

# LEMON-ETCH LITHO:

## Home Litho for the Press-less

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### INTRODUCTION AND GENERAL NOTES:

Lithography as a print medium has over 200 years of innovation and tradition, and continues to be used by artists to create amazing prints. Litho's extensive range of mark-making possibilities has always been one of its greatest strengths, but the need for a studio with equipment and chemistry has always been one of its greatest challenges. Around 2012, Émilie Aizier alias Émilion, (France), worked out what is now called Kitchen Litho, a method of lithography using basic materials but has limited mark-making possibilities and still required a press. Many people since Kitchen Litho came about have modified it and come up with a variety of methods which work to a greater or lesser extent. We have attempted to address these issues with a technique that allows for a wide range of mark-making and does **NOT** require a press.

Our guiding principles in our research were to work with available materials in order to achieve reliable tonal marks that speak to the heart of Lithography and can be printed without a press.

We wanted to make all the possibilities of litho even more accessible, which required:

- a) having a significant tonal range using traditional litho drawing materials (pencils, tusche, etc.),
- b) using basic materials for processing,
- c) being able to print without a press,
- d) getting consistent results for printing small editions, without scum or stability issues.

Although we began our research with Kitchen Litho, we eventually shifted along the spectrum to a method much closer to traditional stone lithography. We have managed to create, process and print small editions by hand, without a press. These images have been both black and white and color, incorporating a range of tones from light to dark, using litho pencils and tusche.

### Notes on Materials:

For professional results, there is no escaping the fact that certain materials are necessary. In this case, lithographic inks, or etching inks as a second tier option, are needed. Gum Arabic is also a useful and necessary item. We preferred the powdered gum because we could make up a small batch for what we needed; it is economical; it doesn't go bad while in the powdered or crystal form. (See the Suppliers List at the end of the Notes.) However, for many other materials, we have been able to substitute easily found replacements. With a nod to Kitchen Litho, we have used Lemon Juice (approx. pH 2.0) for our acid. We found this worked better for us than Cola (pH 3.0) or vinegar (pH 2.5). And we experimented with several different processing options before settling on the methods described below. Our choice of a bone folder came after trying many options (spoon, flat spoon, baren, fiberglass squeegee); it is a handy tool for artists, and it is able to give us a broader contact flat for printing.

For the best tone and texture, use Korn's or Stones pencils #5 and #3. Korn's or Stones #1 is good for graphic blacks, but is otherwise too soft and greasy to etch and print tones well.

Thinner paper works best. The thinner the paper, the easier it is to burnish by hand, and therefore, gives better tone detail and texture. Rives Heavyweight or Lightweight paper works well for graphic images, but will be more effort to print.

Another benefit that has surfaced from this research: An entire litho "kit" could be prepared for the artist on the go or one heading to a residency, and will not take much space or effort. And will not be much of a problem traveling! There are still many possibilities to explore, and to continue researching. This is what we have now.

As with any process, practice will help. May the Litho Gods smile on your efforts!

Good luck and enjoy!  
Carolyn & Emma

## MATERIALS:

*Supplier List is at the end of the notes.*

Aluminum foil

2 pieces of plexi – one is for your printing plate, one will be for your inking slab

1 - 4" brayer (Speedball is fine)

1 – 2 ink knives to mix ink

A selection of Litho inks (etching ink will also work)

Litho drawing materials: Litho pencils or crayons (Korn's or Stones), tusche, Polychromos Pencil

Flour (can also use talc or French chalk)

Lemon juice

Gum Arabic (powdered or chunks, food grade is easily available; or liquid)

1 – Bone folder (one thin side should be fairly flat)

1 – 2 pieces of cheesecloth

2 bowls or containers -- one for clean water, one for dirty water

1 – 2 sponges

Gloves (for clean-up)

Shop towels (heavy duty paper towels) or rags

Cheap vegetable oil for clean-up and processing

Soap and water for clean up

Newsprint

Thin Asian-style papers (can also print on heavier papers such as Rives Lightweight or Heavy-weight)

Small container with a lid for storing gum in refrigerator

80 grit or 150 grit sandpaper

Small cotton pads (from make-up aisle at the store) or cotton balls – optional

1 – 2 soft brushes - optional

Fine point Sharpie (for registration marks) - optional

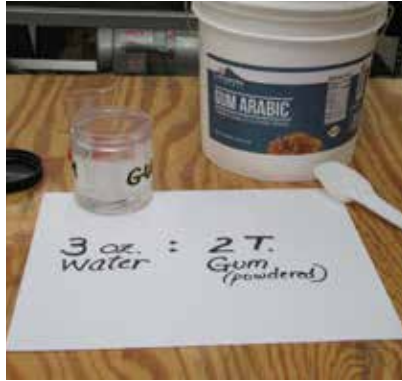
No. 2 graphite pencil

Apron or work shirt

Shelf liner (helps keep your ink slab and image plate from moving or sliding around)

