

cyclododecane a wax-like



volatile cyclic alkane, has been used successfully to temporarily stabilize our most friable ceramics. Unlike most waxes, cyclododecane cools quickly leaving little working time. Quickly transferring it where it's needed can be a challenge. You may find that the application tools shown here could be just what you need, whether the area to stabilize is very small or large.

tools for application

Pictured is a sample of NMAI-tested tools for the application of cyclododecane.

- **DISPOSABLE GLASS PIPET** our most frequently used tool, available from most scientific supply companies, can be placed directly on the hotplate to clear blockage. We also use this tool to fill the tjanting and batik ball.
- **METAL DROPPER** although the metal works well to retain the heat, the dropper is a little too small to work with comfortably.
- **THREE-PIECE TURKEY BASTER** the metal tip keeps the cyclododecane from just pouring out. The large size allows you to draw up enough wax to easily cover a large area.
- **THERMAL SYRINGE JACKET** this tool is used with an Englebrecht WZII control unit. The heated jacket keeps the wax molten at about 58° C, however we have found it difficult to refill the syringe.
- **BATIK BALL** is also used with the Englebrecht WZII control unit, it is easy to fill with the glass pipet, and flow is controlled by the angle. Allows for pinpoint control, and we find that it holds enough wax to be able to work efficiently.
- **ELECTRIC TJANTING** this tool comes with its own regulator. Flow is controlled by lifting the pin in the resevoir. Unfortunately it doesn't hold much and must be frequently refilled. Blockage can be cleared with a pin or other thin sharp object, just be careful not to damage the hole which could prevent the pin from properly stopping the flow.



bulking up

You can make your tins of cyclododecane go further and fill more empty space by introducing fill material that is then covered with the melted wax. In this example, pictured left, the gap has been filled in with cellulose pulp. We recently prepared a very large archaeological ceramic vessel with numerous gaping joins for packing by filling the space with rolls of Japanese tissue paper, set in place with the cyclododecane. When the wax has sublimated the fill material is simply removed using your fingers or tweezers. **SEE THE GUIDE FOR SOURCES.**

● the guide WHERE TO FIND IT

As seen in NMAI Moving episode entitled **THE APPLICATION OF CYCLODODECANE AND EASY SUPPORTS: Good Tips 1 & 2.**

cyclododecane

- **CYCLODODECANE** CYCLIC HYDROCARBON SOLID $C_{12}H_{24}$
500g for \$25, 1 kg for \$45 from **Kremer Pigment**, 228 Elizabeth Street, New York, NY 10012; tel: 800-995-5501, 212-219-2394, fax 212-219-2395, www.kremer-pigmente.de
- DISPOSABLE BOROSILICATE **GLASS PASTEUR PIPETS** (5 3/4")
250 for \$17.88 from **Fisher Scientific**, tel: 1-800-766-7000, www.fishersci.com
- METAL BATIK **DROPPER PEN**
\$2.99 each from **Dharma Trading Company**; tel: 800-542-5227, www.dharmatrading.com
- STAINLESS STEEL **BASTER SET** WITH INJECTOR NEEDLE
\$7.99 each from **Bed Bath and Beyond**, www.bedbathandbeyond.com
- ELECTRIC **TJANTING TOOL** AND REGULATOR, Product No: ETJ,
\$59.95 from **Dharma Trading Company**; tel: 800-542-5227, www.dharmatrading.com
- **SYRINGE THERMAL JACKET** FOR USE WITH THE ENGELBRECHT WZII Unit and heat spatula arm. In 5ml size for \$250, 10ml for \$276 and 15ml for \$303. Uses .4 x 25 mm needle. Unit heats contents of

syringe to 58°C ± 5°. Available from **Kolner L.L.C.**, 23 Grant Avenue, New Providence, N.J. 07974; tel: 718-802-1659

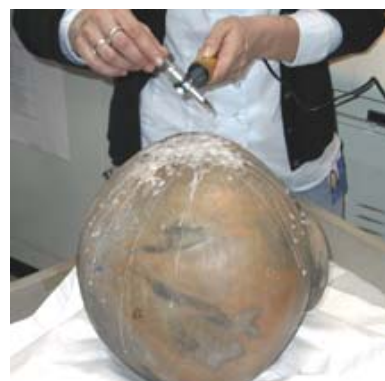
- **BATIK BALL** For use with the Engelbrecht WZII Unit and heat spatula arm. \$40 each from **Kolner L.L.C.**, 23 Grant Avenue, New Providence, N.J. 07974; tel: 718-802-1659

- **ENGELBRECHT WZII** CONTROL UNIT AND HEAT SPATULA ARM. \$310 for unit, \$44 for heat spatula arm. Available from **Kolner L.L.C.**, 23 Grant Avenue, New Providence, N.J. 07974; tel: 718-802-1659

- CELLULOSE SS122 **FILTER PULP**, 500cc for \$10.23, Manufactured by **Schleicher and Schnell Microscience, Inc.** Available from **Fisher Scientific**, Catalog no. 9940820 www.fishersci.com

- FIBROUS **CELLULOSE POWDER** CF11, , Catalog no. 05-713-004. 500g for \$65.60. Manufactured by **Whatman**. Available from **Fisher Scientific**, tel: 1-800-766-7000, www.fishersci.com

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