Additives, Mediums, and Texture Pastes

Reaper Virtual Expo 2021

What is Paint?

Before discussing options to add to your paint, it is helpful to understand the basics of paint composition. Paint is made of pigment mixed with binder. It is generally applied on top of a substrate (paper, wood, metal, etc.), and forms a paint film as it cures or dries. It may optionally include a third group of ingredients: additives. These alter or enhance it in some way.

Pigment

Pigment provides the colour of a paint. Pigments are insoluble colorants - they do not dissolve in water. Historically pigments were derived from minerals and other natural sources. Many now are synthetically produced. Whatever their origin, pigments vary as much in properties as they do in colour. The properties of a paint are heavily influenced by the properties of the pigments it includes. For example, most bright yellow and red paints are transparent due to the nature of most yellow and red pigments. The same pigments are used in all types of paint - oils, acrylics, watercolours, etc.

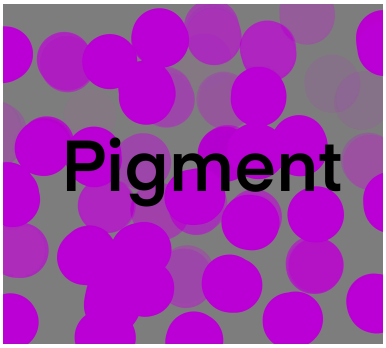
Binder

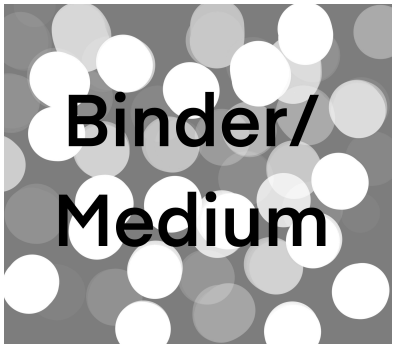
The binder holds the pigments together and creates the paint film of the dried/cured paint. The binder determines the family of paint. Pigment mixed with linseed oil creates oil paint. The same pigment mixed with acrylic polymer binder creates acrylic paint. Acrylic binders are manufactured in a wide variety of consistencies - from thick pastes to highly fluid liquids. Paints that are members of the same overall family can generally be mixed and used together without issues regardless of brand or consistency.

Vehicles and Additives

Vehicles create the liquid suspension of certain kinds of paint, and also influence the paint's fluidity. In the case of acrylic paint, the vehicle is water. Additives are other materials that may be added to alter the properties of the paint. These are added in small amounts, and may reduce shine, make the paint flow more smoothly, increase or decrease the drying time of the paint, etc. The choice and proportion of additives added to the base binder mix is a big part of what makes one brand of acrylic paint feel unique to another.

So think of the following diagrams as the main groups of ingredients for a paint: pigment, binder, and additives.





And then this diagram represents the proportion of ingredients in the paint as mixed by the manufacturer.

Paint Film

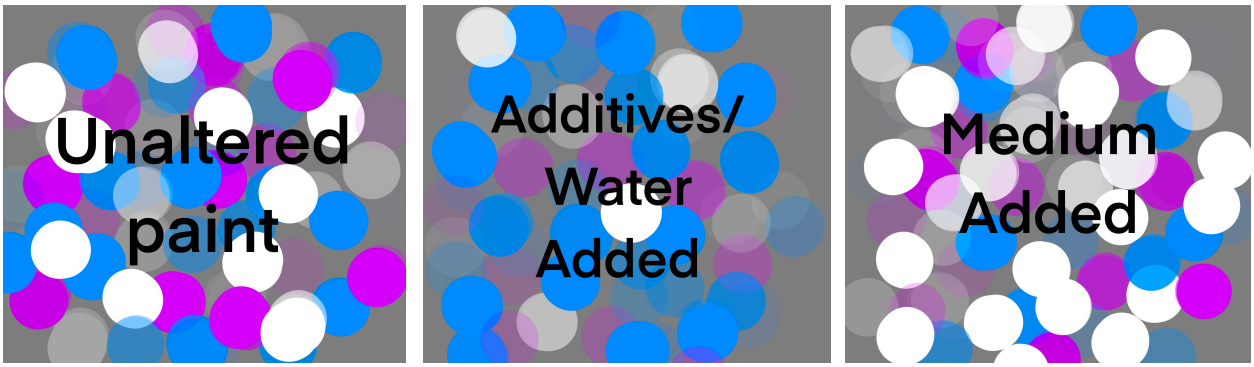
As demonstrated above, paint is formulated with a particular proportion of binder to the other ingredients. A minimum proportion of binder is required for the paint to form a sturdy paint film when it dries. Sturdy paint resists damage from being rubbed or lightly scratched. If you add a lot of additives to your paint, you risk weakening how strong the paint jobs on your figures will be. Note that for this purpose, water counts as an additive! A good rule of thumb is that your paint mix should be no more than 50% water, and no more than 25-30% additives. Those are cumulative, so if you've added 20% medium, don't add more than 30% additional water. Aiming for no more than 30% water/additives in a foundation layer mix is probably the best choice for sturdy paint. Use some medium in addition to or instead of water if you need to make a paint more transparent than that.

