

GRAFMETAL

grafmetal.com
grafmetal@grafmetal.com

User manual of GRAFMETAL Glass Etching Paste (1.1 version)

Scope

Glass Etching Paste makes it possible to obtain matte patterns on majority of types of glass. To carry out the process, a mask must first be created, for example, by laser engraving a tape glued to the glass or by cutting a film with a plotter and later gluing it to the glass surface. The paste applied to the exposed parts of the glass makes it matte. This will be more distinct for laser-treated details, but it will also be visible for others.

Paste is suitable for most types of glass, but does not always produce the same effect. Paste gives less visible etching in the case of, among others, borosilicate glass used in the manufacture of heat-resistant dishes and laboratory glassware. If the effect is not satisfactory at the time, follow the advice in the following section.

How to use

1. Read the instructions and warnings. Prepare your workstation: provide ventilation to avoid inhaling fumes and provide hand and eye protection. Paste and its fumes etch glass and metals, so remove any objects that could be damaged.
2. Apply a mask of cut adhesive film to a glass or glazed object. The film sticker can be wiped with a cloth saturated with petroleum ether, if necessary, so that the etching paste does not get underneath it. Alternatively, one can apply fabric-reinforced adhesive tape to the object or use spray paint and engrave the design in it with a laser. Paste fumes can tarnish the glass right next to where it was applied, so the mask should have adequate margins.
3. Apply the paste to the parts to be etched by using a plastic or wooden spatula. Rub them lightly so that you are sure the entire pattern is wetted with the paste. Make sure that there are no uncovered areas. You can check this by placing and looking at the pattern against the light if possible.
4. After 1-24 hours the paste should be rinsed with water and then the object should be wiped dry with a tissue. The mask is then removed obtaining the finished pattern. If white tarnish can be found in engraved spots, then it is necessary to rinse it with water and scrub it with a brush or a sponge. For some glass types it may be necessary to significantly extend the etching time, to heat the object or to carry out the process repeatedly. The effect of etching depends on the type and composition of glass, so the etching procedure should be refined experimentally.

Waste treatment: Small amounts of paste can be flushed with water – calcium present there will bind hazardous substances. Dispose of larger amounts with chalk. Do not introduce into water reservoirs.

Tips for laser mask making

If the mask was not made by cutting with a plotter or by hand of adhesive film (such as vinyl), then it can also be made by laser. The following procedure is then recommended. A fabric-reinforced tape (so-called duct tape), should be applied to the glass object. The tape should be applied to the glass in such a way that no air bubbles remain under it. For large areas, the glass can first be sprayed with glass panes cleaner or one can apply water and dishwashing liquid to it, and then one should apply the tape or adhesive film. Later, one should remove air bubbles and an excess of fluid by using a spatula or a squeegee. If liquid has been applied under the tape or film, then wait until the glass dries and the applied tape or film is well bonded to the substrate. The film or tape should then be laser engraved in such a way as to expose the glass underneath. The design thus prepared can be treated with Glass Etching Paste.

Another easy method of making laser glass etching masks is to stick thin double-sided tape to the film or fabric on one side. Then the template is cut out using a laser. After cutting, the protective film is removed from the other side of the adhesive tape and the stencil is glued to the glass object. Glass Etching Paste can then be applied and surface matting can begin in the exposed areas.

Note: Paste fumes also have etching properties, so the mask should cover the glass object not only right next to the etching pattern, but also further away.

Tips for applying a mask to a glass object

The mask cut from the film regardless of the method used to make it, i.e. by hand, with a cutting plotter or with a laser, should be applied to the glass object in such a way that there are no air bubbles near the cut part. If this happens, the etching paste can get into the bubbles, which will distort the etched pattern. Thorough adhesion of the film can be achieved by wetting the glass with water and dishwashing liquid and then applying the mask. The mask is set in place and air bubbles are removed, and then the object is put aside in a warm place to evaporate the water. Once the surface of the glass is dry and the mask is well attached, then you can proceed to apply the etching paste.

Achieving more matte patterns

If the resulting pattern is not matte enough or not visible enough, the glass should first be warmed, for example, using a hair dryer or by placing it in a warm place. The paste should then be applied to the warm glass. Watch out for fumes and possible dripping of the warm paste. The process can be further accelerated by placing the glass with the paste applied in a warm place.

Another method of obtaining more visible patterns is to significantly increase the etching time.

The processing parameters depend on the type and composition of the glass, so they should be adapted` experimentally.

Preprocessing of difficult glasses

Some glasses, including borosilicate glasses, are quite difficult to process. A visible etching effect can then be achieved by the following methods:

- significantly extending the etching time
- applying the paste to warm glass; this can be done by heating the glass, e.g. with a hair dryer, or by placing it in a warm place and then applying the paste to the warm glass
- applying the paste to the glass and placing the etched object in a warm place

- multiple cycles of applying the paste, etching and rinsing it off.

Cleaning

After processing, rinse the paste with water. If the assumed effect is satisfactory, the mask can be removed. After that, it is recommended to clean the etched pattern with a sponge or dishcloth with water to remove poorly bonded etching products.

Safety remarks

Glass Etching Paste is a hazardous preparation with corrosive and toxic effects. Eye and skin protection through gloves and safety glasses is required. Ensure good ventilation and do not inhale paste fumes, which are corrosive and harmful to health. Take special care when using paste on heated surfaces.

The paste may lead to corrosion of metal or glass objects in direct vicinity, so use it away from objects that could be damaged.

Safety

Hazard statements: H301 Toxic if swallowed, H305 May be harmful if swallowed and enters airways, H314 Causes severe skin burns and eye damage.

Precautionary statements: P280 Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P305+P351+P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Contains: ammonium bifluoride, sulfuric acid



THE PRODUCT IS INTENDED FOR PROFESSIONAL USE ONLY. THE PRODUCER IS NOT RESPONSIBLE FOR ANY INCORRECT USE THEREOF.

Producer: KARWYS Piołunowa 43 81-589 Gdynia Poland, European Union Tax ID number: PL9581590886	Contact information: grafmetal@grafmetal.com +48 575 737 991
---	--