7

BEAUTY IS ONLY SKIN DEEP

CHANGING THE COLOR OF LEATHER!

Dyeing leather has come a long way from the days of our ancient ancestors. Instead of dyeing large pieces of leather into a general color range using ammonia from urine and dyes derived from plants, we create and match precise colors using advanced chemistry and chemical processes. We use dye and paint, chemically formulated to bond with leather on large and small portions, alike. As you can see in Figure 7.1, the artisan used a mixture of paint and dyes to achieve depth and aging. Most artisans use a mixture of these products in combination with old-school texture and color changing techniques that don't require a chemical bond – like burning leather and burnishing leather.

Figure 7.1 A leather sample hand painted with Angelus leather paint by paint and dye expert Jeff Fender for Victoria's Secret runway show.

Leather tanning dates back thousands of years and became a necessity when animal hides became too stiff in cold weather or rotted in hot weather. Ancient people developed a tanning process that essentially processed raw animal hides into skins of usable leather. The three most popular hides are from cattle, sheep, and pigs but also include buffalo, elk, deer, and many more exotic sources. Currently there are about 60 tanneries in the US but not all of them do the full tanning process. There used to be hundreds more but many tanneries have shut down due to environmental regulations, an increase in synthetic leather, and an increase in imported leather. There are countless accounts about

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by-products from the tanning process entering local water supplies and massive environmental cleanups ensuing.

There are some techniques I will introduce in this chapter that are more toxic than others. I will recommend the lowest-toxicity products first, but sometimes, to get the job done, you have to reach for some harsh chemicals. I just try to limit the use of those and make my go-to's the lower-tox products.

DYEING WHOLE HIDES

At some point, a designer will want to build an army out of the same-color leather – and it will be a strange dystopian time-not-in-time designer–color. This will require dyeing several animal skins the exact same color. Trust me, I speak from experience. I had to dye 9–11 (I can't remember how many) elk hides the same green–blue–grey for Anna Oliver's design for *Cyrano de Bergerac* at the Old Globe (Figure 7.2).

Figure 7.2 Dyed blue elk uniform jackets hanging in stock. Even though they were all dyed the same color in the same dye and processes, they are from different individual animals that have slight variations in hide thicknesses, etc., so they are slightly different colors. This variation can be seen in the jacket at bottom left very well. Old Globe Theater's Cyrano, 2009. Costume Designer Anna Oliver, draper Wendy Miller.

The skin had to stay supple and the color could not rub off (or crock) on their white shirts that were worn under the military costumes. Oh, and did I mention they all had to match? You know, like uniforms do? I had always just dyed smaller pieces of leather with acid dyes and some vinegar to lower the pH – which I tried with my initial samples on these skins. The samples were uneven in color and the leather lost much of it's suppleness. Also, it did not pass a **crock test** (where the color doesn't rub off on a damp white cloth while applying pressure). I enlisted the help of Chemtan, a company that deals specifically with the leather tanning industry, stateside and overseas. Over many hours of phone conversations, they helped me understand the multistep process to successfully reproduce the same color and texture on the hides I had to dye; in the next section is the detailed process.

VAT DYEING LEATHER THE SUREFIRE WAY

First – there are some major components you must have to vat dye hides. To dye entire hides, you must have a vessel large enough to accommodate at least one full hide covered in water, a few chemical components to keep the leather soft and to set the dye, a pH meter is super helpful, and a frame slightly larger than the skin to stretch it out on after dyeing. I used all Chemtan products, which can be found at most taxidermy suppliers. You can also call Chemtan and ask what taxidermists close to you carry their products. They will also send samples.

Table 7.1 Leather Dye and Additive Amounts Based on Weight of Leather.

Pounds of Leather	Water (500% wt)	Detergent (.75% wt)	Leveling agent (1% wt)	Dye (5%)	Fat Liquor (6 %)
1	0.57 gal	1.20 oz	1.60 oz	0.80 oz	0.96 oz
2	1.14 gal	2.40 oz	3.20 oz	1.60 oz	1.92 oz
3	1.70 gal	3.60 oz	4.80 oz	2.40 oz	2.88 oz
4	2.27 gal	4.80 oz	6.40 oz	3.20 oz	3.84 oz
5	2.84 gal	6.00 oz	8.00 oz	4.00 oz	4.80 oz
6	3.41 gal	7.20 oz	9.60 oz	4.80 oz	5.76 oz
7	3.98 gal	8.40 oz	11.20 oz	5.60 oz	6.72 oz
8	4.55 gal	9.60 oz	12.80 oz	6.40 oz	7.68 oz
9	5.11 gal	10.80 oz	14.40 oz	7.20 oz	8.64 oz
10	5.68 gal	12.00 oz	16.00 oz	8.00 oz	9.60 oz

Supplies:

- Nonionic surfactant like synthrapol or laundry detergent
- Chemtan T-13 Levelling Agent
- Chemtan Acid Dyes (other acid dyes may work too but sample first!)
- Fat liquor
- Glacial acetic acid (food grade)
- Dye Vat
- Leather needles

- Stretching Frame – a frame slightly larger than the hide you are dyeing.
- Strong waxed thread
- A stick to agitate the leather
- Optional: pH meter, thermometer