On the topic of sturdiness, it is also helpful to know that there is a difference between how long it takes acrylic paint to be touch dry versus fully cured. Acrylic paint dries to the touch in moments. Once it is touch dry you can lightly handle it, apply additional paint, etc. But the paint

film has not yet reached full strength and sturdiness. It takes at least 24 hours for acrylic paint (and primer) to dry completely, and possibly longer in humid climes or when applied thickly (as you may do with some of the texture pastes described later in this document.) I have an article of tips for making your paint jobs as sturdy and game ready as possible.

NOTE: I think it's valuable to be aware of paint film, but don't panic if you've been thinning paint with just water for years. I think the paint film issue is most crucial in the foundation layer(s) - your base coat, basically. Lots of miniature painters (including myself) have been using water thinned glazes on figures for years and I haven't really heard of people having problems, but these are generally applied on top of several coats of less diluted paint. There is anecdotal and study evidence of heavily thinned paint rubbing off of canvases when applied as the first layers, though the study also found paint could be thinned more than expected before 'breaking'.

In the following diagrams, the white particles represent the acrylic polymers that create a sturdy paint film. You want to dilute your paint in a way that accomplishes your goals, but preserves the paint film. (ie, you want to have a fair amount of acrylic polymers in your mix.)



Non-Paint Additives

In the early years, members of our hobby had little understanding of the art store products. (Which granted are confusing, that's why you're reading this!) Lacking knowledge of mediums and additives, people figured out alternative materials they could use to accomplish some of the same aims. The Internet has a long memory, so a lot of these suggestions are still floating around as advice today. While these suggestions are creative and frugal, they can cause problems, and they are unnecessary.

For example, I've seen people suggest using a little dish soap to break surface tension in washes. While dish soap does include surfactants, it also includes dyes, fragrance, emollients and a lot of other things that may not react well with paint. A product called Future Floor Finish was widely recommended for a variety of hobby uses. It was largely acrylic polymer like gloss mediums and sealers, but it also included a lot of other ingredients that don't react well with all brands of paint.

My advice is to only use products made for paint in your paint, and those are the only products described here.

A Note on Paint Varieties and Confusing Names

Some companies name products based on their intended use, others name based on the components of the paint. Either way, there are likely products you weren't aware of in the list below. All of the listed products are functionally acrylic paints and should intermix well with acrylic miniature paints or other types of acrylic paints.

Fluid consistency paints are manufactured with fluid consistency polymer binders. They are **not** just thick tube paints thinned down with water. The most opaque paint will be the one you can use straight from the container. So if opacity is a primary concern, choose a paint line that is manufactured in the consistency best for your intended use. For the majority of miniature painting tasks, that means paints listed in the Fluid Consistency section.

Very Fluid paints ('inks') are useful to mix washes and intensify colour. Having a Heavy Body white allows you to mix/paint impasto highlights as is popular with some display painters and painters of larger scales. Heavy Body category paints will add texture to surfaces and fill in fine sculpted detail unless you thin them down. Soft Body paints may also fill in texture unless they are thinned a little.

Very Fluid Consistency (about as runny as water)

Liquitex Acrylic Ink
Daler-Rowney FW Ink
Golden High-Flow

Fluid Consistency (a pool of paint will drip if the surface is tilted)

Reaper Master Series Paint
Most brands of acrylic miniature paint (GW, P3, Scale75, Army Painter, Nocturna N-Paint etc.)
Liquitex Acrylic Gouache
Golden Fluid and Fluid Matte

Soft Body Consistency (thicker body, but also drips slowly on a tilted surface)

Liquitex Soft Body
Golden SoFlat Matte (possibly fluid)
Scale75 Artist (the one in the tubes)

Heavy Body Consistency (holds stiff peaks like frosting, does not drip)

Liquitex Heavy Body
Golden Artist Colors
Jo Sonja Artists' Colours

Do You Need to Add Anything to your Paint?

We talk a lot about thinning our paints in the miniature hobby, but we aren't always clear on when and why to do so. Mediums, additives, or even plain water should only be added to your paint for a purpose. Don't add stuff by rote, or because you've heard you have to thin your paints if you want to be a good painter. Instead think about what issues you're having in your painting, and whether changing something about your paint could help address those.

Reasons to add something to your paint are to change the consistency/flow from thicker to more fluid, to dilute the colour to make it more transparent, or to alter other properties. These are distinctly different goals. Different diluents may work better for one than the other. When you think about modifying your paint, consider whether you want to change the consistency, the opacity, or another property. Your answer will help determine which additive(s) will work best for your purpose.

Questions to determine if you need to add anything to your paint:

Is the consistency of the paint correct for your current task?

The consistency of a paint is how fluid or viscous it is. Miniature paint is fairly fluid in consistency, but some brands are more viscous than others. Water can evaporate from the bottle over time, so in all brands of paint older bottles can start to dry out a little and become more viscous. Particular paint consistencies are required for some applications. Remember, this is a separate question from opacity.

Base coat, wet blending: If paint is too thick, it can add unwanted texture to the surface or fill in sculpted detail. If you draw a brush through the paint and the 'wake' fills in immediately, it is a fluid enough to use on your figure. If the wake behind your brush seeps slowly or you can see brush stroke textures when you paint it on a flat surface, add a little bit of water.