## PREP:

1. Make your gum Arabic at least 24 hours ahead of use: in a small container, place approximately 2 – 3 ounces (60 – 90ml) of warm water; add 2 – 3 T of powdered or chunk gum; cover and let sit overnight. Stir well, cover, and keep in the refrigerator. If it feels very thin/watery, can add a bit more gum.



2. Using 80 grit or 150 grit sandpaper, sand the surface of one sheet of plexi until it is fully frosted. This should take about four passes. Rinse with water between passes.



3. Tear a sheet of aluminum foil a few inches larger than your plexi. Evenly spread a small amount of water onto your sanded plexi with your sponge. Place aluminum foil onto plexi, **DULL SIDE UP**. With a cotton pad or a clean shop towel, smooth aluminum foil onto the plexi until it has completely adhered and is smooth.



4. Carefully flip the foil/plexi face down onto a clean sheet of newsprint, dampen edges of the back of the plexi and fold extra foil over onto the back of the plexi. Flip the foil/plexi back over.

PREP: (cont. drawing)

Create your drawing on the **dull surface of the foil**. Leave a small border around the image. See the notes below for helpful hints on drawing. As with traditional litho, try to avoid greasy fingerprints all over your image area.





## PROCESSING:

1. Set your image plexi on a piece of shelf liner so that it doesn't wiggle around on you.
2. Apply a small amount of talc/flour to your image on your plate, and gently buff it using a bit of shop towel or cotton pad. This will allow the etch and gum to stay on the image more easily.
3. Using a shop towel/cotton pad/brush, apply lemon juice to your entire plate. With the shop towel/cotton pad/brush, massage lemon juice over the entire plate. Be gentle over your image area; can be more firm over your borders. Then allow lemon juice to sit on your plate for 4-5 minutes.
4. Use your sponge and a bit of water and gently rinse off the juice and dry sponge your plate.
5. Apply some gum arabic to the plate and massage over the entire plate. Be gentle over the image area. Allow gum to sit on the plate for 1-2 minutes.
6. With a barely damp sponge, remove excess gum from the plate. Quickly but gently buff gum into the plate with a round pad of cheesecloth, leaving a thin layer over the full plate. Allow the gum to dry completely.
7. Wait 15+ minutes (or longer).



*Setup for processing.*



*After buffing with talc/flour, apply lemon juice to entire plate; massage gently. Allow to sit for 4-5 minutes before moving onto the next step.*



*After rinsing with water, apply gum.*



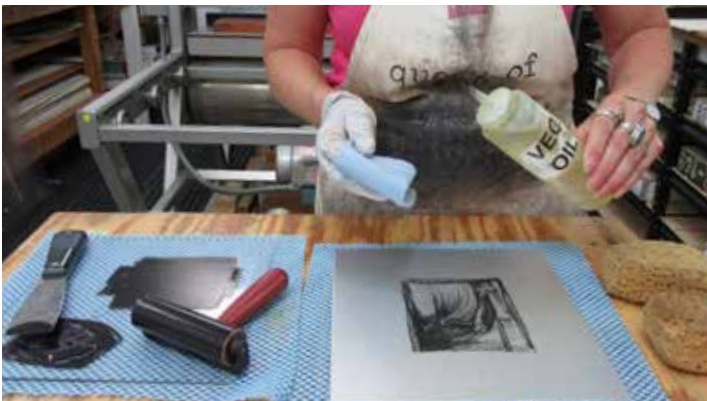
*Remove excess gum and buff.*

## PRINTING: Set Up

- a) Clear your work area.
  - b) Get 2 bowls: fill one with clean cold water, leave the other empty for dirty water.  
*\*Make sure to rise sponges thoroughly prior to first use, with clean water*
  - c) Set one plexi sheet on top of shelf liner for your inking slab. Lay out a small amount of ink, and roll out a thin slab of ink using the brayer.
  - d) Tear down several sheets of newsprint to be larger than your printing paper.
  - e) Prep a stack of printing paper and put registration marks on the back (in pencil) if need be.
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## PRINTING:

1. Wear a glove and using a shop towel, apply a very small amount of vegetable oil to your image area and massage the surface, removing the drawing materials. You should see a ghost of the image etched into the foil.



