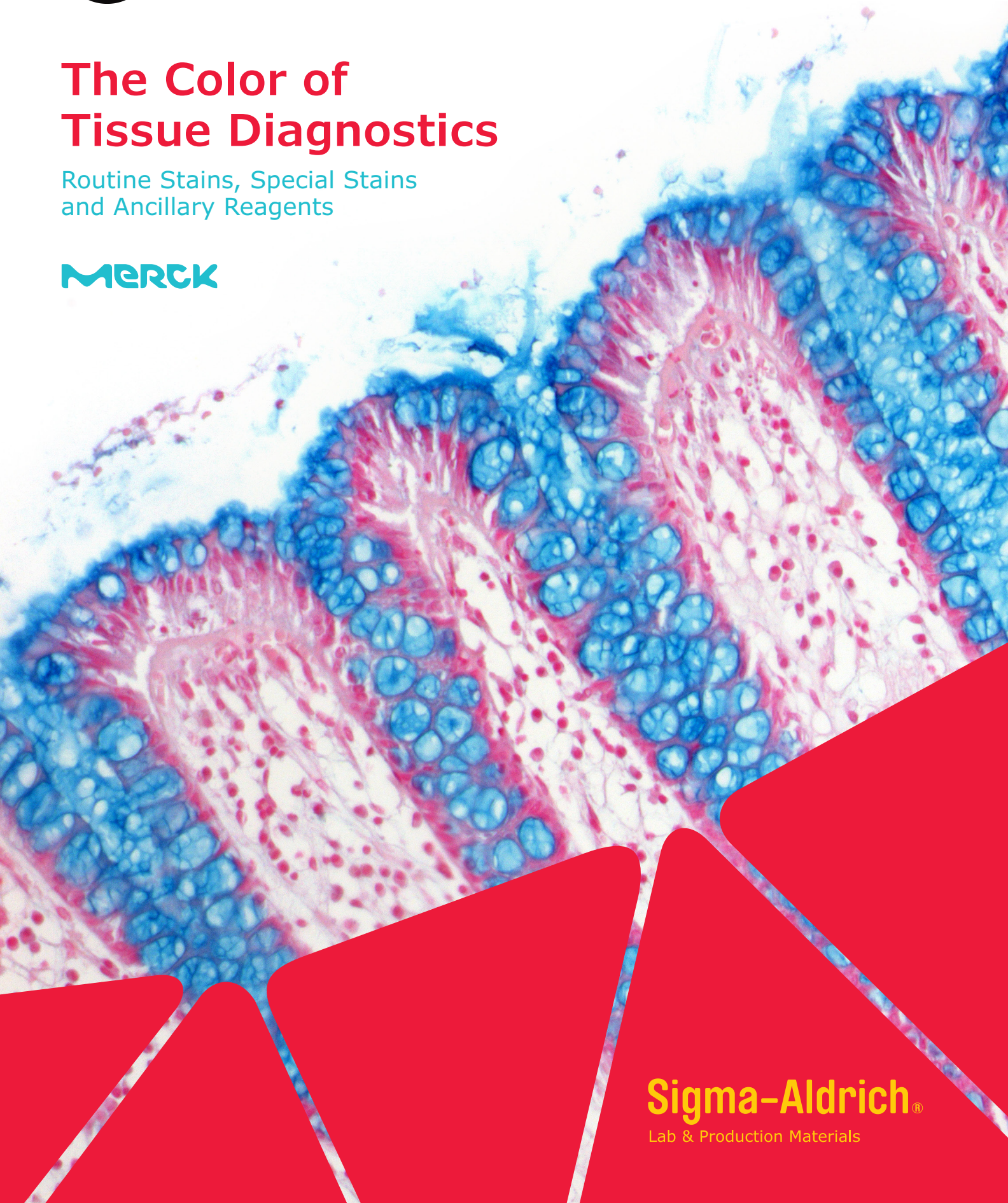
SCIENTIFIC LABORATORY SUPPLIES

The Color of Tissue Diagnostics

Routine Stains, Special Stains and Ancillary Reagents

MERCK



Sigma-Aldrich®

Lab & Production Materials

SCIENTIFIC LABORATORY SUPPLIES

Hematology & Histology

Code	Description	List Price	Offer Price
HT5011-1CS	Formalin solution, neutral buffered, case of 48 x 15mL, histological tissue fixative	**£103.00**	**£82.40**
45253-1L-F	Wright stain solution, for microscopy	**£54.50**	**£43.60**
3952016-500ML	Schiffs reagent	**£145.00**	**£116.00**
91C-1KT	Naphthol AS-D chloroacetate (specific esterase) kit	**£208.00**	**£166.40**
10771-500ML	Histopaque-1077, sterile-filtered, density: 1.077 g/mL, 500mL	**£156.00**	**£124.80**
WS32-1L	Wright stain, modified	**£130.00**	**£104.00**
D1556-250ML	OptiPrep density gradient medium, used for cell and subcellular organelle isolation	**£306.00**	**£244.80**
HT15-1KT	Trichrome stain (masson) kit	**£365.00**	**£292.00**
TTR012-25EA	Trichrome TISSUE-TROL control slides, from human liver	**£175.00**	**£140.00**
GHS380-2.5L	Hematoxylin solution, Gill no. 3	**£126.00**	**£100.80**
MHS80-2.5L	Hematoxylin solution, mayers	**£340.00**	**£272.00**