Washes: Washes are intended to fall into the crevices of sculpted texture like chainmail or fur. This requires a fairly fluid consistency. You can add water to make paint more fluid. If you have issues with surface tension or washes drying with rings on the edges, add a bit of flow improver as well as water, or a mix of medium and water.

Airbrush paint: Paint intended to be sprayed through an airbrush needs to be fairly fluid. While you can add a bit of water alone, you will have fewer clogs if you use airbrush medium or an airbrush thinner mix. Commercial airbrush mediums are typically formulated with drying retarder additive in their mix.

Adding texture: It is possible to mix paint with gel mediums or texture mediums to create or enhance textures. Some painters like a bit of an impasto effect high highlight areas. Texture mediums offer interesting possibilities for miniature bases.

Is the paint too opaque for your current task?

Paints vary widely in how opaque they are out of the bottle, based on the pigments used to mix them. Frustrating as it is, most bright, intense colours are at least somewhat transparent. Paint as dispensed from the bottle is as opaque as it will ever be. Any additive or medium you add to the paint will make it more transparent. So if your task requires opaque coverage and you do not have a need to change the consistency or the behaviour of the paint, don't add anything else to the paint.

Base coats, wet blending, texture strokes, some kinds of detail painting: Opaque paint is useful to these tasks. Check the consistency and behaviour of the paint and only add water, additives, or mediums as necessary to solve specific problems.

Layering: Layer paints should be semi-opaque - clearly depositing colour, but still revealing some of the underlying colour/surface through the paint. You can use water or medium to increase transparency.

Washes: Wash paints need to be fairly transparent, and also fairly liquid in consistency. If you have issues with surface tension or washes drying with rings on the edges, add a bit of flow improver as well as water, or a mix of medium and water.

Glazing: Paints mixed for glazing are highly transparent. They tint surfaces they're applied to rather than applying strong coverage of colour. It is best to thin them with a mix of water and medium, or just medium alone.

Do you want or need to change the behaviour or finish of the paint?

Do you need the paint to dry more slowly for a particular technique or in your climate? Does it feel like paint is ‘sticking’ to your brush when you're trying to paint details? Does the paint have a shiny or satin finish and you'd prefer matte? There are additives for each of these problems.

Additives

Additives are products you can add to paint to alter or enhance its working properties. Additives are not binders. Adding them to your paint mix reduces the proportion of binder and could weaken the strength of the dried paint film. A good rule of thumb is that no more than 25-30% of your paint mix should be additives, particularly for the first coat applied to a surface.

Drying Retarder, Retarder, Slow-Dry

The quick dry time of acrylic paints is a feature. Except when it's not! Drying retarder increases the drying time of paint. This can be helpful for some techniques, like wet blending, or for those who live in very dry climates. The Drying Retarders I have tried are a little shiny and can alter the finish of your paint. Reaper makes 9216 Drying Retarder. My favourite is Amsterdam brand Drying Retarder. It dramatically slows down the dry time of paint, and results in a satin rather than glossy finish. You can use a hairdryer on low once you've finished applying paint and are ready for it to dry.

Matting Agent

Matting agents reduce the glossy finish of a paint. Acrylic paint binder is glossy by nature, so any matte or even satin finish paint or medium already has matting agent added. Matting agents are particles. They work by breaking up the light that reflects back from the painted surface. Add matting agent very sparingly. Too much matting agent will make dried paint look dusty or even frosted in appearance. Too much in washes/glazes will result in a white milky film appearing in crevices. (This is similar to the issues that can occur when applying thick coats of matte finish spray varnish.) It is worth taking the time to test a paint mix when you first start using matting agent so you can get an idea of how much you need to add.

So far as I have been able to discover, Reaper is only company that sells matting agent direct to the consumer, in 9215 Anti-Shine Additive. You can also use this directly out of the bottle to create a frost effect on terrain. Use a wet brush to move it around or thin it out a little.

Flow Improver or Flow Aid

Flow improver reduces the surface tension of a paint mix. If you find that paint feels a bit 'sticky' coming off of your brush when you're trying to paint details, adding a little flow improver may help. It can also help washes settle into crevices to avoid the appearance of drying rings. Reaper's product is 9106 Flow Improver. Reaper's base paint mix includes a little flow improver, so there's some in every paint they make.

Both Golden and Liquitex brand flow improvers are sold as concentrates and instruct you to dilute them with water prior to adding them to paint. I find it much easier to use the Reaper product.

Mediums

For acrylic paint products, the term 'medium' in a product name generally means that the product is largely composed of the same kinds of acrylic polymers that are used to make paint. In other words, medium is binder, the clear 'paint' part of acrylic paint. As with paint, a given medium product may also include small amounts of additives like flow improver, surfactants, etc. For example, any medium with a matte or satin/semi-gloss finish has matting agent added.

Adding medium to your paint increases the transparency of the paint while preserving the strength of the paint film. You decrease the proportion of the pigment in the mix, but preserve the ratios of binders. Using medium instead of or in combination with water helps keep the pigment in suspension better than water alone. For this reason, medium works much better to dilute metallic paints than water.

