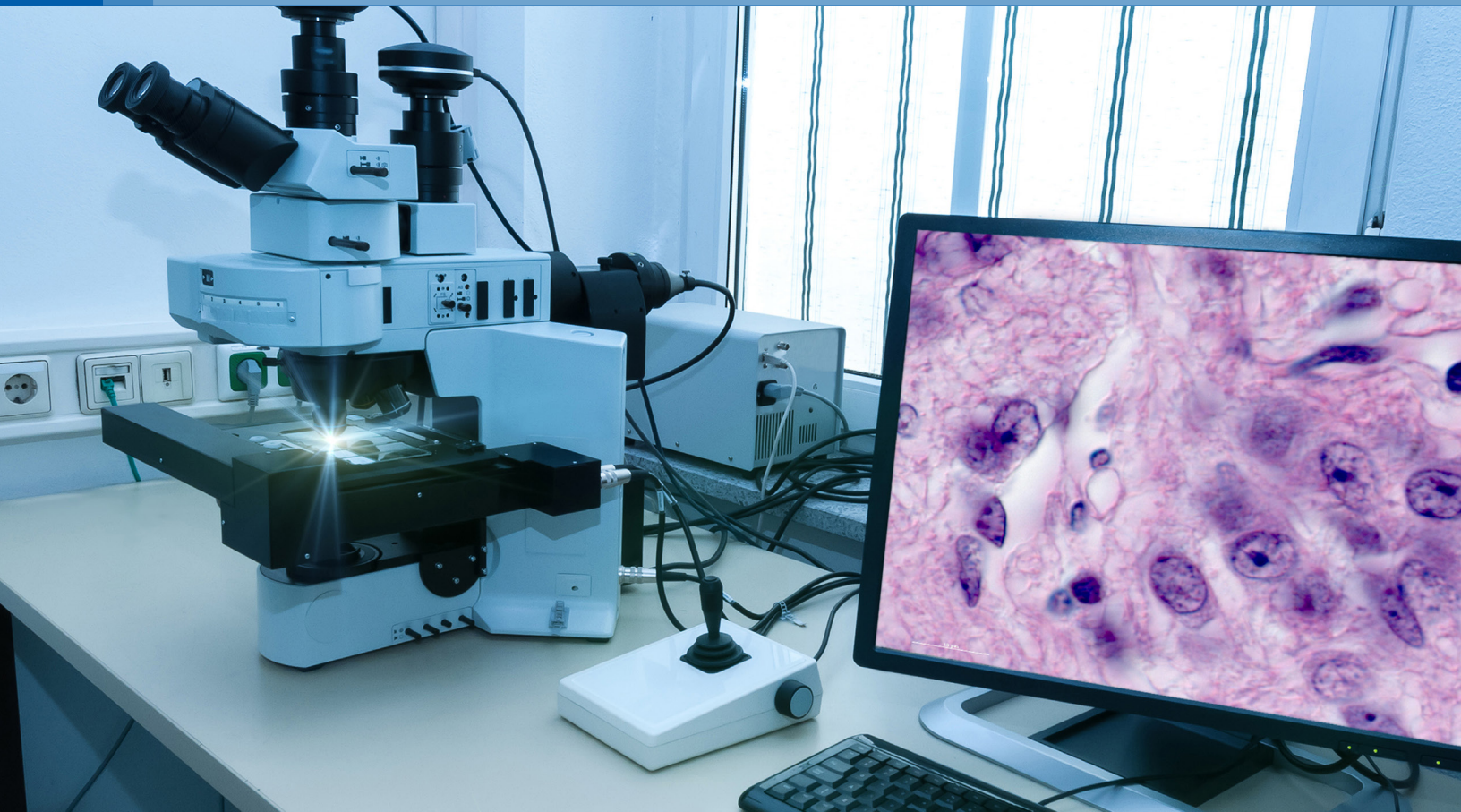


Histology

Fixation | Processing | Embedding | Sectioning | Staining



Reliability.
Purity.
Certainty.

The Fisher Chemical™ histology-grade solvents featured in this guide are formulated specifically for histology applications.

Fixation

Fixatives alter tissue by stabilizing the protein so that it resists further changes. They preserve tissue while maintaining the structure of the cells and sub-cellular components (e.g., the nucleus, endoplasmic reticulum, mitochondria).