HOW TO VAT DYE LEATHER

1. **Gear Up!** Long heat-safe gloves (I like the ones that go up to your armpits – photo in Chapter 1, Figure 1.7), a half-face respirator with P100 cartridges, a dust filter mask (for pasting out dye), and apron.
2. **Weigh your hide or hides**. All of your measurements of water, dyes, and auxiliary chemicals *are based on the weight of your hides*. Because this is a long and tricky process using chemical additives and liquors, I recommend weighing everything first and starting there. Each hide will weigh in a little differently, so make sure not to create one formula for all of your hides if you are dyeing them separately. You can dye your hides together but make sure you add all of the hide weights together and calculate your water, dyes, and additives based on that total weight.
3. **Add water to vat**. Fill your dye vessel with the appropriate amount of water (using the following equation) and heat it up to 68º–77º F (20–25ºC).
   Formula to calculate amount of water needed:
   500% * total weight of leather = Gallons Water
   Example: If we had 10 lbs of hides: 5.0 * 10 lbs = 50 lbs of water.
   Then you have to convert that water to gallons **(water = 8.8 lbs per gallon)**.
   So, 50lbs H_2O ÷ 8.8lbs/gal = 5.7 gallons H_2O.
4. **Add the detergent (or nonionic surfactant)** to the bath. This should be about .75% of hide weight (or literally a capful of detergent).
5. **Add the leveling agent.**
   Add 1% of total weight of hides.
   Our example: 10 lbs * .01 = 0.1lbs
6. **Wet out your hides.** Add hides to the vat. Allow the hides to soak in the water a minimum of three hours.
7. **Weigh out dye and paste it out.**
   Use 5% dye to hide ratio; a medium saturation of color.

   Our example: 0.05 * 10 lbs = 0.5 lbs or 8 oz. I convert to ounces (1 lb =16 oz) to be able to measure dye with a scale.

   Moving the hides to the side, add the pasted-out dye to the dye bath. (If you're curious about pasting out dye, refer to pasting out dye in Chapter 3. The dye is water soluble so it will dissolve in the solution quickly. In a half hour to 45 minutes or, as Lucas from ChemTan, says, "However long your shoulders hold out", check the color penetration by cutting a small swatch and blow drying it. You don't want a low-water immersion pattern, right? So, keep the leather gently moving. Swish . . . swish . . . swish. Think of it as a meditation. At this point you can add more dye to deepen or tone the color.

8. **Add Fat Liquor.**
   Use 6–10% fat liquor based on hide weight.
   Our example using 6%: 0.06 * 10 lbs= 0.6 lbs or 9.6 oz.

Dilute fat liquor to water in a 1:5 ratio; then, throw it straight into the bath. No need to remove leather. Leave the leather in your bath for a minimum of 2 hours. Feel the skin before and after this step to decide if more time is necessary. After 2 hours, look at your bath – does it look milky or greasy? If so, more time is needed to absorb the fat liquor.

9. **Add the glacial acetic acid** in increments.
   For each increment, use 1% acid based on hide weight. Then add acid in a 10:1 (10 water to 1 acid) ratio to water before adding to bath.
   Our example: 0.01 * 10 lbs= 0.1 lbs or 1.6 oz. Add 1.6 oz to 16 oz of water.
10. ***IMPORTANT: Always add acid to water!*** **Not the reverse – this will cause a violent reaction.** Add glacial acetic acid in steps so the acid does not damage the leather and so push the color too dark. Add acid in 1% or 10:1 ratio (10 parts water to 1 part acid) increments and leave it the solution for 20 minutes after adding each new amount. **Check the color of your hide after adding first amount of acid –** you still have an opportunity to change color, add dye, and to tone color at this point. Using a pH meter, remove a cup of the bath and let it cool below 100° F. Measure the pH of the water in the cup and continue adding acid until you hit the sweet spot of **2.8–3.2.** It is very important to get within this pH range as the acid will change the charge of the solution to bond the dye with the leather.
11. **Rinse in a Fresh Bath of Water.** Using room temperature water, rinse skins in a bath. Agitate gently and remove skins from bath.
12. **Toggle Dry*.** Leather likes to contract after getting wet and can result in major goods shrinkage. To avoid this, you must stretch the leather when it's wet! Using a wooden or PVC frame, waxed (or just thick) thread, and your leather needle, stretch leather by sewing through the edges and around the edge of the frame (see Figure 7.3) until the leather is stretched evenly over the frame. It may help to pin the leather to the frame in a few places that won't be used in creating your garment. **PIN HOLES are forever!** They will not heal – so choose where you pin, carefully. Make sure your sewing is *in opposite sections* – you can divide it into four or more areas. This will help so you can gradually tighten subsequent areas you sew. Your hide should be stretched but be careful of ripping the hide but pulling too tight!! It doesn't need to double as a trampoline – it just needs to be stretched some so it doesn't shrink too much as it dries. Allow hide to dry completely before releasing from frame.

*If you are dyeing garment-weight leather, you can most likely hang it on the line to dry but it will definitely contract a bit. The clothes pin marks will also be permanent so just pin the very edges or dry flat, face side up, on a large surface.