P8920-100ML	Poly-L-lysine solution, 0.1% (w/v) in H_2O	**£159.00**	**£127.20**
GE17-0891-01	Percoll(R); cytiva; 17-0891-01; pack of 1L	**£387.00**	**£309.60**
11191-100ML	Histopaque-1119, sterile-filtered, density: 1.119 g/mL	**£84.30**	**£67.44**
TTR002-25EA	Amyloid TISSUE-TROL control slides, from human heart tissue containing intercellular amyloid	**£175.00**	**£140.00**
A3157-10G	Alcian blue 8GX, certified by the Biological Stain Commission	**£166.00**	**£132.80**
HT110132-1L	Eosin Y solution, alcoholic	**£111.00**	**£88.80**
P1644-100ML	Percoll, pH 8.5-9.5 (25 C)	**£127.00**	**£101.60**
HT5011-1CS	Formalin solution, neutral buffered, case of 48 x 15mL, histological tissue fixative	**£103.00**	**£82.40**
A5472-1GAL	Accustain formalin free fixative	**£77.50**	**£62.00**
P0425-72EA	Poly-prep slides, poly-L-lysine coated glass slides	**£101.00**	**£80.80**
S4651-72EA	Silane-prep slides, glass slides coated with silane (aminoalkylsilane)	**£90.40**	**£72.32**
A3648-100ML	(3-Aminopropyl)triethoxysilane, >=98%	**£50.40**	**£40.32**
534056-4L	Xylenes, histological grade	**£45.00**	**£36.00**
534056-20L	Xylenes, histological grade	**£308.00**	**£246.40**

