

Costume Crafts at 50° Below

The Fairbanks Non-Toxic Crafts Cookbook

By Tara Maginnis

The best way to avoid damage from toxic materials in the work place is not to buy gloves that you never wear, nor to use respirators that never get their filters changed, nor to complain about the lack of proper spray booth that “the administration” will never pay to install anyway. The best way is to *avoid using toxic products in the first place*. You can prevent problems by getting into the habit of buying and using alternative non-toxic products and by refusing to use dangerous materials when safe ones are available.

I discovered this rather obvious fact back in 1988 when I was first hired as the costume designer at the University of Alaska, Fairbanks. In Alaska I had, as most of us do, an unventilated costume shop space without a paint booth. In all my experience in the lower 48, when a costume shop did not have a paint booth, it was perfectly simple to go *outside* for a naturally ventilated work space. In Fairbanks, where temperatures are below freezing nearly the whole school year and were actually -30% to -60% through our busiest production period, this kind of outdoor work is totally impossible. Therefore we simply could not use *any* toxic products: no spray paint, no barge cement, no FEV. So, I looked for as many non-toxic low tech substitutes for toxic products and techniques as I could find.

Finding them can be a challenge. If you are unsure about the safety of a product (or even if you are not), legally you need to write to the manufacturer for a Material Safety Data Sheet (MSDS). An MSDS will tell you under what conditions the product is safe or unsafe, how to dispose of it, and what dangerous ingredients it has (if any). It is now required by law that companies provide these sheets to consumers. It is also required by law that you have on file (available to employees and students) copies of the MSDS for every chemical product you use in your shop. You are also required to provide employees and students with proper safety gear (gloves, respirators, goggles, ventilation, etc.) for any toxic products you do use, or face heavy fines. Therefore it's in your best interest to use as few toxic products as possible.

For years I have been attempting to comply with the MSDS law; unfortunately, the suppliers have not. One supplier informed me that his company's legal counsel indicated that, since his product (a) was not an industrial product and (b) contained no toxic ingredients in any case, the company was not required to supply MSDS's. Cosmetic products come under the jurisdiction of the FDA, which only approves non-toxics, and so are not required to supply MSDS's. Several others simply did not reply to inquiries. My campus Risk Management Office, which is supposed to assist in getting MSDS forms for all products used on campus, had no better

luck in forcing MSDS's out of manufacturers.

Often it is the least offensive products that are MSDS-less. Companies with products that are not toxic, are certified as non-toxic, and which are sold without restrictions for home use rarely get requests for technical documents on their safe handling. For instance, it is impossible to get an MSDS for Karo corn syrup because it is a food product.

However it is still desirable to get MSDS's for non-toxic products when possible. They are informative. For example, even harmless Rit dye contains enough salt to be a strong skin irritant, and most non-toxic acrylic paints, if inhaled in a poorly ventilated space for hours, cause respiratory irritation. Obviously eating either wouldn't be especially good for you, and an MSDS will also detail what to do if someone does.

For a basic start, begin by looking for products that are clearly labeled as non-toxic. The best place to look for new non-toxic products is in the children's craft/art supply area. Often when a company invents a new weird product that it doesn't quite know what to do with, it tries to sell it as a “toy.” Many of these products are non-toxic and are sold in small, cheap quantities that facilitate trying them out without breaking one's budget. You should still check for the markings of “non-toxic” on the packaging, since many “children's” art products do not conform to safety requirements, such as rubber cement, airplane glue, oil paints, turpentine and many other older products. However, this area has consistently yielded the most creative non-toxic materials for my shop.



RESIST PAINTING ON SILK WITH LIQUID RIT DYE FOR ROSALIND'S WEDDING DRESS IN AS YOU LIKE IT.

PHOTO: TARA MAGINNIS

After obtaining a new product, experiment with it on a variety of fabrics to determine its best use. If you find that it is in fact useful to you, write the company for an MSDS. What follows are some of these non-toxic substitute products, and the techniques we have used with them in Fairbanks. Many of these substitutions you may have discovered for yourself already; others you may not.

PHOTO: TARA MAGINNIS



ROSALIND'S RESIST-DYED COSTUME AS USED IN AS YOU LIKE IT.