Problem solving: **If your piece is too dark** . . . you can raise the pH of the solution by adding 0.5 to 1.0% baking soda (based on weight of hides – sense a theme here??!). This will drive the dye from the surface into the hide resulting in lightening the surface color. After leaving the hide in this bath for at least 30 to 60 minutes, cut a small piece off the hide and blow dry to check the color. If it's still not light enough check the pH (to see if it is still very low = acidic) and add more baking soda (same increment as previously) and let soak for 30–60 more minutes. Lucas Paddock

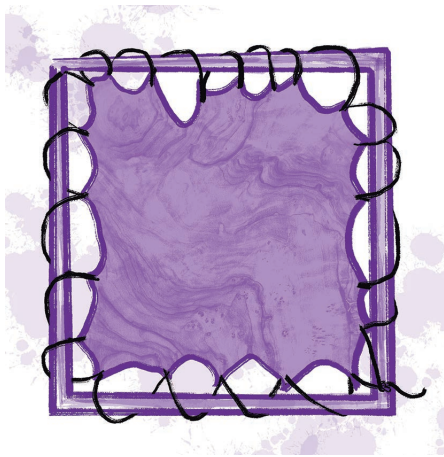

Figure 7.3 Toggle dry your leather on a frame! Make sure that it is stretched tight.

from Chemtan recommends that his technicians check again after 30 minutes and if the skin is not light enough still, leave the skins in the bath for another 30 minutes.

DYEING LEATHER WITH LEATHER DYE OR LEATHER PAINT

Painting leather is a fairly regular task for a painter/dyer. The most important part of the painting process is preparation and finishing of the leather. I have not included an exhaustive list of dyes and paints for leather but included my "most-wanted" frequently used products. The products vary in chemical composition and fall into three categories: oil, alcohol, and water based. The main difference between leather dye and leather paint is that paint sits on the surface of the leather while dye penetrates the leather. There are a range of pros and cons with each type of product. Please see table 7.2 for a comparison of brands, pros and cons.

Figure 7.4 Wool daubers can absorb an immense amount of liquid and are perfect for dyeing leather.

To apply these dyes, you can use a variety of applicators such as a dobber, brush, or rags to name a few. Each applicator will create a different texture depending on the desired end result. Usually the most desirable applicator is one that can be loaded up with a lot of dye. This helps to minimize streaking, especially on natural unfinished leathers. Play around with a few different applicators and techniques to find your dream texture.

PREPARATION!

Preparation is 75% of the work. If you prep the leather well, it will absorb and bond with whatever you decide to put on the surface. Deciding how to prep the surface of leather depends on the leathers' finish and type of leather you are working with. Leather that comes unfinished, like vegetable tanned leathers for example, absorb dyes and paints readily without any stripping. As a matter of fact, the surface preparation you may want to use on unfinished leathers is more like an additive that allows the paint to flow evenly over the leather surface. See Figure 7.6 for a comparison of veg-tanned leather prepared with water vs baby oil using paint and dye.

Figure 7.5 Commercial deglazers. These require a respirator to use!

The quickest way I know to prep leather for paint or dye is starting with the least toxic materials first and work my way up to higher-tox products if necessary. Much in the same way a nurse wipes your skin to clean it of oils, bacteria, and whatever else with an alcohol prep pad, I like to use 70% isopropyl alcohol on an old t-shirt or other soft rag and evenly wipe the surface

of the leather. Why not use 99% isopropyl, you ask? Using 70% is a great place to start. It is less aggressive than 99% and will not totally dry out your leather if the finish is easy to break through. If your leather has a shiny finish, you will want to use enough alcohol to make the finish slightly dull. In essence you are stripping the finish from the leather, so the pores will be open and ready to accept new color. Some commercially finished leathers can be very stubborn and even if you use something harsher like 99% isopropyl or denatured alcohol, it can be difficult to break through the finish. Angelus and Fiebings make a great leather stripper called "Leather Preparer and Deglazer". These products use acetone and ethyl alcohol (see note on using acetone) so use proper protection advised by the SDS. Funny thing, if you use proper protection advised by the SDS for these products, you will look like you are in the movie *Outbreak* in a full-on hazmat suit! This is why I use these products SPARINGLY, if at all. Also, a 1 liter bottle of rubbing alcohol is around $1.50 while these deglazers are $10 or more.

If you want to remove old paint from leather all together (for example on shoes) you can use acetone but it will really dry out the leather so be prepared to add leather conditioner like Lexol, Leather Rescue, Leather Honey, etc., after you repaint or dye the leather. Remember to do samples first! Leather is expensive!

Another way to prep finished leather (and great in a pinch) is to use very fine-grit sandpaper, 600 or to give the leather a light sanding. I emphasize the word **light**! You will NOT want to do this if you require a very reflective glossy surface as it will dull the surface without the use of a gloss top coat.

USES FOR OLD PANTY-HOSE AND GROSS UNDERSHIRTS!

Can I tell you how many uses I have for old pantyhose and used up undershirts!? I use panty hose to strain dye after I mix it up and as I pour it into my main dyeing vessel whether that is a dye vat, washing machine, or larger pot! Using tights can be a challenge in this application because they are more tightly woven and strain out too many particles that will actually dissolve in your hot water! BUT! If you find you are getting **fugitive dye** specks all over your samples, *do* strain with a more tightly woven hose! I also use pantyhose to create sausages to insert in shoes when I paint them to keep the paint off of the insides. They squish down to go in any shoe but puff back up to put tension against the edges of the shoe – so when you saw that squirrel when you were painting and your brush went astray, the paint gets on the sausage, not the lining of the shoe! See the part of this chapter all about painting shoes on how to make them!