- Key Products:
 - Fisher Chemical™ 10% Buffered Formalin
 - Fisher Chemical Formaldehyde, 37%
 - Fisher Chemical Formaldehyde, 10%
 - Fisher Chemical™ Formalde-Fresh™ Solution (low-odor 10% formalin)
 - Fisher Chemical™ FisherFresh™ Concentrate
 - Fisher Chemical™ Cal-Ex™ and Cal-Ex™ II Fixative/Decalcifier
- Differentiators:
 - Include an extensive line of common fixatives
 - “Use Tested” by an independent histology lab
 - Manufactured in ISO 9001:2008-certified facilities

Processing

Tissues must be dehydrated to remove the water in and around the cells so the tissue can be infiltrated by the embedding medium. Samples are submerged in a series of progressively more concentrated ethanol solutions to dehydrate the tissue and then “cleared” (using a clearing agent such as xylene) to remove the alcohol. The samples are then immersed in hot molten wax several times, which replaces the xylene and infiltrates the tissue.

- Key Products:
 - Fisher Chemical™ TissuePrep™ Embedding Media
 - Fisher Chemical Tissue Dry Dehydrant
 - Solvents (xylenes, acetone, methanol, 2-propanol, toluene, tetrahydrofuran)
 - Reagent alcohol (ethanol) and ethanol solutions
- Differentiators:
 - Manufactured in ISO 9001:2008-certified facilities
 - Various easy-to-use packaging configurations
 - Fisher Chemical™ FisherLOCK™ tamper-evident caps
 - Fisher Chemical™ EcoSafPak™ shippers
 - F-Style bottles
 - Specially filtered for use in histology applications

Embedding

Tissue samples are placed into metal molds and embedding media is added and allowed to harden. The tissue is embedded in the hardened blocks, which are then ready to be sectioned.

Histology – The study of the microscopic anatomy of tissues and their cells. It requires preparing a sample through tissue fixation, embedding the tissue in a medium, slicing the tissue, and staining the tissue so it can be examined under a microscope.

For frozen sections, embedding is performed on non-fixed tissue by using a water-based medium, usually containing glycol or resin.

- Key Products:
 - Fisher Chemical TissuePrep and TissuePrep 2 Micron Embedding Media
 - Fisher Chemical™ Permount™ Mounting Medium
 - Fisher Chemical™ HistoPrep™ Mold Release Spray
 - Fisher Chemical HistoPrep Frozen Tissue Embedding Media
- Differentiators:
 - Superior embedding compounds with melting points of 56° to 57°C and 55° to 57°C

Sectioning

The tissue is sliced into very thin (2 to 10µm) sections using a microtome and the slices are mounted on microscope slides for staining. (Frozen sections are processed using a cryostat, which can both freeze and slice the tissue.)

- Key Products:
 - Microtomes and accessories
 - Tissue flotation baths
 - Microscope slides, plain, frosted and treated
 - Coverslips
 - Microscope slide trays
 - Cryostats

Staining

Staining adds contrast to the tissue, and an H&E (hematoxylin and eosin) stain is one of the most commonly used options. Hematoxylin is combined with a metal mordant like aluminum, and together they color the cell nuclei a bluish black. The eosin counterstain is then used to color erythrocytes, collagen or the cytoplasm of epithelial or muscle cells in shades of pink. Other special techniques may be used to selectively stain specific types of cells and their components.

- Key Products:
 - Fisher Chemical Gill Method hematoxylin stains
 - Fisher Chemical Harris Modified Method hematoxylin stains
 - Fisher Chemical hematoxylin, certified
 - Fisher Chemical eosin Y, certified
 - Other Fisher Chemical dyes and stains
- Differentiators:
 - Certifications printed on each label
 - Manufactured in ISO 9001:2008-certified facilities
 - Lot-to-lot consistency
 - “Use Tested” by an independent histology lab



Special Packaging Solutions

What are the benefits?

- Rectangular-shaped bottles to maximize shelf and bench space
- Environmentally friendly EcoSafPak packaging is certified by the Sustainable Forestry Initiative™ (SFI)
- Can be shipped without cushioning material to minimize waste
- Strong enough to withstand UN (United Nations) performance tests
- Includes a tamper-evident FisherLOCK cap
- Preferred by histology customers
- QR Codes on labels grant access to lot-specific CofA and SDS

Packaging options may vary between product lines. Speak with your Fisher Scientific™ Sales Representative to find the right packaging for your chemicals.