OUTLINING

Instead of using toxic permanent markers, we did stripes and outlining on fabric with *Pentel Fabricfun* pastel dye-sticks. These cost much less and have a nice, rough illustrative "texture" to the lines. Since 1988, several marker companies have developed non-toxic permanent markers. Most notable are *Dennison Mark Master* broad-tip permanent markers, which come in neon colors with 3/4" tips. Look for "Conforms to ASTM D4236" on the label.

DISTRESSING/FEV

Instead of using FEV or French enamel varnish (composed of shellac, denatured alcohol, and leather dye), we sprayed with a mixture of liquified *Rit* dye, water, and acrylic glaze (shiny) or simply diluted *Rit* (matte). These colors tend to fade and run when washed, but are very cheap. Substituting diluted *Tulip* dye for the *Rit* makes a more permanent if more expensive mixture.

DISTRESSING/BLEACH

Instead of spraying diluted bleach on fabric (used to cause fading), we "faded" by diluting white acrylic paint with *Phlexglu* and water and spraying it on. For temporary fading, we used diluted white tempera paint on smooth fabrics, or brushed cornstarch onto woollen fabrics.

BARGE CEMENT

Since we couldn't use *Barge Cement* or other normal rubber cements to hold down leather, we substituted *Tanner's Bond Craft Cement*, which, for leather, works just as well. Foam, which will not stick together with craft cement, can be held together with "cool-melt" glue.

SHOE PAINTS

Naturally we couldn't use *Magix* shoe spray inside, so we made do for most of the year with plain acrylic-type paints. These peel and crack and generally are a last resort as a substitute. However, we finally discovered *Fiebeng's Acrylic Dye*, a new product which works substantially better, although it requires brushing, not spraying on, and doesn't work on suede. Tulip fabric paints, when thinned with water, also stretch with the shoes and somewhat resist cracking.

METAL FINISH

When in graduate school in the mid 1980s, I was introduced to the "Bratislava Cookbook" method of making a metal finish introduced in *Theatre Crafts* during the 1970s. It looked great, but used large globs of rubber cement sprinkled with loose bronzing powder. Bad idea. Instead, I carefully (with respirator and gloves) mixed bronzing powder into a solution of *Phlexglu*. In solution with the glue, the powder is rendered essentially harmless. In addition, the glue, unlike commercial shellac bases, is not toxic in itself. The mix can be manipulated with a paint brush to be as rough or smooth as this other older recipe. (Warning: Mix up only as much as is needed for the job at the time. The mix tarnishes in solution and produces gas. Because of this, a tight lid on a can of leftover mix is likely to blow off after a few days and possibly injure someone.)

HAT STIFFENING

We brushed diluted *Phlexglu* onto buckram instead of using hat size. This is also good for stiffening felt for hats or armor without making it brittle.

PROCION DYE

Procion dye powders are rumored to be carcinogenic (this has never been proven) but hitherto have been the only really strong fiber-reactive dyes available. Now Cerulean Blue, Ltd., has come out with *Liquid Procion H* fiber reactive dyes which are safe for use without a respirator and are perfect for painting on fabric.

TATTOOS

Instead of expensive and irritating (to the skin) temporary tattoos, we stenciled hypo-allergenic make-up on the skin. The stencil was made by photocopying the tattoo design

onto overhead transparency plastic and then cutting out the design with a rotary knife. Makeup was then sponged through the stencil.

MARBLEIZING

Instead of marbling fabric with oil paint thinned with turpentine floating on water, we used *Neopaque* paint thinned with water on a surface of carrageenan. This is a really interesting fabric painting technique, although time consuming. (For a detailed description of how to marbleize fabric, read "Marbling Fabric," *Sunset Magazine*, August 1988, pp. 66-70.)

LEATHER FINISH

As with the "metal" finish, again we used *Phlexglu*, this time with brown *Rit* dye and a little brown acrylic paint in the mix. The slight translucence this causes gives the "leather" added shine and texture. The glue can be brushed while wet into a rough or smooth texture as desired.