Figure 7.6 Panty-hose stretched over a strainer to catch undissolved dye.

Old undershirts are THE BEST RAGS ever. They are soft, absorbent (because they've been washed 300 times), and generally do not leave lint on your projects. I use them for

applying paint, leather dye, glue, or anything else where I will have to throw away the rag after using. The rags that I use for polishing shoes I just keep in the shoe polish area with the corresponding shoe wax color. I use them to polish metal, apply metal rouge, and to handle a hot piece of metal. I also use the shirt rags as paint applicators when I want to add paint to something without seeing brush strokes and conversely I use them to blot paint off of surfaces where I am brushing on thick paint. Old undershirts are also GREAT to use to create a color sample ring for knit fabrics. We often have to dye knit to match performers' skin colors and it is so fantastic (and FREE) to have a knit skin tone ring to match skin tones! I have used them as knit paint samples for airbrushing and to demonstrate specific dye pattern designs to directors and choreographers when I am designing a show! I'm sure you can come up with 10 more uses!!!

Figure 7.7 I use cut-up shirts for everything. They are not as bulky as towels and it makes me feel good about using these nasty undershirts one more time before sending them to the trash.

Table 7.2 Leather Paint and Dye Comparison.

Product Name	Type of Dye/ Paint	Good Qualities	The Downside	Safety Info
Angelus	Leather Dye (alcohol-based)	Offers many colors. Is pigment rich so it can be thinned with alcohol and remain saturated.	Not sold or shipped to California, less available colors (22 vs 26) than Fiebings.	Hazard category 1–4, causes cancer, toxic to aquatic life.
Angelus	Leather Paint (water-based)	Offers a rainbow of colors, metallics, and pearlescent finishes, water-based, no ventilation required.	Can thicken over time and needs to be thinned, white dries out quickly.	No measurable hazards.
Fiebings	Pro Dye (alcohol-based dye with added oil dye)	Great range of colors, has an added oil dye so colors are richer, doesn't dry leather as much as regular leather dye.	Dries out leather, must condition leather before application, takes longer to dry, fume hood required.	Hazard category 1–4, causes cancer, toxic to aquatic life.

Product Name	Type of Dye/ Paint	Good Qualities	The Downside	Safety Info
Fiebings	Leather Dye (alcohol-based)	Great range of colors, less expensive than ProDye.	Dries out leather, must condition leather before application, leaves residue of powdered pigment, fume hood required.	Hazard category 1–4, causes cancer, toxic to aquatic life.
Fiebings	Leather Dye (water-based)	Beautiful array of colors, water-based, a dye that can be shipped to California.	Streaky, leather is stiffer than using ProDye, colors aren't as saturated as alcohol-based dyes.	NO hazard categories (at least in the 2008 SDS)
Fiebings	Acrylic Leather Dye (alcohol based)	Thin, so applies evenly, saturated colors.	Limited palette of colors, fume hood required.	Not classified as hazardous.
Fiebings	Acrylic Dye (water-based)	Can be used on finished leather; opaque, water-based.	Twice the price of Angelus leather paint, limited color gamut. No glitter, neon, or pearlescent offerings.	Hazard category 2B – eye irritation, otherwise pretty safe.
Eco-Flo Cova Color	Leather Paint (water-based)	Low voc, thin and transparent, can be mixed easily, can be used to tone or tint leather, nice alternative to toxic dyes.	For use on veg-tan leather, acts almost like a dye so doesn't work well on finished leather.	No measurable hazards.
Sharpie Markers	Permanent Markers	Available in an array of color and tip sizes, offer metallics, and white. Cheap! Available many stores.	Can appear less saturated than using paint.	Nonhazardous substance.
Meltonian Nu-Life Shoe Spray	Leather Spray Paint	Available in most shoe repair stores, fast and easy to use.	Super toxic, must wear ventilator even outside, finished item often looks plastic-y.	Hazard category1–4. Causes cancer, birth defects, toxic.

Figure 7.8 Acetone.

A NOTE ON ACETONE

According to the SDS for Acetone, it is a CNS depressant (or central nervous system depressant). This means if you expose yourself in areas with little ventilation or you use the product without the proper protection you can poison yourself. The CNS is responsible for involuntary (breathing, heart beating) and voluntary (walking, blinking) bodily processes. Believe me, you don't want this to become a long-term poisoning by exposing yourself repeatedly and becoming a vegetable.

The SDS also advises to use Viton rubber or PVA gloves. Nitrile gloves (my favorite) completely disintegrate when using acetone. If you plan on stripping leather shoes or other painted leather with acetone, have some PVA gloves on hand.

CHOOSE YOUR OWN ADVENTURE: DYE OR PAINT?

Leather Dye

If you would like to add a transparent layer of color to your freshly stripped leather, you can use a leather dye like Angelus or Fiebings. There are several different types and colors of dye and some are actually an opaque paint. They offer a stunning array of colors; check out Figure 7.8, the Fiebings leather dyes and paints color chart. Check out fiebings.com to view this chart in larger detail.

Figure 7.9 The array of Fiebings leather dyes and paints.
Photo courtesy of Fiebings.

