

Permaslip Mounting Medium, Liquid Coverslip and Tissue Transfer - Technical Memo

PRODUCT:	8 oz Can	12 Can/Case
Permaslip Mounting Medium	Part 6530B	Part 6530B

Additionally Needed for Tissue/Cell Transfer Procedure:

Xylene, ACS	Part 1445		
HistoTec™ Pen	Part 5725		
Scalpels, Finger	Part 6810	or	Scalpels, Flat Edge Part 5545
Superfrost® Plus Slides	Part 6203W	or	NewSilane Adhesive Slides Part 5070
Alcohol, Ethyl Denatured, 100%	Part 10841		
Alcohol, Ethyl Denatured, 95%	Part 10842		

APPLICATION:

Newcomer Supply Permaslip Mounting Medium is reliable and easy-to-use with excellent results as a standard mounting medium product or as a liquid coverslip (coverglass free) mounting medium.

Permaslip Mounting Medium can also be used in tissue/cell transfer procedures to transfer tissue sections or cell preparations from a prepared microscopic slide when specimen availability is limited and additional diagnostic workup is necessary. Examples when transfer with Permaslip is applicable include:

- Paraffin sections of small biopsies/minimal tissue
- Biopsies with a small foci of neoplasm
- Paraffin block is unavailable
- Cytology preparations, fine needle aspirates (FNA)
- Transfer of tissue from an uncharged slide to charged slide(s)
- Preparing multiple slides from a single slide preparation
- Salvaging/restoring broken slides back to a whole mount

The tissue/cell transfer procedure takes time to obtain a well-prepared end product. Reduced timings/short cuts should not be taken. Practicing the technique prior to performing on limited specimens is suggested. Staining quality of tissues/smears will not be affected and histochemical, immunohistochemistry (IHC) and cytochemical procedures can be performed on transferred samples with reliable results.

METHOD:

Coverslipping: Paraffin or frozen sections

Tissue/cell transfer: Stained and unstained paraffin sections, cytology preparations and smears

COVERSLIPPING PROCEDURE:

1. Complete staining procedure; dehydrate, clear with xylene and blot excess xylene from slide edges.
2. Apply Permaslip Mounting Medium to flow over and fully cover the tissue section(s).
 - a. Standard coverglass; install one edge first, allowing air bubbles to escape as opposite edge is lowered to slide.
 - b. Liquid coverglass (coverglass free); allow to dry for 30 minutes before handling and viewing microscopically.
3. Dry slides a minimum of 24-48 hours before filing.

TISSUE/CELL TRANSFER PROCEDURE:

1. Mark the designated tissue area(s) to be the focus of the tissue transfer on the underside of original slide with a HistoTec Pen.
2. **For previously stained sections:**
 - a. Soak slide in xylene until coverslip is easily removed without damage to tissue section.
 - b. Run slide through several changes of xylene to ensure removal of residual mounting medium.
 - c. Do not proceed through alcohol steps.
 - d. See Procedure Note #1.
3. **For unstained paraffin sections or smears:**
 - a. Soak slides in several changes of xylene, a minimum of 10 minutes. Do not proceed through alcohol steps.

4. Spread Permaslip Mounting Medium on xylene-coated slides with an applicator stick. Use sufficient Permaslip to form a meniscus over the entire tissue section or cell preparation.
 - a. Slide must be xylene coated and not allowed to dry out.
5. Place slide in a flat horizontal position in a 60°C oven for 90 minutes to 2 hours or in a 37°C oven overnight until meniscus hardens.
 - a. See Procedure Note #2.
6. Mark the surface of the hardened mounting medium meniscus to corresponding areas marked on underside of the slide (Step #1) with HistoTec Pen to maintain tissue orientation in transfer process.
7. Immerse the slide in a Coplin jar of water warmed in a 45°C-60°C water bath; soak for 90 minutes to 3 hours.
8. Slowly pry meniscus off at the edges with a scalpel blade. If the mounting medium does not peel off easily, return to warm Coplin jar and continue soaking.
 - a. See Procedure Note #3.
9. Moisten the charged slide(s) that will receive the transferred segment(s) with water.
10. Divide transferred segment into multiple sections: once meniscus is removed from the original slide, cut with a water moistened scalpel blade into desired segments as marked on mounting medium surface.
 - a. Place each cut segment, meniscus side up, onto a moistened charged slide in sequential order.
11. To transfer one intact segment of tissue; place on the moistened charged slide, meniscus side up.
12. Soak gauze in warm water; place gauze over tissue section. Using thumb, press gauze flat transferring water to the section, flattening edges and sealing transferred section to slide.
 - a. If a transferred section is placed meniscus down, the specimen will not adhere and will be lost in further steps.
13. Place slide(s) in a 37°C-60°C oven in a flat horizontal position for 1 hour or longer to securely adhere transferred section to slide.
14. Soak slide(s) in four changes of xylene for 10 minutes each or longer until all the Permaslip compound is completely dissolved.
 - a. See Procedure Note #4.
15. Re-hydrate through two changes each of 100% and 95% ethyl alcohols, 10 dips each. Wash well with distilled water.
16. Specimen is ready for histochemical, IHC or cytochemical staining.

PROCEDURE NOTES:

1. If any residual mounting medium remains on the slide, tissue transfer and subsequent staining may be compromised.
2. The meniscus of Permaslip Mounting Medium must thoroughly harden (but still remain pliable) on the slide before proceeding. To avoid brittleness do not exceed 60°C during the hardening process.
3. If a hotplate was used to initially dry slides or melt paraffin after original sectioning, it will be difficult to remove an entire intact section from the slide. Extended soaking of mounting medium and tissue section does not improve results.
4. If Permaslip is not completely dissolved from the tissue section(s), subsequent staining may be compromised.
5. The use of xylene substitutes has not been tested with this product.

REFERENCES:

1. Gill, Gary. *Cytopreparation: Principles & Practice, Essentials in Cytopathology*. New York: Springer Science and Business Media, 2013. 393-395.
2. Kubier, Patty and Rodney Miller. "Tissue Protection Immunohistochemistry." *American Journal of Clinical Pathology* 117 (2002): 194-198.
3. Luna, Lee G. *Manual of Histologic Staining Methods of the Armed Forces Institute of Pathology*. 3rd ed. New York: Blakiston Division, McGraw-Hill, 1968. 67-69.
4. Miller, Rodney and Patty Kubier. "Immunohistochemistry on Cytologic Specimens and Previously Stained Slides (When No Paraffin Block is Available)." *The Journal of Histotechnology* 25.4 (2002): 251-257.
5. Weibel, E. "The Preparation of Serial Microscopic Sections in Form of Plastic Films." Lecture, Annual meeting of the International Academy of Pathology, Boston, April 1959.
6. Modifications developed by Newcomer Supply Laboratory.