Mediums are defined by two factors - consistency and finish. Consistency ranges from gels that are thicker than tube paints, to very 'watery' fluids. Miniature painters generally need a fluid or extra fluid consistency medium for our paints. The natural finish of acrylic binder is glossy. Matting agents are added to create satin or matte finish mediums.

For the most reliable results, use medium produced by the same manufacturer as your paints. Their product(s) are likely made with the same binder they use in their paints, so behave most

similarly to their paints. Some miniature paint manufacturers don't offer many options, or you may wish to experiment. If you want to try art store brands, products that are fluid matte or glaze mediums are probably the most similar to miniature paint products.

Reaper's 9107 Brush-on Sealer is essentially matte medium and many people use it this way. NOTE: I recommend you shake your Brush-on Sealer thoroughly before every use. If you do not, the matting agent will concentrate at the bottom, and you risk frosting effects when using the last third of the bottle as a sealer.

Reaper's 9298 Gloss Sealer can be used as a gloss medium alternative.

The Reaper product 9300 Wash Medium is a mix of water and matte medium you can use to mix washes. You can also mix water with 9107 Brush-on Sealer to create your own equivalent.

You can also use mediums as an alternative primer for Bones plastic miniatures.

One other use for many mediums is as a glue for some applications. Matte medium makes a great glue for attaching scenic elements like grass and leaves.

NOTE: Some artists and art sites use the term medium very broadly to indicate any substance added to paint to change its consistency, working properties, etc. Used in this general way the term includes additives, and you may find articles online that use it this way, particularly for oil painting. Most discussion of mediums in acrylic painting makes the distinction that I have here - medium is similar to binder and maintains paint film, additives do not.

Special Purpose Mediums

I want to mention two special purpose mediums.

Airbrush Mediums

Most commercial products called Airbrush Medium or Airbrush Thinner seem to be formulated with a proportion of drying retarder in their mix. You can use them for brush painting, but be aware that they slow down paint drying time. These will not work as alternative primers for Bones because they take upwards of hours to dry used on their own. I add a few drops of Golden's Airbrush Medium to Reaper paints for use in my airbrush.

Metal Medium

Vallejo makes a product called Metal Medium. You can use it as a white highlight for metallics. You can also mix a matte paint with it to create custom coloured metallics. Reaper's equivalent product is 9100 Pearl White.

Sealer (aka Topcoat)

I recommended using Reaper's Brush-on Sealer and Gloss Sealer as mediums, so I wanted to clarify the differences between sealer and medium. Many brush-on acrylic sealers/topcoats appear to be largely binder, which is also the main component of medium. These types of sealers are functionally much the same as painting a clear coat of paint on top of your work. They unify the finish to the finish of the sealer, which may be matte, satin, or gloss. They may also have UV protectant added to help reduce colours fading due to exposure to sunlight. But they do not have any ingredient or component that makes them significantly different or more protective than regular paint.

Matte sealers are less protective than gloss sealers. I confirmed this with both the Reaper paint mixer and with information from Golden paints.

There are other brush-on products available that do sound like they have a different chemistry. I don't have much information on those, and would be leery of using them on miniatures without testing. The products called Varnishes by both Golden and Liquitex seem to be different formulations and I would use them only as directed. Spray sealers may also have a different chemistry that I know little about.

I have an article with more information on steps you can take to make your paint jobs as sturdy as possible.

Gels and Texture Pastes

Miniature hobby products generally sell these types of products separately from paints and mediums, calling them terrain or weathering products. Art store brands sell these types of products as variants on mediums. If you use a lot of these, I recommend looking at art brand options to see if they're more economical in the long run.

All of these have in common that they are acrylic polymer based, which means that when they are wet, you can thin them with water, smooth them with water, and clean them up with water, but once they fully cure water has no effect on them.

Molding Paste/Modeling Paste/GW Liquid Greenstuff/Vallejo Plastic Putty

This product is a thick paste kind of like cake frosting. It has a smooth consistency with a little bit of tooth. It is opaque. It is white in most brands, green from GW. It dries quickly and you can paint directly on it. It's essentially a gel consistency acrylic primer. The art brands sell this in two consistencies - flexible and solid. The solid can more easily be carved and sanded. Since even metal miniatures get flexed on occasion, I have only used the flexible for gap filling.

This is a terrific product for filling small gaps that remain when you glue parts together. You can also use it to disguise the breaks between different materials on a base, or ‘sculpt’ basing elements like flames or waves.

Gel Mediums

Gel mediums are like thicker paints without pigment added. They range from soft gels the consistency of toothpaste to thick gels that hold peaks like stiff cake frosting. They have a smooth texture, like paint. Gloss gels are usually transparent, matte gels are semi-transparent to translucent. Both may appear white or cloudy when wet. The container should indicate the transparency and finish.

I suspect products like Woodland Scenic's Water Effects are essentially gloss gel medium. While I might prefer molding paste, many of these products can be used in a similar way to to disguise the breaks between different materials on a base, or 'sculpt' basing elements like flames or waves. If you want to add colour, I recommend doing experiments before your final project. You might have to experiment with colours you can use to maintain some transparency.