There are three conditions you will need to meet to totally change the color of a finished hide with painted dye: it must start in a light color (or you have to make it light in color first), you must be able to strip the finish at least partially, and you must have a finish coat of some sort to seal the leather. **Leather dye is transparent so any color under your dyed layer will show through.** This is a wonderful thing to create depth and to tone leather away from or into another color. Let's say the designer wants to tone some of the red out of a brown leather jacket but wants all

of the original distressing to show through. You can find a green leather dye and dilute it with denatured alcohol (illegal in California by the way – in that case use 99% isopropyl), *first trying samples* on the inside of the jacket. For this type of application, I would use an old t-shirt rag or larger sponge and quickly wipe your mixture over the jacket. MAKE SURE to write down what ratios you used of leather dye and solvent (the alcohol), so you can mix up more dye when you run out!!! Add this ratio to the label of your container before you put it back in the flammable's cabinet just in case OSHA decides to stop by!

Begin by shaking the leather dye bottle vigorously. It likes to separate when sitting on the shelf. Using your applicator of choice, make even and nearly overlapping swipes over the leather, edge to edge if possible. If you need a larger applicator, use a whole sponge. If you are mixing dye and solvent, I like to have a package of 1, 2, 4 oz salsa cups on hand with lids – these can be found at most restaurant supply stores much cheaper than Amazon. These are great for mixing different samples – and keeping for touch-ups. For long-term storage a glass container will be best as the salsa cups can let minute amounts of air into the container and dry out the dye.

WHAT DO I DO WITH ALL OF MY LEFTOVER LEATHER DYE?

There are a few options here depending on the scale of the organization you work for. You can often dispose of chemicals in a designated place on the property of your workplace. If you are working for a small community theater or you are creating a cosplay for yourself, you can set the containers outside in a place to dry out. Because these dyes are alcohol-based, they dry out pretty quickly. Make sure that your containers are in a place where they will not get blown over or discovered by anyone who might be curious about your drying containers. Once the dye has dried and the container is completely dry, you legally can throw the containers in the trash.

Leather Paint

I like to use Angelus acrylic paint. It has good coverage and is readily available. After prepping your leather accordingly, find a very soft brush to apply your paint. Add your paint to a palette or dish and pick it up like you are painting with regular acrylic paints. I personally like to brush on some paint; then, with a crumpled t-shirt scrap, I tamp the area lightly to remove some paint. I do this over and over again – it creates a realistic coating that doesn't look plastic and does not peel, crack, or rub off! Finish the leather with a finishing product of your choice – please see finishing section following "leather paint".

Fiebings and Angelus offer an acrylic leather paint that works wonderfully if the leather is prepared and finished correctly! Another brand – a product by Tandy Leather, Eco Flo Cova Color – seems to be the only brand that offers specifically low-voc and water-based leather products, offering a range of opaque and transparent products. According to Hallie Dufresne from Rethreaded,

Eco-Flo Water stains are water-based and transparent, but layered in several coats (3 to 5) create really rich colors. We use it regularly in my shop. I have fund that the easiest application method for working on pieces larger than my hand are round art sponges with a soft t-shirt rag at the ready to buff up excess dye.

In my opinion, these are great if you desire a transparent and painterly look (Figure 7.9) but not great for full coverage as the opacity is not as high as Angelus and it requires more coats.

The exciting thing about Angelus paints (I know I sound like their biggest fan right now . . .) is that they also offer glitter coats that bond to leather and are flexible! They also offer pearlescent and metallic colors as well as neon. In my example I decided to do a drastically different color and go from dark blue to red to illustrate how you can choose to change leather to whatever color you want – you just have to use the right products.

Figure 7.10 Shoes painted with leather paint for the film *Scorpion King* to keep the sand out of background performers' sandals.

Supplies:

- Rags
- Leather paint
- Isopropyl alcohol or deglaze
- Soft brush or applicator of your choice

HOW TO *PAINT LEATHER*

1. **Gear up!** Gloves and apron! Lay down newspaper or brown paper on workspace.
2. **Prepare leather and shake up your paint!** To prep your leather follow steps in the previous "Preparation" section. Prepare your paint by shaking the leather paint bottle, vigorously. It likes to separate when sitting on the shelf. You can water down acrylic paint if you want a small amount of the original color to show through. Do not water the paint down more than 30% though, as you will decrease the paints' bond with the leather.
3. **Paint and blot.** Like leather dye, using your applicator of choice, make almost overlapping swipes over the leather, edge to edge if possible. Quickly, using your wadded up t-shirt rag, blot the leather paint where lines occurred from painting.
4. **Let your paint dry.** If you skip this step, your next layer of paint will remove your first layer of paint. I know watching paint dry is not exciting, but trust me, it's worthwhile!
5. **Apply a second coat.** Paint and blot a second coat. Once this layer dries if it is not opaque enough add another coat and keep going until you have reached the desired coverage.
6. **Finish coat/top coat.** Using the product of your choice (see

Figure 7.11 Cova color by Eco-Flo was used on this veg-tanned leather mask after assembly. You can see the mid-tones of the leather showing through the paint. Choosing this product for an antique rubbed look worked out!

upcoming section on finishing) and waiting until your leather is completely dry, apply finish coat and let it dry. You'll be good to go!

