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Chemistry beyond the ordinary

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Batson's No. 17 Plastic Replica and Corrosion Kit

Catalog #07349

NOTE:

It is recommended that the Kit be used under a fume hood with appropriate gloves. For additional details, see **Warnings** and **Precautions**.

Background:

This procedure is used to produce scientifically exact, multi-colored specimens for anatomical study, comparative demonstrations and for quantitative scanning electron microscopy studies. It is based on a procedure originated by Professor Oscar Batson of the Department of Anatomy at the University of Pennsylvania. The kit consists of partially polymerized monomer, a catalyst, and a promoter to allow curing at room temperature after injection, with red and blue pigments are supplied for contrast. Various other colored pigments are available.

The kit has been used with excellent results to produce specimens of hearts, lungs and other vascularized organs. Venous and arterial systems can be clearly delineated by use of the red and blue pigments provided. Highly precise models of the sinus cavities, nose, throat, gastrointestinal tract, trachebronchial tree or any organ with a cavity or opening into which liquid plastic can be injected can be visualized can be reproduced.

Plastic models are extremely tough and durable with the ability to be handled without fear of damage. Vinyl casts can shrivel and alloy castings can be distorted during castings. Wax models are not permanent and can melt.

SEM has been used in recent studies with this kit for ocular vasoproliferation, arterial proliferation, peribilliary portal system in the rat, as well as temporal branches of the middle cerebral artery, rabbit eye, aortic endothelium and dermal microcirculation.

Procedure for Injection and Curing:

Store Monomer Base Solution under refrigeration conditions (approx. 4°C) until use. Allow Monomer Base Solution to warm to room temperature before use. Store all other solutions at room temperature in the original containers, tightly capped. Protect the containers from light and heat. Promoter and catalyst should be kept in the refrigerator at 4°C after opening. These should be at room temperature before use in the monomer.

Avoid contact with skin and eyes. Wear protective gloves and goggles during all exposure to the solutions. Use only under a hood and with adequate ventilation.

Prepare all anatomical specimens prior to mixing the ingredients. Polymerization will begin very quickly after the mixture is completed. The setting time of the mixture can be varied by adding more or less of the promoter and/or catalyst. The formulation presented here has been very successful for most procedures.

The optimum technique is to divide the Base Solution A into two parts. This allows more control of the polymerization steps.

The pigment is added to Base Solution A prior to mixing the catalyst and promoter. The pigment is added in the amount of 2% to 10% depending on the depth of color required. Stir vigorously with a spatula until mixed and divide in two equal parts.

Base Solution A	100ml X 2
Catalyst	24ml to 40ml *(Less will result in slower polymerization.)*
Promoter C	24 drops *(Less will result in slower polymerization.)*

Carefully add 24 to 40 ml of the Catalyst to 100 ml of Base Solution A. Set aside until the second half is mixed.

Carefully add 24 drops of Promoter C to the second half of the Base Solution A and mix slowly on a magnetic stirrer. Add the two solutions together and stir to mix. Working time to begin and complete injecting the specimen is generally 30 to 45 minutes. Injections can be made with a heavy-duty veterinary or disposable polyethylene syringe and large needle.

The injected specimen should be fully cured in 2 to 3 hours. It is preferable to keep the specimen in cold water or ice bath during the curing process to aid in the dissipation of the exothermic reaction caused by polymerization. Controlling the temperature will prevent expansion and distortion of the specimen.

First Aid:

In case of contact, immediately flush eyes with water for at least 15 minutes. Flush skin or exposed areas with water for 15 minutes. If swallowed, dilute by drinking water to excess. Call a physician immediately. Never give anything by mouth to someone who is unconscious.

Disposal:

The catalyst may be destroyed by adding it in small portions to cold 10% sodium hydroxide solution. Use four times the volume/weight of liquid to the catalyst. Do not allow the material to settle or form clumps. Dispose of this solution and all Resins and solutions along with hazardous wastes in accordance with local, state and/or federal regulations.

Warning:

May be harmful if swallowed. Use under a hood with appropriate gloves. Components may cause irritation and or allergic skin reaction. Avoid contact with eyes, skin and clothing. Avoid inhalation of the vapors. Wash hands or exposed areas thoroughly after handling the solutions. Mixing Batson's #17 Anatomical Corrosion Kit with radiopaque materials should be handled carefully. Avoid mixing Batson's #17 Anatomical Corrosion Kit with Tantalum.

Precautions:

Do not heat over an open flame. Avoid electrical or static sparks. Store un-catalyzed resin in the original containers at room temperature in a dark cool area.

Maceration Process:

Maceration Solution, Catalog #07359, must be purchased separately to remove excess tissue from the finished specimen. After fully curing the specimen is placed in the Maceration Solution at 50° C to corrode. The amount of solution should be at least 2 to 3 times the volume of the mass to be macerated. The specimen should be removed every 2 to 3 hours and rinsed in water to remove the excess material and allow the fluid to penetrate additional tissue. Soft tissue should be removed in 12 to 24 hours. Fibrous tissues may require several days in the solution. If the solution becomes very cloudy with debris floating, it may be necessary to change the solution.

The cleaned specimens can be subsequently embedded in clear methyl methacrylate resin to further protect any delicate structures. The Methyl Methacrylate Embedding and Casting Kit is Catalog #03573.

Ordering Information:

Cat.#	Description		Size
07349	Batson's No. 17 Corrosion Kit (1quart)		1 Kit
	kit contains: 940ml	Monomer Base Solution	
	100ml x 2	Catalyst	
	50ml	Promoter	
	10gm	Red Pigment	
	10gm	Blue Pigment	

Additional Products:

02599	Monomer Base Solution (Methyl Methacrylate)	940ml
02608	Catalyst	100 ml
02610	Promoter	50ml
07359	Maceration Solution	940ml
07350	Red Pigment	100gm
07352	Blue Pigment	100gm
07351	White Pigment	100gm
07353	Green Pigment	100gm
07354	Yellow Pigment	100gm
03573	Methyl Methacrylate - Butyl Methacrylate Embedding Kit	1 kit

To Order:

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