You can also use these to make custom texture pastes by adding your own materials. Use non-reactive materials (rocks, plastic, etc.) or test before use. Adding natural materials like dirt or leaves could have unpredictable results.

Texture Pastes

Texture pastes are gel mediums with non-reactive texture materials added. Examples of texture additives include pumice, lava, mica, and fibres. Different brands have a wide variety of different offerings, some of which are more or less useful to a miniature painter. Look for samples of textures in your art store or on brand websites to help guide you to find which products may be of interest.

Texture pastes range from opaque to semi-transparent. The texture additives themselves are usually opaque. Some have white pigment added. For hobby brands, some may have a variety of paint colours added to create different colours of mud or similar.

Texture pastes offer some interesting possibilities for basing miniatures. Pumice textures are a great option for sand or dirt. You can supplement these with gravel for a variety of textures, or use them to hide the seams in cork or bark base construction. Experiment with mixing a gel medium and a texture paste to create more of a liquid mud texture.

You can mix paint directly into texture pastes. The paint colour when wet will likely differ significantly from when it is dry. I suspect you would also use more paint than if you paint on top of them, but it's possible you could get a variety of effects if you experiment. You can paint directly on top of texture pastes, or prime and then paint them.

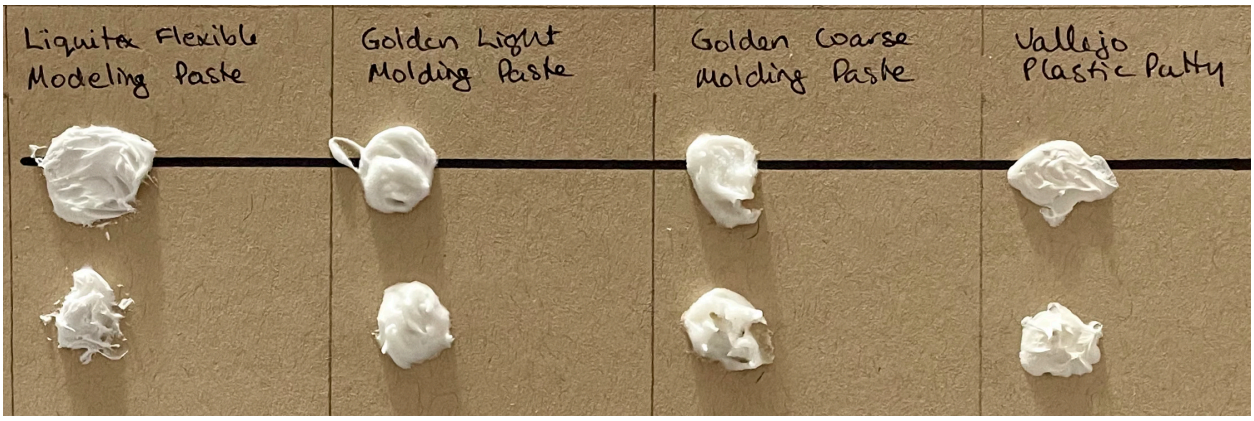
Gel and Paste Examples

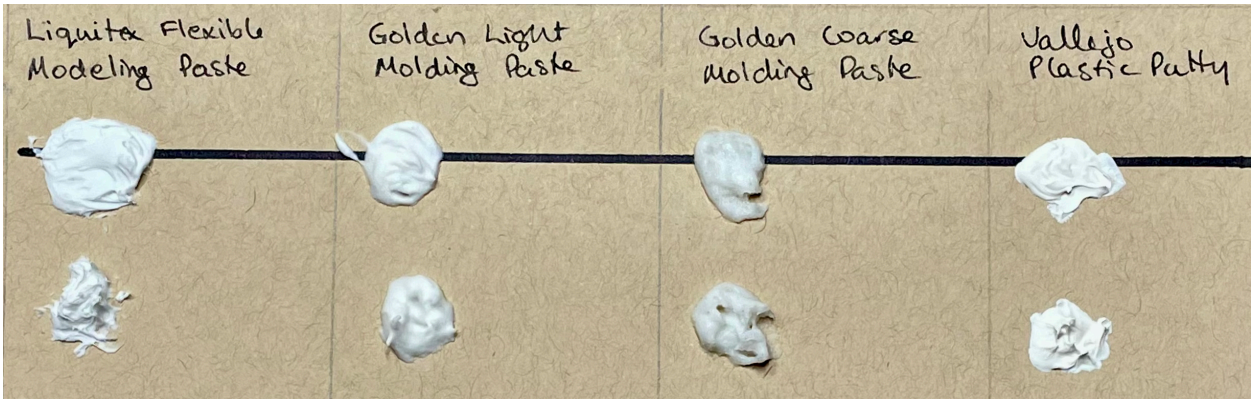
I created example sheets for the gels and pastes that I have available, and I am including photographs of those here. I will be showing these live during the class. Some elements will be easier for you to assess on video, but I wanted to include what reference I could for you here. Most of these materials require 12-24 hours to dry when they are used as thickly as I have here.