FINISHING

There are many finishing products out there. A very simple, cheap, and available product is neutral shoe polish. A professional dyer and educator, Teri Tevares, taught me this trick of using shoe polish to finish leather dye or paint – and it TOTALLY works! It also makes your new color look shiny and restores your leather to a factory-finished look. If you're interested in learning more about using shoe polish, I demonstrate how to use it as a finisher in the following "Hand Painting Shoes" section. If you desire a matte or super gloss finish or you just want a brush-on product, Fiebings, Angelus, and ChemTan all make brush-on products. ChemTan makes my favorite dull/gloss products, but you must buy it in large quantities; although they will send samples if you decide you want to try it before you make the investment. It is also thin enough to spray through a pre-val, but then you're back to requiring a half-face respirator and a ventilated space.

Figure 7.12 Topcoats come in many finishes. Angelus, Fiebings, and EcoFlo are some of the manufacturers of leather-specific top coats. Neutral shoe polish is a very inexpensive way to top-coat acrylic paint and you can buff to a high-shine if you want that look!

TRANSFORMING SHOES WITH LEATHER PAINT

This is one of the most frequently requested shoe alterations in theatre. I have met many a jaded costume designer who will refuse to allow crafters to paint a pair of shoes with acrylic leather paint because someone in their past, we'll call her Ms. Spackle, had spackled acrylic paint over pair of shoes for a previous design and they looked terrible – or using shoe spray is just how they do it in New York. Well, with this technique, you will be able to convince even your most stubborn

Figure 7.13 Angelus Glitterettes are a line of glitter coat paints formulated specifically for leather! Bring on those ruby slippers!!!

designer that using acrylic paint to change the color of shoes is a beautiful, longer lasting, and healthier solution. This technique will minimize personal exposure to the high levels of toxic chemicals when using shoe spray.

SHOE SAUSAGES – THEY'RE VEGAN!

I create soft "sausages" to stuff inside shoes when I paint them so I don't get paint on the interior of the shoe. Even though Patty LaPone is a pretty cool person, she would not be happy if she was handed her $500 dance shoes with paint all over the lining!

Figure 7.14 Create your own shoe sausages! Roll batting (left 2 images) and stuff into the end of a pantyhose leg. Tie it off and you're ready jam it in that shoe and do some speed painting.

HAND PAINTING SHOES

Figure 7.15 Before (left) and after (right) painting a pair of vintage shoes. Not only do they actually look like they are made of leather now, they look like they came from the store that way.

Supplies:

- Acetone (if they have been painted before)
- 99% Isopropyl Alcohol
- Rags (I like old shirt rags)
- A soft paint brush
- Acrylic Leather Paint
- Painter's tape
- Shoe sausage or something to stuff in shoe
- Optional: Edgecote or a matching sole color

HOW TO HAND PAINT SHOES WITH ACRYLIC LEATHER PAINT

1. **Gear up!** Gloves (NOT NITRILE if using acetone), a well-ventilated area, apron, respirator if using acetone.

2. **Masking.** You know how with painting anything with your house, prep is at least half the work? It's the same here. Start by taping off your shoes' sole by using your fingernail to get the tape around the edge between the shoe upper and the sole. Tape the inside of the heel. Tape the buckle and any other hardware you need to mask off. Don't forget to remove laces and/or add tape to the back of an ankle strap! Stuff your shoe with your sausage – you're masked! See top of Figure 7.17 for an example of a masked shoe.
3. **Stripping.** If your shoes are like the ones I used in my demo photos – which Ms. Spackle got her hands on using acrylic leather paint – using acetone to prep the shoes works well. Make sure you are in a very well-ventilated area when using acetone. Similar to when you remove paint from your nails, soak a small part of your shirt–rag with acetone and wipe the surface of the shoe. Don't get too aggressive and try to take all the paint off; just try remove most of a layer. It will open the grain of the leather to accept the paint more readily and will keep your new paint job from cracking.

   If your shoes are new and are made of factory tanned leather never painted by Ms. Spackle, you are safe to use 70% or 99% isopropyl alcohol (whichever works to knock the finish off and open the grain) wiped over the surface with a rag.

4. **Painting!** The time has come to paint! Make sure to shake your acrylic paint very well; sometimes chunks settle in the bottom. Some people even strain it I don't usually go to that trouble but if I find a chunk I definitely remove it from my palette.

   Mix: With the brush you will be using to paint the shoes, mix up your color and make sure that you have created enough mixed paint to provide coverage for both shoes and a little extra for touchups for the dressers on your show. Make sure to start with your LIGHT color first and slowly add in drops of the darker color – this way you will avoid wasting a lot of paint. Trust me, I have wasted my share of paint this way!

Figure 7.16 Masking and stuffing a shoe so no paint transfers to the inside of Broadway Betty's shoes are the touch of a professional (left). Blotting your first coat of paint removes excess lines or thick areas of paint and makes the paint look natural (middle). Add more paint after your first coat dries.

Paint: Using your soft brush, choose an area of the shoe to paint. I like to paint a shoe in thirds: front, instep, and outstep. This way, your paint doesn't dry before you get back to it to blot it. Start painting in your chosen area and taking a folded or wadded up shirt rag, blot your paint lightly. I use a very light tapping motion and make sure that all of the paint lines are gone.

Then I move onto another third of the shoe. Once you have covered your entire shoe, let it dry and then repeat. Do as many layers as you have to, to get the coverage you need. Make sure to check that you're getting your paint into all of the small holes and in the cracks and crevices.

Show the dressers the blotting technique as well, and you won't end up with big chunky shiny gross areas. I prefer small salsa cups for this purpose – you can even throw a piece of masking tape on the top with the actor/character name to hand off to wardrobe.

