

AMBROTYPES:

These are a variation on tintypes, using glass plate backed with black cloth instead of a black metal plate. Coat the glass with Ag-Plus emulsion, let it dry, and expose it in a camera like a tintype plate. After processing, the glass plate is backed with a piece of black cloth to create contrast, and mounted so that the image is viewed through the glass.

TROUBLESHOOTING:

1. The correct exposure is a balance of light and dark areas. If the tintype plate is nearly all black, the remedy is to increase the exposure. If it is too light with no black areas to provide contrast, the exposure should be decreased.

2. To check that the developer and plates are performing correctly, thinly coat two postage stamp-size areas. Expose one area to room light a few seconds and the other just to safelight. Develop simultaneously for at least 1 minute. The unexposed area should be black and the exposed area yellow-brown. (Reclaim the plates for re-use by rinsing with warm water.)

3. The general rule to follow for best results is to coat thinly and develop fully— at least 2 minutes.

4. Protect the surface if it will be displayed outdoors. For best protection, coat the well-dried print thinly with a water-based polyurethane finish. Any other type of lacquer or solvent-based coating can be used, for example Krylon Crystal Clear. For display indoors, no protective coating is needed but can be used for handling.

* AG-Plus emulsion is used for normal negative-to-positive prints as well as tintypes. In normal use, the emulsion is coated on a light-colored material, exposed and developed in a standard paper developer like Dektol. For tintypes, the same emulsion is used with a specially formulated tintype developer. Coated on black material and developed in tintype developer, it gives a positive-to-positive print through the illusion of reversal.

TINTYPE DEVELOPER & BULK KIT INSTRUCTIONS**HISTORY OF TINTYPES:**

Tintypes, also known as ferrotypes, are the 19th century's "instant" photographs. Historically, "wet-plate" tintypes, containing silver halide in a collodion suspension, came first. They were made obsolete by "dry-plate" tintypes that used gelatin instead of flammable collodion. Dry-plate tintypes were coated on steel that was painted black and sometimes on black paper or cardboard. (The "tin" in tintypes comes from the similarity of the metal plates to the steel used in "tin" cans.) The Tintype Parlor produces authentic dry-plate tintypes.

Tintypes are an optical illusion that is based on the same principle as when you view an underexposed or thin black-and-white negative by reflected light while it is held against a dark background: The negative image seems to become positive. With tintypes, the exposed silver image is actually lighter in color than the unexposed areas of the black background, giving the appearance of a normal positive print.

Because tintypes eliminate the negative used in conventional prints, they are "first generation" prints that produce an image of extreme sharpness and resolution. Another characteristic of tintypes is that subjects are optically reversed so that left becomes right and vice-versa. Colors reproduce differently from modern black-and-white emulsions: reds appear to be black and blues to be white. The highlights of tintypes are not pure white as in conventional prints, but light yellow-brown: these effects are all part of the distinctive appearance and appeal of dry-plate tintypes.

Now it's time to try your hand at tintyping. An old box or view camera with a bulb or time exposure setting is excellent. A tripod is necessary. If you have an exposure meter, place a blue acetate film over the photocell to measure only the blue content of the ambient light, the only color that tintypes are sensitive to. Dress your models in old clothes from the attic, and enjoy operating your own tintype parlor!

YOU NEED:

1. A location away from white light—either a darkroom or other space that excludes daylight and artificial light. Use an amber or red safelight. A standard 7-watt mini red bulb can be used close-up, or a 25-watt red or amber bulb, if it is not allowed to shine directly on the emulsion.

2. Two small shallow trays made of glass, plastic or stainless steel, for the tintype developer and fixer.

3. A pair of scissors or a paper cutter to cut the tintype plates to fit inside your camera. (For a good fit in many 4x5 film holders, cut 1/4" off the plate with an office paper cutter to reduce the size to 3 3/4"x4 3/4". Smooth the cut edges by light sanding.)