Modeling Pastes

The first photo is the page held vertical under overhead lighting. The second photo is of the page held flat, and is more true to colour. Hopefully between them you can get some idea of the viscosity and stiffness of the products.

The top row on the black line was applied in a fairly smooth way. On the bottom row I pulled out peaks and ridges with a toothpick.





Gel Mediums

The first photo is the page held vertical under overhead lighting. The second photo is of the page held flat, and is more true to colour. Hopefully between them you can get some idea of the viscosity and stiffness of the products.

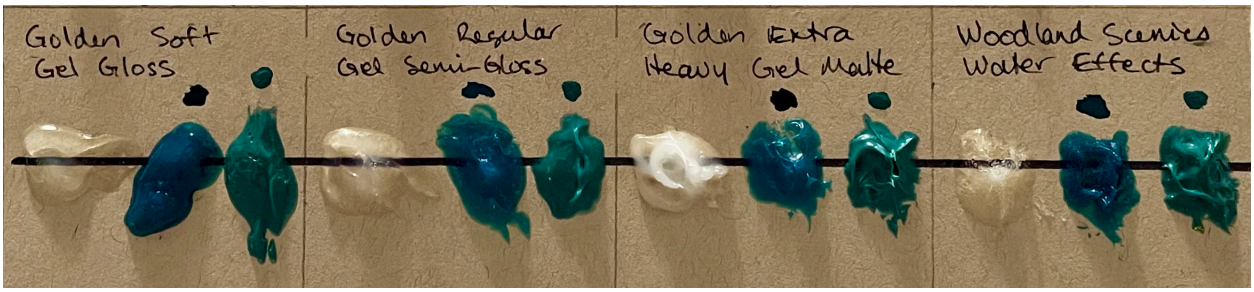
The products were applied over a black line to give you an idea of their transparency/opacity. In the section for each product, the samples are organized from left to right as follows:

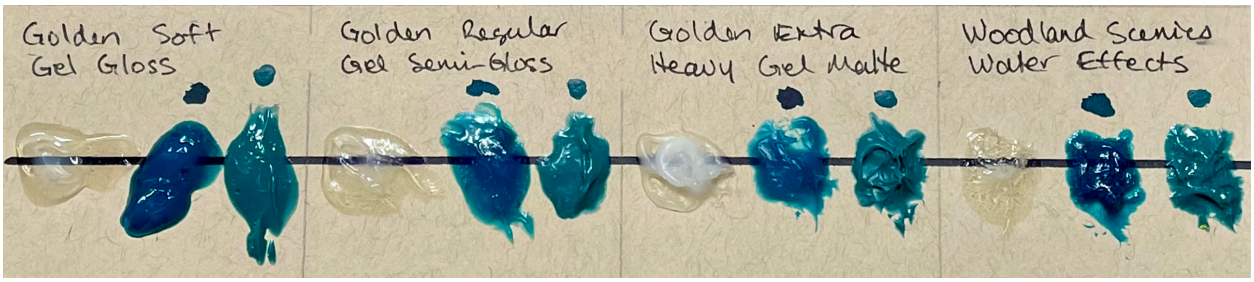
Left: product straight from the container.

Middle: product mixed with a small dot of Liquitex acrylic ink. The amount of ink added was about the size of the dot above the sample.

Right: product mixed with a small dot of Reaper Master Series paint. The amount of paint added was about the size of the dot above the sample.

NOTE: Samples had cured about 12 hours before the photo was taken. I think with additional curing all of the samples taken straight out of the container will end up being clear, apart from the Golden Extra Heavy Gel Matte. The matting agent added to gel products reduces their transparency somewhat.





Texture Pastes

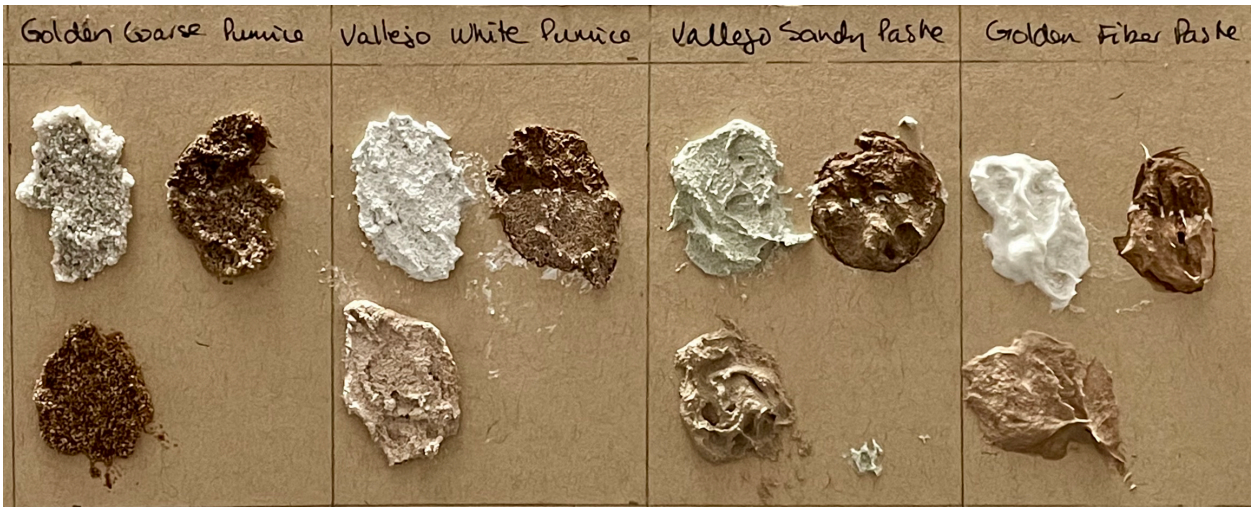
The first photo is the page held vertical under overhead lighting. The second photo is of the page held flat, and is more true to colour. Hopefully between them you can get some idea of the viscosity and stiffness of the products.