SCIENTIFIC LABORATORY SUPPLIES

Microscopy

Code	Description	List Price	Offer Price
1092042500	Giemsas azur eosin methylene blue solution for microscopy	**£154.00**	**£134.75**
1014249025	May-gruenwalds eosine-methylene blue so	**£721.00**	**£630.88**
1092532500	Papanicolaous solution 1A Harris hematoxylin solution for cytological cancer and cycle diagnosis	**£228.00**	**£199.50**
1116099025	Histosec pastilles solidification point 56-58 grad C embedding agent for histology	**£191.00**	**£167.13**
1090330500	Schiffs reagent for microscopy	**£153.00**	**£133.88**
1098439025	Neo-clear (xylene substitute) for microscopy	**£317.00**	**£277.38**
1068889025	Papanicolaous solution 2A orange g solu	**£1,620.00**	**£1,417.50**
1116740001	Hemacolor rapid staining of blood smear staining set for microscopy	**£71.60**	**£62.65**
1159430100	Methylene blue (C.I.52015) for microscopy certistain	**£128.00**	**£112.00**
1051752500	Hematoxylin solution modified acc. to Gill II for microscopy	**£143.00**	**£125.13**
1046990100	Immersion oil for microscopy	**£30.10**	**£26.34**
1092729025	Papanicolaous solution 3B polychromatic	**£1,620.00**	**£1,417.50**
1151619025	Histosec pastilles (without DMSO) solidification point 56-58 GRAD C; embedding agent for histology	**£189.00**	**£165.38**
1014241000	May-gruenwalds eosine-methylene blue solution modified for microscopy	**£45.90**	**£40.16**
1016410001	Congo red staining kit Kit for detection of amyloid acc. to highman	**£164.00**	**£143.50**
1017362500	Osteomoll rapid decalcifier-solution for histology	**£114.00**	**£99.75**
1017361000	Osteomoll rapid decalcifier-solution for histology	**£59.80**	**£52.33**
1017289010	Osteosoft mild decalcifier-solution for histology	**£347.00**	**£303.63**
1017281000	Osteosoft mild decalcifier-solution for histology	**£55.10**	**£48.21**
1116092504	Histosec pastilles solidification point 56-58 grad C embedding agent for histology	**£156.00**	**£136.50**
1116091000	Histosec pastilles solidification point 56-58 grad C embedding agent for histology	**£28.10**	**£24.59**
1090160500	Neo-mount anhydrous mounting medium for microscopy	**£74.90**	**£65.54**
1090160100	Neo-mount anhydrous mounting medium for microscopy	**£32.30**	**£28.26**
1008690500	Entellan new for cover slipper for microscopy	**£84.00**	**£73.50**
1005790500	DPX new non-aqueous mounting medium for microscopy	**£58.90**	**£51.54**
1085620050	Aquatex (aqueous mounting agent) for microscopy	**£27.90**	**£24.41**

SCIENTIFIC LABORATORY SUPPLIES

Staining

Code	Description	List Price	Offer Price
1098442500	Eosin Y-solution 0.5% aqueous for microscopy	**£143.00**	**£125.13**
1098435000	Neo-clear (xylene substitute) for microscopy	**£94.20**	**£82.43**
1051740500	Hematoxylin solution modified acc. to Gill III for microscopy	**£43.40**	**£37.98**
1051742500	Hematoxylin solution modified acc. to Gill III for microscopy	**£136.00**	**£119.00**
1051741000	Hematoxylin solution modified acc. to Gill III for microscopy	**£83.80**	**£73.33**
1098441000	Eosin Y-solution 0.5% aqueous for microscopy	**£64.00**	**£56.00**
1003271000	Hydrochloric acid in ethanol for microscopy	**£46.80**	**£40.95**
1000632500	Acetic acid (glacial) 100% for analysis	**£76.90**	**£67.29**
1000639200	Acetic acid (glacial) 100% for analysis	**£1,810.00**	**£1,583.75**
1000631000	Acetic acid (glacial) 100% for analysis	**£39.10**	**£34.21**
1000632511	Acetic acid (glacial) 100% for analysis	**£70.80**	**£61.95**
1082984000	Xylol - IVD for microscopy 4L	**£117.00**	**£102.38**
1098435000	Neo-clear (xylene substitute) for microscopy	**£94.20**	**£82.43**
2853-100ML	Eosin B solution, 0.1% aqueous solution	**£58.30**	**£46.64**
56694-100ML-F	Acid alcohol solution, for microscopy	**£14.00**	**£11.20**
H1252-1G	Homovanillic acid, fluorimetric reagent	**£49.50**	**£39.60**
335940-10G	Xylene cyanol FF, dye content 75%	**£44.90**	**£35.92**
A5597-1GAL	Xylene substitute	**£68.50**	**£54.80**

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Tissue staining
The majority of the products featured in this brochure belong to the group *in vitro* diagnostic (IVD) medical devices. They are classified as being IVDs Class I or Class II, exempt per US FDA regulation and comply with the EU IVD Directive, most of them bearing the CE logo on the label. However, some of the products featured in this brochure are not IVD medical devices but are required to facilitate the staining procedures.