PREPARING THE THREE-PART TINTYPE CHEMISTRY:

To make one gallon of tintype developer: In the following order dissolve Part 1 in 3000ml's (3 quarts) of lukewarm water (remove the desiccant packet before pouring). Use water that has been distilled or deionized, then add Part 2. Stir until dissolved. Cool to room temperature. Add the Part 3 bottle followed by water at room temperature to make one gallon (3800ml's) of working solution. A small amount of ammonia vapor will be given off; this is normal. Allow to "ripen" a few hours in a tray, or overnight in a stoppered container, before first use.

To make one gallon of fixer: Dissolve the fixer in 3000ml's (3 quarts) of lukewarm tap water. Add more water to make one gallon (3800ml's) of working solution.

COATING:

The light-sensitive photographic emulsion (AG-Plus) is a solid gel at room temperature. Under safelight plunge the bottle into a container of hot water until the contents become liquid. Heat at least 10 minutes in complete darkness. Do not shake the bottle as that could cause bubbles to form. If needed wipe the plates with alcohol to remove fingerprints then pour some emulsion onto a black plate, spread the emulsion quickly using a nail or sponge brush while tilting the plate, then pour the surplus off for re-use. Coat evenly. Preheating the plate helps it set up smoothly. Lay the coated plate on a level surface until the emulsion sets up or becomes sticky. It can then be stood on end and drying speeded with an electric fan or dehumidifier. (Dry in circulating room air, not in a closed box, overnight or longer.) Plates should appear from medium to dark gray when dry. Store dried plates in total darkness until needed. Wax paper can be used between dried plates to prevent sticking.

EXPOSING TINTYPES:

Since tintypes are sensitive only to blue light, place a blue transparency over the exposure meter to eliminate other colors. Check to be sure the sensitized plate is sitting firmly on the film plane of the camera.

Suggested trial exposures are as follows:

Bright sun on subject:	f/16@½ second
Cloudy-bright:	f/8 @½ second
Open shade:	f/5.6@½ second

OTHER METHODS OF MAKING TINTYPES:

1. Indoors: If it is impractical to take tintypes outside, it is possible to take them indoors provided there is a rich source of blue light, such as photofloods, daylight fluorescents, carbon arcs or a high-wattage quartz halogen bulb (on our website). Use plenty of light, taking all safety precautions necessary with high-intensity lighting. You can allow the subject to blink during the long exposure; it will not be evident on the print. Do not use a strobe or flash as a light source, as the output is too brief to be of use.

2. With an enlarger, you can project a positive color transparency or black-and-white transparency onto the sensitized tintype plate. A trial exposure of 20 seconds at full aperture can be given for a black-and-white transparency, and twice that for a color transparency.

3. Contact miniatures can be made by laying a 35mm color positive transparency or other film positive on the tintype plate and using a 40-watt bulb at least 4 feet away as a point light source. Expose for 1 second.

4. Contact tintypes from old prints: Lay the paper print emulsion side down, onto a tintype plate and lock it into a printing frame, or a piece of glass to hold the emulsion of the print tightly in contact with the tintype plate. Use a point light source as described in #3.

PROCESSING:

1. In the darkroom, develop the tintype face up at 68° to 71°F (20°C) for at least 3 minutes with frequent agitation. First the plate will turn black and then a picture will slowly emerge. This may take even longer than 3 minutes, but it's no problem as long as the developer is agitated. If development time is too brief, areas of the print may have a bluish cast.

2. Without rinsing, place the plate in fixer for 10-15 minutes until any chalky white areas disappear. The fixer will also harden the emulsion, so that it becomes tough and leathery to the touch.

3. Rinse the tintypes for 10-15 minutes or more in lukewarm running water. To reclaim a plate, run warm water over it and scrub with a wet, not stiff, bristle brush until all residual emulsion is eliminated. The plate can be dried and re-used.