5. **Edgecote.** If you don't have Edgecote, that's OK! You can use flat black acrylic leather paint. Just make sure to blot your streaks the same way you did with the upper of the shoe. That's exactly what I did in Figure 7.17.

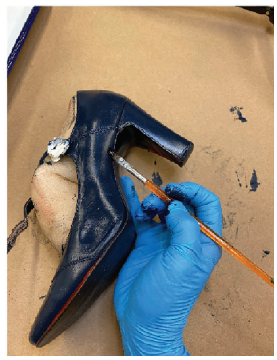

Figure 7.17 If you don't have edgecote, just use black (or matching color) to paint the sole, inside heel, and edge of sole.

6. **Seal/Finish**. To finish your shoes after letting them dry for at least an hour and even longer with humid conditions, take cake shoe polish and apply it liberally with a rag. I like to use the soft T-shirt again because it doesn't leave streaks or Harry bits on my shoes. Don't freak out when your shoe looks dull at first. Let the polish set up for about 5 to 10 minutes, then you can take a brush to it with back-and-forth motions; shine that puppy! I used black polish to antique the example shoe but usually I use neutral polish. Typically, I use neutral cake shoe polish because it's clear, cheap, and lets the color come through. In my example (Figure 7.18) I used black shoe polish to antique the navy color of this vintage shoe a little bit more. Make sure you hit the entire shoe and the strap. Don't worry about the soles. The black polish works really well because it sticks in all of the crevices and makes the shoes look antique.

Figure 7.18 Finish paint with shoe polish and buff to desired finish with a shoe brush!

LEATHER MARKERS

Leather markers are a great way to add detail to a leather piece. There are a few brands out there formulated just for leather but are really intended to be touch-up markers for leather goods like bags, shoes, and upholstery so they are available in a limited color gamut. Sharpies are the basic go-to as they are permanent, come in a large variety of colors, include metallics and white options, and an array of tip sizes. Another great option is the fillable marker by Angelus. They come in three tip sizes and you can put premixed colors,

Figure 7.19 Angelus fillable markers.

metallics, whatever you like in these markers. They also sell a thinning agent called 2-Thin that thins the paint without weakening the bond to leather. That product can also be used when painting with an airbrush with leather paint. Another type of marker people like to use are comic markers. These are also alcohol-based and come in many colors and tip sizes.

PAINTING WITH LEATHER SPRAY PAINT

This is my **least** favorite way to paint leather. Leather spray is made by several companies, the most common brand being Meltonian Nu-Life Shoe Spray. It comes in small or large spray paint cans. It is a quick and dirty way to change or touch up the color leather. It requires excellent ventilation, a P100 half-face respirator (even when outside), and gloves. The end product is often plastic-y looking and might work for the 5th ensemble guy to the right tapping in the back-back row. *Check out Table 7.2 for health info on this stuff, it's nasty!

HOW TO PAINT SHOES WITH LEATHER SPRAY PAINT

1. **Prepare Leather.** Prepare leather by hitting it with alcohol or stripping the color all together with acetone.
2. **Mask Areas You Don't Want to Paint.** Tape off the shoe soles and insert a rag or batting sausage to ensure spray doesn't go inside of the shoe.
3. **Spray First Coat.** Spray a light mist of shoe spray over the shoe. Make sure to turn the shoe upside down so you get into the arch area. Let dry, depending on how humid your location is, between 15–45 minutes. See box on how to use aerosol paints.
4. **Paint Second Coat.** Spray another light coat. If you have full coverage (check when it's dry) then stop. If you see what painters call "holidays" – empty spots with little paint, then add a third coat.

A NOTE ON PAINTING WITH AEROSOLS . . .

You will want to use light coats of whatever you are misting onto your leather surfaces. If you fail to do this, the leather will look very plastic, the paint may not bond well with the surface, and heavy spraying can leave three-dimensional paint drips.

Spray from side to side. Start misting your paint from left to right, then right to left. Imagine you are spraying your paint and letting it fall onto your surface. You will be more successful with several passes like this rather than hosing the surface directly in one spot with paint. To remove paint, go back to the prepping with the acetone process.

5. **Finish.** You can choose any of the techniques in the "finishing" step of painting and dyeing leather. The most common way to finish leather painted this way is to use neutral polish from the can on a soft rag. Apply polish on rag and rub lightly all over. Wait until it dries (15–30 minutes) then polish the shoe or surface with a shoe brush in a side-to-side motion.

PAINTING AND DYEING UNFINISHED AND VEGETABLE-TANNED (VEG-TAN) LEATHER

You can prep veg-tan in a few ways: using water to wipe off any of the residue that's left on the tanning process or using some sort of oil. You could even do both but I think when you see the results of water vs oil prep it will be clear which one works more effectively!