In the section for each product, the samples are organized as follows:

Upper left: product straight from the container.

Upper right: After the sample dried, the top half was painted with one coat of Reaper Earth Brown. The bottom half was painted with one coat of a wash of Reaper Earth Brown.

Lower left: The product was mixed with one drop of Reaper Earth Brown while wet. You can see that for some of these products you would need to use a lot more paint mixing it in compared to applying it over dried paste.



Brand Specific Information

The previous information was organized by the type of product. But as a shopper, you are more likely to be confronted by a list of products and trying to choose between them, so I also wanted to try to give some guidance on the offerings available from various manufacturers. I focused on mediums and additives. Note that there are more hobby companies selling texture pastes and scenic basing materials than I have listed here, I concentrated on the ones that also sell paint additives and mediums.

Art store brand mediums and additives generally do a good job of providing information to the consumer. Check the bottle for indications of the product's consistency, finish, transparency, etc. Their websites may provide additional information and guidance. You should read and follow any instructions available for the product.

There are literally hundreds of medium products. I have not worked with them all. I have not worked with most of them. Apart from the products I used in the class, the information I'm providing is based on demos from company representatives, and interpreting the information provided by the manufacturer.

Reaper Miniatures

9107 Brush-on Sealer
Acrylic polymer medium with matting agent added. Use as a medium to increase the transparency of paint. Use 50/50 with water to reduce issues with wash drying rings. Use to thin metallics and keep the metallic particles in suspension. When used as a sealer, the finish is satin straight from the bottle, matte if you add a little water (1 drop water to 2-3 drops sealer). Shake well with every use to ensure that the matting agents are distributed evenly throughout the life of the bottle. You can paint coats of sealer on rough areas of figures to smooth out surface imperfections.

9298 Gloss Sealer
Acrylic polymer medium with a glossy finish. You can use it in all of the ways described above, but it will add some sheen to your paints and is glossy when applied as a sealer.

9300 Wash Medium
Wash medium is essentially Brush-on Sealer mixed with water in the correct proportion to use to mix your own washes or glazes for use on miniatures.

9216 Drying Retarder
Slows down the time it takes acrylic paint to dry. A paint mix should include no more than 30% of this and/or other additives. It is glossy and will add a little sheen to your paint.

9215 Anti-Shine Additive
Matting agent particles suspended in liquid. Add very small amounts to paint to reduce sheen. Adding too much will result in a frosted or dusty looking appearance. You can use it as frost on scenic elements straight from the bottle, and move it around with a damp brush.

9100 Pearl White
Similar to Vallejo's metal medium. Mix with acrylic paints or inks to create custom metallic colours. You will get the most metallic effect using colours that are vivid and somewhat transparent.

Vallejo

Additives and Mediums
Vallejo's product page includes varnishes, brush cleaners, and a few other products like masking fluid and plastic putty (molding paste), as well as additives and mediums. There is a description for each product. Some of these products are a combination of additives/mediums, and this is common in many brands. For example the Vallejo Thinner Medium sounds like a combination of medium/binder, flow improver, and drying retarder, similar to the Golden Airbrush Medium.

Texture Pastes
The product offerings here are different than what I demonstrated in class, as it has been many years since I purchased mine. They do not seem to make the mica flake gel product anymore, but it is possible to buy loose mica flakes and mix with gel mediums for a similar result. (This is probably a better option since the pre-mixed product dries out quickly.)

Scale 75

Additives and Mediums
Scale75 has a few additives and mediums. Acrylic Thinner sounds like a mixture of medium/binder and flow improver. Acrylic Retarder is a type of drying retarder.

Texture Pastes
Scale75 has a line called Soilworks. Unfortunately they do not describe these products well in their online store. My impression is that some of these are similar to the texture pastes that I showed in class. Others seem to be texture pastes mixed with specific colours for a particular effect. I suspect you could paint over or add washes to these, but they are probably not exactly like what I demoed in class. They also sell guides to using their product lines to create scenic effects.

Privateer Press

Privateer Press has a Mixing Medium. Likely it is the clear binder portion of their paints. No description is provided to know whether that includes flow improver, retarder, matting agents or other additives.

Games Workshop

Games Workshop has some mediums and effects paints available in their Technical paints line. Contrast Medium is used to thin their contrast paints. Lahmian Medium is the medium for their standard paints. Storm Shield is their matte sealer, and Ardcoat is their gloss sealer. Both of them can likely be used as mediums. They have a number of coloured texture pastes, but I don't have any direct experience with these to compare to products I demonstrated in class.