*Wash-out image area using a small amount of vegetable oil.*

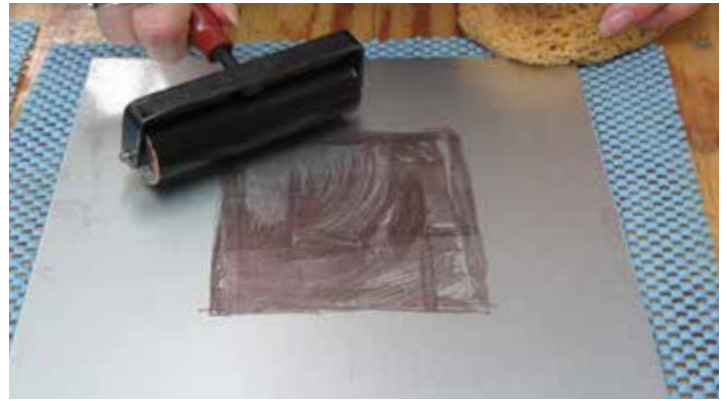


*Massage the surface, removing the drawing materials.*

2. Using a water-dampened shop towel, rinse off all of the dried gum and excess oil from the surface of the image plate. Rinse thoroughly! If you still see a bit of drawing material in the image area: put a small amount of oil on the plate, use another wet shop towel to massage oil/water mix over the image area. Use another damp shop towel to wipe the surface, removing the extra oil.

## PRINTING: (cont.)

3. Wipe the plate with your Wet sponge, then Dry sponge, and immediately roll over the image with ink. Repeat approx. 2-3 more times to “bring up” the image – do not forget to wet sponge, dry sponge before each inking!! Sponge one last time and use your finger or dampened cotton-stuffed stocking to remove any ink residue.



4. Lay a piece of newsprint down over the image. Place a second sheet of newsprint over the printing sheet. Using a bone folder (side) or flat wood spatula, hand burnish the back of the newsprint. First newsprint should be a bit light.
5. Wet sponge, dry sponge and roll -- repeat 2-3 more times and pull another newsprint. Pull newsprints until the image is up, re-inking between prints. Image should get ‘better’ after a few printings.
6. When ready to go to ‘good’ paper, be aware that the first one on good paper might be a bit light. The second one should be better. Don’t forget to place a backing sheet of newsprint over your ‘good’ paper before printing. The backing paper will move around as you burnish, but the print paper should stay put.



*When finished printing: Considering the fragility of the foil, when we are finished printing, we have removed the foil from the plexi and not worried about saving it for future printing. If you wish to save it, I recommend keeping it on the plexi and prepping another piece of plexi for the next foil image.*





## CLEAN UP:

### To save ink:

Pull off a sheet of foil approx. 10" long and fold in half. Using the ink knife, place the unused ink in the center of foil rectangle. Fold this in half, so that ink folds onto itself. Neatly fold sides and top down (do not crimp!). Label outside of foil packet or tape a draw down of the ink to the outside. Ink saved this way should last for over a year.

### Slab, brayer, and ink knives:

Using an ink knife, scrape up extra ink from the slab, using one of the newsprints as the disposal sheet. Roll the brayer over the slab again, scrape up again. Repeat until most ink is removed from the brayer and slab.

**Wearing gloves:** pour a small amount of vegetable oil onto the slab, and gently roll brayer over it. Use a shop towel or rag to dissolve/wipe off all remaining ink from the plexi slab, the brayer and the ink knife. Use soap and water (dish soap is fine) or some glass cleaner spritzed onto a shop towel to remove all oil from the slab and the brayer and knife. Dry thoroughly.

Stack finished prints with newsprint between them to dry.

Put away supplies.

## TIPS & TRICKS:

- For medium to light tones, use a very light hand. The lighter the hand, the lighter the tone.
- Be careful not to buff the gum too thinly over the image area, or you will end up with haze scum around your image -- watch the demo very carefully!
- Tusche is more fragile on the foil; you will need to practice your buffing so you do not wipe it away at this step or see Option A below for an alternative processing.
- For scum in your borders/non-image areas, gently remove the scum with lemon juice on a Qtip, re-gum the image for a minute and then rinse off the excess gum and resume inking. If the scum comes back a lot, remove again with lemon juice, rinse off with water, dry the image, dust with flour, gum and buff with cheesecloth, let dry for at least 15 minutes. Repeat Printing steps 1 – 6.
- The thinner the paper, the better the detail of the tone and texture and the easier it is to burnish by hand.
- Use a piece of wax paper or newsprint on the back of your good paper when burnishing to protect the paper.
- Heavyweight or Lightweight Rives paper works best for graphic images.
- The aluminum foil, if processed properly, should allow you to pull quite a few prints without breaking down. NOTE: we have pulled at least 10 with no loss of image.
- If the ink is too thin or sticky or loose, add a bit of flour (or magnesium carbonate) to stiffen the ink, or place some ink in a foil packet to keep in the fridge overnight prior to use.