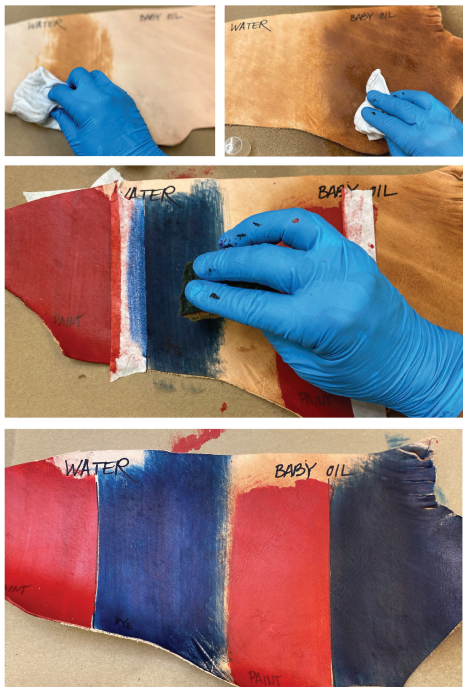

Figure 7.20 A comparison: prepping veg-tanned leather with water vs. baby oil. Top left: applying water with rag, right: baby oil. Middle: applying leather dye with sponge on side prepped with water. Bottom: the dried red paint and blue dye. Note that the water-prepped area is streaky while the area prepped with baby oil is a solid smooth color and darker too.

HOW TO PAINT VEG-TANNED LEATHER

1. **Prep leather.** Use either water or oil and wipe or spritz area of leather to be painted. In Figure 7.6, I used a mister to mist baby oil on the right of my sample and water on the left side.
2. **Paint.** In nearly overlapping passes, add paint or dye to your surface. With paint, use the blotting technique I talked about in the painting shoe section to get rid of any paint ridges. I used a 1" wide brush for the paint (angelus leather paint) and a chunk of sponge to wipe on the dye. Let it dry! Apply second coat if needed.
3. **Finish with your finisher of choice.** Make sure to finish your leather or do a crock test if you don't want to finish it – to see if any of the dye rubs off. If it does, add a finisher.

Figure 7.21 Leather and other samples for Chris Pratt's infamous trench coat in *Guardians of the Galaxy*, toned with transparent colors to allow original materials color to show through. Samples and photos by Jack Taggart, a master breakdown artist.

TONING LEATHER

Toning leather is really adding a glaze of color to tone out specific colors or to add highlight and shadow. The principles of watercolor or dip dyeing apply here in the way that toning requires the use of a transparent medium so the original color shows through the final coat. This will create rich realistic textures that designers love. Like toning any other object, using the complement or split complement to the color you want to be done with is key. If you want to add highlight and shadow you can use paint or dye, depending on the finish of the leather. If you want to add a quick shadow for example to a finished breast plate, using transparent leather paint watered down with solvent will give you a nice effect. You can even use watered down acrylic leather paint (as long as it's transparent). Leather dye can be used on unfinished leather for toning, but will need to be "watered" down (with solvent like denatured alcohol – now illegal to sell in California) a great deal to successfully tone your leather. As you may have gathered at this point, I choose the water-based version so I don't have to expose myself to the nasty fumes from solvents. Fiebings has a water-based dye called "Leathercolors" that could be used to tone finished leather. I would most definitely add a finish coat with that product.

Figure 7.22 Leather boots broken down by Jack Taggart with a wood burning tool for *Gray Man*.

Photo courtesy of Jack Taggart.

BURNING LEATHER

Another way to create depth in leather is to burn it. That's right – literally BURN it. People use embossing tools, wood burners, soldering irons, hot metal, whatever burns the leather surface. This is a great technique for aging shoes! Burn the areas that need to look more worn or burnished! See Figure 7.22 for an example of this technique.

BURNISHING LEATHER

Burnishing leather essentially polishing leather. You can burnish the edges of thick leather with a Dremel tool using a custom-made bit or just buy one from Amazon (see Figure 7.23). Wood is preferable because it smooths the edges of leather without burning or ripping the leather like metal or sandpaper could. This is a wonderful and professional finish for the edges of leather soles or armor. To take it up a notch, you can use edge enamel to really create a glossy shine to your finished edges.

Figure 7.23 Gold-foiled leather that has been tooled for *Exodus*, 2014. Fox Studios.

FOILING LEATHER

This process is virtually identical to foiling any other surface. Add glue to areas you want to apply foil, let glue dry, and add foil. Rub foil gently after it is dried to really work it into the leather. If a solid metal surface is required, after your first coat of foil is dry, add more glue and foil to areas where cracks occur. You can also create depth by choosing a base color that your foil metal color would patina to, to show through the cracks of

the foil. After burnishing with a soft brush, you can seal the surface all at once. If you want texture with your foil, you can glue items like rope, findings, or even create designs on the leather with a texture medium, then foil over the top. For in-depth process steps and photos, see the Foiling section in Chapter 16.

COLOR REMOVING LEATHER

Did you know you can color remove leather too? There are great directions for resist dyeing leather in Kim Erwin's book *Surface Design for Fabric*. I have never needed to tie-dye leather, but if you do, her instructions include shibori resist and using a chemical resist.

LASER CUT AND SILK SCREEN

This beautiful costume from *X-Men Apocalypse* was made by laser cutting gold leather and overlaying it over screen printed leather to give the garment dimension. Many hours of labor in this costume, and apparently it is quite heavy!!

Figure 7.24 Robe from *X-Men Apocalypse*. Close up of leather screen print (top right) and laser-cut gold leather (bottom). Fox Studios.

THE BOTTOM LINE

Whatever way you choose to change the color of leather, remember to seal, topcoat, or add moisture back into your leather in some way. After all, it is skin, and skin will crack and degrade if not properly moisturized or sealed. Many products intended for leather are very harmful to breathe or absorb through your skin, so please protect yourself!