

INSTRUCTIONS FOR USE - ENGLISH

MOUNTING

HOT MOUNTING RESINS

LAM PLAN range of hot resins covering all metallographic mounting needs

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1. LAM PLAN range of hot resins

ORGANIC 701 granules

Resin composed of polyester and a wood-based filler. It comes in granules and does not release dust. ORGANIC 701 resin is made from sustainable stock from responsible sources, has an optimal hardness of 85 Shore D and low shrinkage. It is an excellent alternative to conventional phenolic or epoxy resins.

PHENOFREE powder

(colors: gray, white, red) for standard mountings, low shrinkage, phenol-free.

GREEN 602, RED 622, and BLACK 642 PHENOLIC powders

for standard mounting, low shrinkage.

BLACK 632 PHENOLIC powder

Filled with glass fibers, good abrasion resistance, very low shrinkage, recommended for hard and medium-hard materials.

BLACK EPOXY powders 633 and 634

Glass fiber-filled, very good abrasion resistance, no shrinkage, recommended for hard and medium-hard materials.

TRANSPARENT ACRYLIC powders 616 and 616.2

Allow for very good visualization of samples, very low shrinkage.

RESINOID COPPER powder 604.4

High-purity copper that guarantees excellent conductivity for scanning electron microscope (SEM) examinations and electrolytic polishing.

BLACK PHENOLIC powder 617

Graphite-filled, excellent conductivity for scanning electron microscope (SEM) examinations.

2. Recommendations for use

Sample preparation

When performing metallographic hot mounting with a hot mounting machine, it is essential to take several precautions to ensure the safety and quality of the sample. First, make sure the sample is completely dry and clean before placing it in the mold to avoid any unwanted reactions with the resin. Next, choose the right type of thermosetting resin based on the nature of the material and the intended observations.

IMPORTANT: Before any mounting procedure, thoroughly degrease the samples so that the resin adheres to the contours of the part.

Ensure that there are no burrs from cutting. If necessary, deburr the corners of the sample with sandpaper.

Basic rules

The size of the part must be adapted to the diameter of the mold: ideally, it should not occupy more than two-thirds of the diameter of the mounting in order to ensure proper centering and sufficient resin thickness around the sample to protect it during the polishing stages.

In order to achieve perfect resin fusion, the volume of the part must be at least one-third of the volume of the mold.

Sticking problem

To prevent sticking in the mounting chamber, especially with PHENOFREE, 633, and 634 resins, it is recommended to use LAM PLAN's SOLILUB powder release agent.

Cleaning

Once the mounting is complete, wait until the block has cooled completely before handling it. Finally, clean the machine thoroughly and check that it is in good working order before using it again to ensure its longevity and the reproducibility of results.

3. Safety

It is important to read and follow the safety instructions in the resin safety data sheet before handling it.

To ensure proper curing of the resins and avoid defects such as cracks, bubbles, or inclusions, follow the application parameters recommended in section "6. Implementation" of these instructions

4. Storage

Store the resins in their original packaging, protected from moisture and at room temperature.

Keep the packaging closed after using the resins.

SOLILUB

Powdered release agent for hot mounting processes. Recommended for PHE-NOFREE and epoxy 633 and 634 resins.

50 g pot - CODE 06 00683 00







5. Application of LAM PLAN hot mounting resins

Material	Resin	in Characteristics		Color	Hardness Shore D	Polymerisation time*		
Organic	701	Organic origin	Low	Orange	85	3,5 to 10,5 min		
Composite	PHENOFREE 1 PHENOFREE 2 PHENOFREE 3	Phenol free, formaldehyde free	Low	Grey Red White	90	10 to 15 min		
Ероху	633	Extra hard	Very low	Black	91	5 to 10 min		
Ероху	634	Extra hard (fine grain)	Very low	Black	92	5 to 10 min		
Acrylique	616	Excellent transparency	Low	Transparent	93	5 to 10 min		
Acrylique	616.2	Transparent and alcohol resist	Low	Transparent	87	5 to 10 min		
Copper	604.4	High conductibility	Low	Coppered	88	10 min		
Graphite	617	Conductable	Low	Black	93	5 to 10 min		

^{*} Depending of the machine's characteristics

6. Implementation

Summary of PRESSLAM \$1.1 parameters with LAM PLAN hot mouting resins.

Résine	Résine Heating time (min.)			e	Cooling time (min.)			Pressure (daN)			Temperature (°C)				Pressure mode		
Ø mould (mm)	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	
Organic (701)	3,5	4	6,5	10,5	3	3	3	3	800	1000	1200	1400	180	180	180	180	
Phenofree Use the SOLILUB	3	3	4	5.5	3	3	3,5	3.5	1000	1000	1200	1400	175	175	175	175	± • • • • • • • • • • • • • • • • • • •
Phenolic (602, 622, 632, 642)	3.5	3.5	4	5,5	3	3	3	3.5	800	1000	1200	1400	170	170	170	170	<u>+</u>
Epoxy (633, 634) Use the SOLILUB	4	5	5	6.5	4	4	4	4.5	800	1000	1200	1400	180	180	180	180	+
Acrylic (616 et 616.2)	4.5	5	5.5	6.5	4	4	4	4.5	800	1000	1200	1400	170	170	170	170	*
Copper (604.4)	3	3	3,5	5,5	3	3	3	3.5	800	1000	1200	1400	170	170	170	170	± ••
Graphite (617)	3	3	3.5	4.5	3	3	3	3.5	800	1000	1200	1400	170	170	170	170	<u>+</u>
LEGEND	֥	Continu	uous pre	ssure	Progressive pressure		Pressure at max, temperature			*	Pressure at cooling						