

DOUGLAS & STURGESS

Ingredients for Art

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PROTOPLAST INSTRUCTIONS

ABOUT THE MATERIAL

Protoplast is available in precut sheets approximately 18" by 24", and comes in four different thicknesses, (1/16", 3/32", 1/8" and 3/16") both with and without perforations. Consisting solely of thermoplastic polyester Protoplast can be easily formed with the application of mild heat.. This unique material is best softened in water heated to 160° F (71° C) prior to application. When use of water is impractical due to size of the working area, an industrial heat gun may be used to soften the material. Protoplast softens in 30 seconds and provides 2-4 minutes in working time.

PREPARATION: Immerse the material. Insert Protoplast material into 160° F (71° C) water. Keep the material under water until the sheet, which is naturally an ivory color, becomes transparent. Protoplast will soften in 30 seconds. Protoplast should not be kept in the water longer than 30 minutes as this may cause the material to degrade. Protoplast can be heated many times before it will lose its properties.

APPLICATION: It is important to minimize stretching of the material during application as this will create thin areas in the finished piece.

MOLD: Once the material has been removed from the water, you have approximately 3 minutes of working time before it is set to the point where it cannot be molded. During that time, the material should be drawn firmly over your form and held in place until it sets. Mold as you use each piece. Work steadily rather than rapidly. If Protoplast cools too fast, or if you wish to remold a specific area, apply heat to the area with a 1000-watt portable hair dryer or an industrial heat gun until the material is pliable. Do not overheat!

SETTING: Setting time for protoplast depends upon the ambient temperature and the temperature of the material that the Protoplast is being molded from as well as the uniformity of heat exposure. Once the form has been realized, it is possible to accelerate the cooling process by pouring cold water over the surface of the Protoplast. Rigidity will be achieved after 10 minutes. Maximum strength is attained in 30 minutes.

POST-APPLICATION Remolding To remold any section of the Protoplast material, soften the area by carefully applying heat with a 1000-watt portable hair dryer or an industrial heat gun. As soon as the material has softened, it is ready for remolding.

REPAIR Soften the area to be repaired as described for remolding, then apply a new piece of heated Protoplast to the softened area and rub gently around the edged to maximize bonding. Commercial hot glues may also be used to repair Protoplast and may be used to smooth rough spots. It is possible to bond small pieces of scrap Protoplast together while heated to form larger pieces of useful material. In essence there is very little unusable material when using Protoplast.

RE-USE Protoplast may be re-used at least 2-3 times without compromising the thermoplastic characteristics. If Protoplast has been heated but not used, it can be cooled while flat and used again.

COMBINED WITH OTHER MATERIALS If desired. Protoplast will accept a variety of coatings and paints. Small pieces should be used for experimentation to insure that the projects desired outcome is achieved. It is possible to incorporate other types of thermoplastics such as Varaform and Altraform with Protoplast to achieve varying effects. It is always best to test using small pieces before starting a large project.

PRECAUTIONS Exposure of finished Protoplast parts to high temperatures should be avoided, since heat in excess of 125° F may soften the material and cause deformation even after a shape has been finished. Avoid car trunks, and enclosed vehicles where inside temperature could exceed 125F. Protoplast may be cleaned by using a dampened paper towel or sponge and most household cleaning fluids such as Formula 409 or Windex.