WET MUD

To make a quick-change costume for *Curse of the Starving Class* with total "wet" mud covering, we covered the costume with a mixture of approximately equal parts of acrylic paint, *Phlexglu*, and sawdust. We varied the mix's color from batch to batch, and sponged it on the costume in layers, giving texture. After drying, all the "mud" was coated with *Hyplar Acrylic Transparentizer* (acrylic glaze) to give a permanently "wet" finish.

WIG LACQUER/HAIRSPRAY

Hairspray is the most annoying "unreplaceable" item we have to use. Most often, actors use mousse or molding "mud" for their real hair when possible, but for big stiff wigs for period shows these substitutes won't do. For these, we dilute *Phlexglu* with four parts water to one of glue, put it in a laundry sprayer, and treat it like lacquer. This makes a permanently stiffened wig that needs few touch ups. For a milder hairspray look in wigs, we dilute the *Phlexglu* down to 1/10 of the mix. Don't use *Phlexglu* on real hair since it **does not wash out**. When we *have* to spray real hair with hairspray, we use pump sprays which put less vapor in the air than aerosols.

COLORED HAIRSPRAYS

To give someone the kind of strange colored "punk" look of brightly colored hairspray, we dilute liquid makeup 50-50 with water and squirt it on with a laundry sprayer. Test your mix on a hair sample first, because some kinds of liquid makeup are easier to wash out than others. For wigs on which we want to do a permanent color, we dilute *Tulip Fabric Paint* or *Liquitex Concentrated Acrylic Color* with water and spray it on.

MASKS

Instead of demonstrating celastic masks in the costume crafts class, we made masks from plaster bandages. These have the advantage of being able to be directly molded on a face pre-coated with petroleum jelly. We then built up the masks with foam pieces and covered the foam with

more plaster bandage. Spackle or gesso for smoothness, then paint with acrylic paint. Other wonderful substitutes for celastic are the new thermoplastics sold by Unnatural Resources, most notably *Veriform* (aka *Hexelite*) and *Friendly Plastic*. While these products are prohibitably expensive for many theatres, they are unquestionably superior to the product they replaced. Thermoplastics, as the name implies, are molded by heat (hot water or heat guns), not toxic chemicals. They can also be remolded multiple times. For theatres with very low budgets, the ancient arts of papier maché and muslin maché can provide excellent results with only wallpaper paste and scrap materials.

RESIST DYEING

When we had to do resist dyeing for Rosalind's wedding dress in *As You Like It*, we avoided *Inkodyes* and brushed on liquid *Rit* instead. *Rit*, being a weaker dye, did not produce as bright a color as the alternative, so two applications were required. If we were to do this again, I would use *Tulip Designer Dye* which is newly available in craft and sewing stores. It works much better and goes onto the fabric almost exactly the same color as it finishes. Another note: When you live somewhere you can't find gutta resist in stores, use *Karo* syrup or mucilage instead, as all three work fine. (We used *Karo*.)

MISCELLANEOUS

While this isn't a substitute for anything in particular, we did make lots of use of another non-toxic product which is available nearly everywhere: *Slick Pens* (aka *Paint Pens*, *Fabric Paints*, *Paint Your Shirt*, etc.), the little squeeze bottles of paint or glue and glitter that children use to decorate T-shirts and sneakers. In a town with incredibly limited fabric choices, it allowed us to decorate unassuming polyesters into glittering brocades with complete ease. In addition, these products are completely safe in the washer and dryer and *do not require heat setting*, even when thinned out and used as a fabric paint and not simply as squiggles. (Don't treat this stuff as a joke just because kids use it!) **TD&T**

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SUPPLIERS

Phlexglu
Spectra Dynamics Products
415 Marble NW
Albuquerque, NM 87102
505-843-7202

Fiebling's Acrylic Dyes
Tanner's Bond Craft Cement
The Leather Factory
2750 N. Clovis Avenue
PO Box 8338
Fresno, CA 93727
209-291-5533

Liquid Procion H
Neopaque Paint
Cerulean Blue, Ltd.
PO Box 21168
Seattle, WA 98111-3168
206-443-7744

Tulip Designer Dye
Slick Pens
Brooks and Flynn, Inc.
PO Box 2639
Rohert Park, CA
94927-2639
707-584-7715