Histology Products Selection Guide

Fixation Reagents

Product	Cat. No.	Size	Package
Formaldehyde, 37% By Weight (Histological)	F75P-1GAL	1 gal.	Poly Bottle
	F75P-20	20L	PolyPac
Formaldehyde Solution, 10% w/w	SF96-20	20L	PolyPac
Formaldehyde, Para (Certified)	04042-500	500g	Poly Bottle
Formaldehyde, 37% by Weight (with Preservative/Certified ACS)	F79-1	1L	Amber Glass
	F79-20	20L	Rigid Poly Bottle/Corrugated Box
	F79-200	200L	Poly Drum
	F79-4	4L	Amber Glass
	F79-500	500mL	Amber Glass
	F79P-20	20L	PolyPac
	F79P-4	4L	Poly Bottle
Formaldehyde, Para (Laboratory)	T353-500	500g	Poly Bottle
Formaldehyde, 40% by Volume (USP)	F77-20	20L	Rigid Poly Bottle/Corrugated Box
	F77-200	200L	Steel Drum/Poly Liner
	F77P-20	20L	PolyPac
	F77P-4	4L	Poly Bottle
Formalin Solution, 10% (Histological)	SF98-20	20L	PolyPac
	SF98-4	4L	Poly Bottle
Formalin, Buffered, 10% (Acetate Buffer/Certified)	SF99-20	20L	PolyPac
	SF99-4	4L	Poly Bottle
Formalin, Buffered, 10% (Phosphate Buffer/Certified)	SF100-20	20L	PolyPac
	SF100-200	200L	Poly Drum
	SF100-4	4L	Poly Bottle
Formalde-Fresh Solution (Low-Odor, 10% Formalin)	SF94-20	20L	PolyPac
	SF94-4	4L	Poly Bottle (Certified)
Formalde-Fresh Solution, Buffered (Low-Odor, 10% Formalin) (Phosphate Buffered)	SF93-20	20L	PolyPac
	SF93-4	4L	Poly Bottle
FisherFresh™ Concentrate; Low-Odor Formalin	SF95-4	4L	Amber Glass

Processing Reagents

Product	Cat. No.	Size	Package
TissuePrep™ Embedding Media (Certified)	T565	2.3kg	Carton
TissuePrep 2 Micron (Certified)	T555-2	2kg	Carton
Xylenes (Histological)	X3P-1GAL	1 gal.	Poly
	X3S-20	20L	Steel Pail
	X3S-200	200L	Steel Drum
	X3S-4	4L	SafeTin
	X3-F1GAL	1 gal.	Poly Rectangular Container
Acetone (Histological)	A16F-1GAL	1 gal.	Poly Bottle
	A16P-4	4L	Poly Bottle
	A16S-20	20L	Steel Pail
	A16S-4	4L	SafeTin
Methanol (Histological)	A433F-1GAL	1 gal.	Poly Bottle
	A433P-4	4L	Poly Bottle
	A433S-20	20L	Steel Pail
	A433S-200	200L	Steel Drum
	A433S-4	4L	SafeTin
2-Propanol (Histological)	A426F-1GAL	1 gal.	Poly Bottle
	A426P-4	4L	Poly Bottle
	A426S-20	20L	Steel Pail
	A426S-200	200L	Steel Drum
	A426S-4	4L	SafeTin
1,4-Dioxane (Histological)	D56S-4	4L	SafeTin
Toluene (Histological)	T326F-1GAL	1 gal.	Poly Bottle
	T326P-4	4L	Poly Bottle
	T326S-20	20L	Steel Pail
Tetrahydrofuran (Histological)	T400-20	20L	Steel Pail
	T400-4	4L	Amber Glass
	T400-500	500mL	Amber Glass
Ethanol, CDA 19 (Clear, Colorless Liq./Histological)	A406-20	20L	Steel Pail
	A406F-1GAL	1 gal.	Poly Bottle
	A406P-4	4L	Poly Bottle
Ethanol, Anhydrous (Clear, Colorless Liq./Histological)	A405-20	20L	Steel Pail
	A405F-1GAL	1 gal.	Poly Bottle
	A405P-4	4L	Poly Bottle
Alcohol, Reagent (Histological)	A962-200	200L	Steel Drum
	A962-4	4L	Amber Glass
	A962F-1GAL	1 gal.	Poly Bottle
	A962P-4	4L	Poly Bottle
	A962S-4	4L	SafeTin

