefore nothing more than adjusting the cellulose and water that are already there. Soaps, corn syrups and other add-ons can and do cause staining with some papers. Strike-through (when the moisture comes through to the front) occurs rarely, but when it does, it can ruin a job. Additionally, many nonwovens are highly porous, and staining has been observed in them as well. Finally, the seams on British pulps may darken if the premix wicks into the paper fibers on the edge of the sheet. Because of these facts, adding cellulose or water to a premix in order to get the right mix for the paper is less risky, in our opinion, than assuming that premixes will not stain delicate materials.