### Troubleshooting:

- Not always necessary, but if there is scum when initially rolling up, repeat the first etching process like a second etch on a traditional stone/plate - it should eliminate the scum from non- image areas on the second run.
- If there is scum, lemon juice on a cotton pad or Q-tip should remove it, then re-gum.
- For haze scum, remove scum with lemon juice on a cotton pad or Q-tip and repeat the etching process, making sure not to thin down the gum layer over the image too much when buffing.

### Other areas to research:

- Gum transfer paper – Hand-made gum transfer papers will work. The processing needs to be developed a bit more to minimize scum and to work out the necessary steps. But it does work.
- Carbon copy paper does not transfer onto aluminum foil
- Xerox transfers work! Place the xerox face down onto the foil. Use a cotton ball and nail polish remover to barely dampen the back of the xerox, and burnish evenly. Peel off the xerox carefully! Use water to remove any paper residue. Proceed to process with lemon juice and gum. NOTE: Toner will not dissolve with vegetable oil. When ready to print, rinse away the buffed gum and proceed to ink up on top of the toner.

## SUPPLIERS:

**Takach Press Corp.** ([www.takachpress.com](http://www.takachpress.com))

*Inks, litho drawing materials, brayers, Ink knives, sponges, liquid gum*

**Renaissance Graphic Arts** ([www.renaissancegraphics.com](http://www.renaissancegraphics.com))

*Inks, papers, litho drawing materials, brayers, Ink knives, sponges, liquid gum*

**Dick Blick Art Materials** ([www.dickblick.com](http://www.dickblick.com))

*Inks, papers, litho drawing materials, brayers, conté crayons, Ink knives, sponges, liquid gum*

**Talas Supplies** ([www.talasonline.com](http://www.talasonline.com))

*Paper, bookbinding supplies, glues*

**Hiromi Papers** ([www.hiromipaper.com](http://www.hiromipaper.com))

**Paper Connection** ([www.paperconnection.com](http://www.paperconnection.com))

**Earth Pigments** ([www.earthpigments.com](http://www.earthpigments.com))

*Gum Arabic (small quantities)*

**Amazon** ([www.amazon.com](http://www.amazon.com))

*Gum Arabic, misc. supplies*

Local Hardware stores -- *sand paper, shelf liners, ink knives, plexi, gloves, shop towels*

Grocery Stores --- *foil, bowls, flour, lemon juice, cheesecloth (baking section)*

Local Art Stores -- *these will have a variety of papers, and other supplies that will work*

## BIBLIOGRAPHY AND RESOURCES:

We used many YouTube videos as starting points, but specifically these:

<https://www.youtube.com/watch?v=UuBUlEt6vWw>

<https://www.youtube.com/watch?v=G2w0IFm7JOY>

<https://www.youtube.com/watch?v=tXaimUkCVU0>  
*vinegar etch*

<https://www.youtube.com/watch?v=cemxQ-rHOAg>  
*using pancake syrup and tapioca flour*

<https://www.youtube.com/watch?v=lyRmvt7jgpU>  
*with registration for layers*

<https://www.nontoxicprint.com/kitchenlitho.htm>  
*instructions written by Emilie Aizier (creator)*

<https://www.green-coursehub.com/research-blog/kitchen-lithography-2017>  
*thorough instructions with images*

<https://www.barbarahudin.com/kitchen-litho/>

Additionally:

Mark Attwood, The Artists' Press, White River, South Africa. [www.artprintsa.com](http://www.artprintsa.com)

Reed, Robert F. "What the Lithographer Should Know About Ink". New York, NY: Lithographic Technical Foundation, Inc. 1960.

Hartsuch, Paul J. "Chemistry of Lithography". Pittsburgh, PA: Graphic Arts Technical Foundation, Inc., 1961.

Antreasian, Garo and Clinton Adams. "The Tamarind Book of Lithography: Art & Techniques". New York, NY: Harry N. Abrams, Inc.

Devon, Marjorie with Bill Lagattuta and Rodney Hamon. Tamarind Techniques for Fine Art Lithography. Tamarind Institute, College of Fine Arts, University of New Mexico; New York, NY: Harry N. Abrams, Inc. 2008.