

SPI-Chem SPI-Pon™ 812 Kit



Use Instructions

SPI-CHEM™ / SPI-PON™ 812 KIT INSTRUCTIONS FOR USE

CAUTION:

Thoroughly read all instructions and warnings on container labels prior to use of this kit.

SPI-PON 812 resin can be used in various embedding applications in both biological and material sciences. A cured resin block of required hardness, to match the embedded material, can be made by varying the proportions of DDSA (softener) and NMA (hardener). It is well known that hard specimens in a soft resin block will tear away from the block, whereas soft specimen materials will section unevenly if embedded in a hard resin formulation. In addition to the wide range of hardness that is attainable, other advantages include improved penetration (in biological tissue), contrast, and ease of obtaining stable thin sections.

Formulations

One or more of the following formulations can be used for most applications:

RESIN COMPONENT	TYPICAL MEDIUM HARDNESS FORMULATION	TYPICAL HARD FORMULATION
SPI-PON 812	16.2 ml	9.8 ml
DDSA	10.0 ml	3.3 ml
NMA	8.9 ml	6.9 ml
DMP-30	0.5 ml to 0.7 ml	0.3 ml to 0.4 ml

Likewise, the following combined SPI-PON-Araldite formulation of Mollenhauer provides hard blocks, good contrast and ease of sectioning.

RESIN COMPONENT MOLLENHAUER'S SPI-PON-ARALDITE FORMULATION

SPI-PON 812	10.0 ml
ARALDITE 6005	10.0 ml
DDSA	24.0 ml
DMP-30	0.7 ml to 0.9 ml

¹DMP-30 (accelerator) is added to either of the above formulations, with thorough mixing, just prior to use. Additions of DMP-30 are at a 1.5 to 2.0% level (by vol.). Increasing the amount of DMP-30 will increase "the cure rate.

MIXING OF RESIN COMPONENTS

The preparation and mixing of the resin components must be thorough and should always be performed in a fume hood and/or a covered vessel and for a period of at least 5-10 minutes. After the DMP-30 has been accurately measured and completely mixed into the selected resin, the complete formulation can be used to impregnate and/or embed the sample material.

Avoid contact of the mixture with moisture. The mixture, without DMP-30 is stable for 6 months at 4°C, or for several days at room temperature. When refrigerated, the mixture, in its closed container must be allowed to equilibrate to room temperature before use, to prevent condensation of moisture.

SAMPLE PREPARATION

Sample for resin infiltration and embedding should be dry. Biological samples, fixed and dehydrated through absolute alcohol are further dehydrated in two 15 minute changes of propylene oxide. Infiltration is accomplished using the complete formulation and propylene oxide (1:1), while gently agitating for at least 1 hour. Infiltration of the specimen is continued in at least one change of the complete formulation for 1 hour.

Final embedding of the sample is accomplished by placing the specimen in aliquot of the complete formulation, located in appropriate flat or capsular embedding molds.

Hardening or polymerization of the above resins can be accomplished following curing in an oven at 60°C for 24-48 hours, after which time the blocks are allowed to

cool to room temperature for subsequent ultramicrotomy.

REFERENCES

1. Luft, J.H.J. *Biolphs. Biochem, Cytol.* **9**, 409 (1961)
2. Mollenhauer, H.H., *Stain Technology* **39** 11 (1964)

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