Stains and Dyes

Product	Cat. No.	Size/Description	Package
Fisher Chemical			
Hematoxylin (Certified Biological Stain)	H345-100	100g	Amber Glass
	H345-25	25g	Amber Glass
Gill Method Hematoxylin Stains	CS400-1D	1L, Stain 1	Poly Bottle
	CS400-4D	4L, Stain 1	PolyPac
	CS401-1D	1L, Stain 2	Poly Bottle
	CS401-4D	4L, Stain 2	PolyPac
Harris Modified Method Hematoxylin Stains (with Acetic Acid)	SH26-4D	4L	Poly Bottle
	SH26-500D	500mL	Poly Bottle
Harris Modified Method Hematoxylin Stains (without Acetic Acid)	SH30-4D	4L	Poly Bottle
	SH30-500D	500mL	Poly Bottle
Eosin Y, 1% Solution in Water	SE23-500D	500mL	Amber Glass
Eosin Y, Alcoholic 0.25% Solution	SE22-500D	500mL	Amber Glass
Giemsa Stain (Powder/Certified Biological Stain)	G146-10	10g	Amber Glass
	G146-5	5g	Amber Glass
Wright's Stain (Powder/Certified Biological Stain)	W35-100	100g	Amber Glass
	W35-25	25g	Amber Glass
Neutral Red (Certified Biological Stain)	N129-25	25g	Amber Glass
Rose Bengal Disodium Salt (Certified Biological Stain)	R323-25	25g	Amber Glass
Phloxine B (Certified Biological Stain)	P387-25	25g	Amber Glass
Sudan IV (Certified Biological Stain)	S667-25	25g	Amber Glass
Carmine (Certified Biological Stain)	C579-25	25g	Amber Glass
Pararosaniline Hydrochloride (Certified Biological Stain)	P389-25	25g	Amber Glass
Auramine O (Certified Biological Stain)	A968-25	25g	Amber Glass
Eosin B (High-Purity Biological Stain)	AC229650250	25g	Amber Glass
Safranin O (Certified Biological Stain)	S670-100	100g	Amber Glass
	S670-25	25g	Amber Glass
Eosin Y (Certified Biological Stain)	E511-100	100g	Amber Glass
	E511-25	25g	Amber Glass
Orange G (Certified Biological Stain)	O267-25	25g	Amber Glass
Methyl Green (Certified Biological Stain)	M295-25	25g	Amber Glass
Malachite Green Oxalate (Certified Biological Stain)	M290-25	25g	Amber Glass
Fast Green FCF (Certified Biological Stain)	F99-10	10g	Amber Glass
	BP123-10	10g	Amber Glass
Light Green SF, Yellowish (Certified Biological Stain)	O3382-25	25g	Amber Glass
Indigo Carmine (Certified Biological Stain)	I166-25	25g	Amber Glass
Fuchsin Basic (Certified Biological Stain)	F98-10	10g	Amber Glass
Thionin (Certified Biological Stain)	T409-25	25g	Amber Glass
Toluidine Blue O (Certified Biological Stain)	T161-25	25g	Amber Glass
Fuchsin Acid (Certified Biological Stain)	F97-25	25g	Amber Glass
Methylene Blue (Certified Biological Stain)	M291-100	100g	Amber Glass
	M291-25	25g	Amber Glass
Crystal Violet (Certified Biological Stain)	C581-100	100g	Amber Glass
	C581-25	25g	Amber Glass
Brilliant Green (Certified Biological Stain)	B422-25	25g	Amber Glass
Alfa Aesar			
Silver Protein	AA4397014	25g	Amber Glass
	AA4397022	10g	Amber Glass
	AA4397006	5g	Amber Glass

Tissue Sectioning Supplies

Product	Cat. No.	Description	Quantity
Fisher Scientific™ Tissue Path™ Disposable Microtome Blades	22-030530	High Profile	50/Pack
Fisherbrand™ Superfrost™ Plus Microscope Slides	12-550-15	White, 75 x 25mm	144/Pack 1,440/Case
	12-550-16	Lilac, 75 x 25mm	
	12-550-16A	Tan, 75 x 25mm	
	12-550-17	Blue, 75 x 25mm	
	12-550-18	Green, 75 x 25mm	
	12-550-19	Pink, 75 x 25mm	
	12-550-20	Yellow, 75 x 25mm	
Fisherbrand™ Colorfrost™ Plus Microscope Slides	22-230-890	Aqua, 75 x 25mm	144/Pack 1,440/Case
	22-230-891	Gold, 75 x 25mm	
	22-230-892	Burnt Orange, 75 x 25mm	
Fisherbrand Extra-Thick Microscope Slides	22-267005	Plain Glass, 3 x 1.5 in.	144/Pack 1,440/Case
	22-267013	Plain Glass, 3 x 2 in.	
	22-267062	Frosted (both ends), 3 x 1 in.	