Army Painter

The Army Painter sells an Airbrush Medium that includes flow improver. They have a Wash Mixing Medium for thinning their brand of washes, and also a Mixing Medium. Both are likely the same binder as used to mix the respective washes/paints. The descriptions do not suggest either contain any additional additives to whatever is in their binder mix. The Army Painter medium and effects page.

Golden Acrylics

Golden has an entire section of their website dedicated to Mediums, Gels & Pastes. They also provide information on the container labels to help you find the products you need.

Additives
Golden Additives include Retarder and Wetting Agent. Wetting Agent is their name for flow improver/flow aid. The OPEN line is a line of tube paints formulated to include retarder in the mix and dry really slowly. I would choose the Retarder over the OPEN Thinner, which may include other additives in the mix.

More Drying Retarders
Golden also has a Slow Drying Medium section. This references the slow drying OPEN line paints and mediums, but it also mentions Gloss Glazing Liquid and Satin Glazing Liquid as slowing the drying time of paint. So it looks like Golden glazing mediums include some drying retarder in their formulas, as well as not being matte.

Fluid Mediums
The Golden Fluid Mediums section is where the bulk of mediums of interest to miniature painters are found. Fluid Medium is the product closest in consistency to miniature paints. High Flow Medium is ink consistency, and would likely work to dilute any acrylic ink. (High Flow is the Golden line equivalent to Liquitex Acrylic Inks.) Matte Medium looks to be fairly fluid, but may be a little thicker than Reaper paint consistency. Their Airbrush Medium includes drying retarder. Interestingly they note that the Airbrush Medium is not compatible with the High Flow line, so I would test it with acrylic inks before use.

Molding Paste
The Golden Molding Paste section includes some products of possible interest. Molding Paste can be used as a gap filler or to sculpt smooth groundwork, waves, flames, etc. Light Molding Paste is similar but lighter weight. Coarse Molding Paste would work for fine texture ground

work. Since Hard Molding Paste states it is inflexible, I might not use that one for gap filling, and I'm not sure it sounds great for ground texture, either.

Gel with Aggregates (aka Texture Pastes)
The Golden Gel with Aggregates section is where you will find the pumice pastes that are great for creating ground texture on bases.

Effects Pastes
There are two Golden Effects Pastes. One is mixed with fibres that I suspect does not offer many possibilities for scenic effects. The other is a crackle paste you could make a seared earth or cooling lava effect with. There are other crackle effects options, including from Vallejo and Games Workshop.

Special Purpose Mediums
I'm not super familiar with the Special Purpose Mediums. From the description my guess is that these products are closest to the pure acrylic binder portion of paints with a minimum amount of additives compared to their other mediums. None of them seem particularly attractive for mini painting uses.

Varnish and Protective Coatings
Golden separates Polymer Varnish and Protective Coatings into two separate sections. The Golden Topcoats sound similar to miniature brand brush-on sealers that you can freely mix with paint and use as a medium alternative. The main difference would be that the Golden Topcoats include UV protection, and I suspect the miniature brand sealers do not. Polymer Varnish sounds like a different product that should be used only as a sealer, and only as directed.

Liquitex Acrylics

Liquitex lets you look at a giant chart of all the mediums, additives, and pastes, and then breaks them up into a few smaller groups.

Fluid Mediums
The Liquitex Fluid Mediums section has several products of interest to miniature painters. Professional Matte Medium and Professional Glazing Medium are medium products used to make paint more transparent. Interestingly their Professional Slow-Dri Medium sounds a bit different than other drying retarders. I suspect it is a mix of medium and drying retarder. It probably does not slow drying time as long, but you don't have to worry as much about limiting the proportion for the sake of the paint film.

Gels and Pastes
The Liquitex Gels and Pastes section is where you will find Flexible Modeling Paste. This is the product you can use as a gap filler or to create smooth base textures. Modeling Paste is inflexible, so may not be great for gap filling on flexible figures like Bones. It can be carved and sanded when dry.

Effects (and Airbrush Medium)
The Liquitex Effects sections includes the sand texture pastes that can be used to create scenic groundwork effects. Weirdly their Airbrush Medium is also listed here instead of in Fluid Mediums. It sounds like it contains some drying retarder, as seems to be common to airbrush mediums.

Additives
The Liquitex Additives section is where you will find Flow Aid (flow improver) and Slow-Dri Fluid Additive (drying retarder). This is a traditional drying retarder and should not be added in larger quantities. I suspect this would work better than the Liquitex Slow-Dri Medium for miniature painting purposes.

Varnishes
Because the Liquitex Varnishes state they should not be thinned with water, I am not comfortable considering these as alternatives to mediums for miniature painting purposes. They include UV protection.

Aleene's True Snow

I suspect this product is similar to an acrylic gel or modelling paste, and may work for the same tasks as those products in addition to its use as snow.

It is fairly sturdy, so suitable for gaming bases. You can dab it onto tree branches and foliage for a freshly fallen look.

Below left is vertical page with lighting from above, below right is page laid flat. To the right is a base with snow, and Anti-Shine additive used for frost at the lake edges.