Embedding Reagents

Product	Cat. No.	Size	Package
Fisher Chemical™ TissuePrep™ Embedding Media (Certified), Paraffin Wax	T56-5	2.3kg	Carton
Fisher Chemical™ HistoPrep™ Frozen Tissue Embedding Media	SH75-125D	125mL	Plastic Bottle
Fisher Chemical TissuePrep 2 Micron (Certified)	T555-2	2kg	Carton
Fisher Chemical™ Permount™ Mounting Medium	SP15-100	100mL	Amber Bottle
	SP15-500	500mL	Amber Bottle
Fisher Chemical Permount Adhesive	S70104	100mL	Amber Bottle
Fisher Chemical™ Cal-Ex™ Decalcifier	CS510-10D	10L	PolyPac
	CS510-1D	1L	Poly Bottle
Fisher Chemical Cal-Ex II Fixative/Decalcifier	CS511-1D	1L	Poly Bottle
	CS511-4D	4L	Poly Bottle
Fisher Chemical HistoPrep Mold Release	SH70-250D	250mL	Plastic Bottle
Fisher Chemical™ Wax Out™ Cleaning Solution	SW20-4	4L	SafeTin
Fisher Chemical Tissue Dry Dehydrant	SH5-4	4L	SafeTin

Fisher Chemical TissuePrep Embedding Medium

Easy to Use and Fast Melting

Fisher Chemical™ TissuePrep™ and TissuePrep 2 Embedding Media undergo robust functional use tests and visual inspection to verify quality and purity. They're conveniently packaged in containers that open like milk cartons — just pour as much as you need into your heater/dispenser. TissuePrep pellets are only a centimeter in diameter, which allows them to disperse uniformly and melt quickly. Store unused pellets right in the carton at room temperature and they'll stay separate and free-flowing indefinitely.



It's Pure

TissuePrep is carefully formulated from high-quality paraffin blended with special polymers and additives to enhance performance, and a filtered pastillation process creates clean, white, uniform pellets. Throughout the manufacturing process, each batch is subject to clinical and physical testing to keep the finished product free from impurities that might interfere with sectioning or microscopic examination.

TissuePrep Embedding Medium

Cat. No. T56-5

TissuePrep Embedding Medium is the original formula of purified paraffin and synthetic polymer that forms smooth, even ribbons.

- Low viscosity provides easy application and bubble-free preparations
- Produces a thin adhesive layer for better optical quality
- A refractive index similar to that of fixed protein helps keep images free of diffraction halos and other optical imperfections
- Does not interfere with cover slip mounting
- Won't shift the colors of biological dyes; little or no fading during storage (in darkness)
- Maintains cohesiveness, adhesive quality and color with age
- Melting range: 56° to 57°C

TissuePrep 2: Ultra-Thin, Distortion-Free Tissue Sections

Cat. No. T555-2

TissuePrep 2 is an improved, firmer medium for producing 2µm-thick tissue sections with clinically significant detail and minimal tissue compression. A new, lower melting range eliminates tissue distortion caused by excessive heat during embedding.

- Minimum distortion
- Reduced compression
- Superior cohesion
- Use for sections as thin as 2µm
- Melting range: 55° to 57°C

The cohesion of TissuePrep 2 and its ability to thoroughly infiltrate specimens results in smooth, even and continuous ribbons that slice into detailed, ultra-thin sections and eliminates crumbing or cracking.

In addition to the comprehensive portfolio of Histology Grade products listed in this guide, the following Fisher Chemical™ products are also suitable for histological work.

Product Description (Grade)	Base Cat. No.	Available Sizes
Acetone (Certified ACS)	A18	500mL, 1L, 4L, 20L, 200L
Methanol (Certified ACS)	A434	20L
2-Propanol (Certified ACS Plus)	A16	500mL, 1L, 4L, 20L, 200L
Toluene (Certified ACS)	T324	500mL, 1L, 4L, 20L, 200L
1,4-Dioxane (Certified ACS)	D111	500mL, 4L
Hydrogen Peroxide, 30% (Certified ACS)	H325	100mL, 500mL, 4L, 30 gal.

The following Fisher BioReagents™ products are excellent alternatives for customers who require high-purity solvents for staining and de-staining tissue samples.

Product Description (Grade)	Base Cat. No.	Available Sizes
Ethanol, 70% (Molecular Biology Grade)	BP8201	500mL, 1L, 4L
Ethanol, 96% (Molecular Biology Grade)	BP8202	500mL, 1L, 4L
Ethanol, 70% Denatured (Molecular Biology Grade)	BP8203	1 gal.
Ethanol (Molecular Biology Grade)	BP2818	100mL, 500mL, 4L
2-Propanol (Molecular Biology Grade)	BP2618	500mL, 1L, 2.5L, 4L
Water (Molecular Biology Grade)	BP2819	100mL, 1L, 4L, 10L, 20L

To place an order, contact your local Fisher Scientific office.



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