Fixation and Processing
Single products used as Fixatives, Tissue processing agents, Mounting Media and Embedding Media and many Stains belong to the group of in vitro diagnostic (IVD) medical devices. According to US FDA regulation they are classified being IVDs, Class I, exempt.

Products included in this brochure are not available in all countries.
Contact your local sales representative or dealer for details.

Greener Alternative Product: Adheres to one or more of The 12 Principles of Green Chemistry

Ancillary Reagents



Non-aqueous mounting media
Neo-Mount® and DPX new

Fixing Media

Fixing is a procedure which is designed to stop all of the intracellular processes while maintaining the structure and integrity of the tissue and simultaneously prevent autolysis, decomposition, and putrefaction. The fixing agent is selected according to the diagnostic problem being addressed, the type and size of the available material and the required embedding and staining methods to be used.

M-FIX® spray fixative

M-FIX® spray fixative is a fixing media suitable for cytological smears that have to be stained using classical or modified Papanicolaou staining techniques and which must also be fixed immediately while still moist in order to prevent the cells from drying out. Smears can be fixed in alcoholic solution for 30 minutes or using M-FIX® fixation spray. M-FIX® contains polyethylene glycol in aqueous/alcoholic solution; this effectively prevents the cells from drying out and also protects them during transport. M-FIX® is suitable for fixing gynecological specimens but also for non-gynecological materials such as sputum, urine sediment, effusions, lavages, FNA (fine needle aspiration), etc.

Product	Cat. No	Directions for use	Package size
M-FIX® spray fixative	**103981**	Spray fixative for cytodiagnosis	100 mL, 1 L

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Ordering Information: Fixing Media

Product	Cat. No	Directions for use	Package size
Bouin's solution	**HT10132**	*Prepared with saturated picric acid, formaldehyde and acetic acid. Excellent fixative for preserving soft and delicate structures. Used as a mordant in various trichrome procedures.*	*1 L*
	HT101128		*4 L*
Formaldehyde solution	**252549**	*Formaldehyde solution, ACS reagent, 37 wt% in water, 10-15% methanol stabilizer*	*25 mL, 100 mL, 500 mL, 4 X 100 mL, 6 X 500 mL, 1 L, 4 L,*
Formaldehyde solution 4%, buffered, pH 6.9	**100496**	**Ready-to-use fixing solution**	5 L, 10 L
Formaldehyde solution about 37%	**104003**	*Guaranteed reagent (GR) for analysis stabilized with about 10% methanol*	*1 L, 2.5 L, 5 L, 25 L*
Formaldehyde solution min. 37% free from acid	**103999**	Contains calcium carbonate as acid binding basis; filter before use	1 L, 2.5 L
Formalin Free Fixative, Accustain™	**A5472**	*A formalin-free tissue fixative that is a less toxic alternative to formalin. Performs well with PCR, in situ hybridization and immunohistological staining.*	*1 Gal*
Formalin solution, neutral buffered, 10%	**HT5011**	*General purpose histological tissue fixative.*	*48 x 15 mL*
	HT5012		*24 x 60 mL*
	HT5014		*24 x 120 mL*
	HT501128		*4 L*
	HT501320		*9.5 L*
	HT501640		*19 L*
Formalin, 10%, Neutral Buffered with 0.03% Eosin	**F5304**	*Intended for use as a general histological fixative. The addition of the eosin to the formulation allows the user to more easily visualize small fragments of tissue during the transfer of the tissue from the fixative to the tissue cassette.*	*4 L*
Formalin, 10%, Neutral Buffered, Wintergreen Scented	**F5554**	*Intended for use as a general purpose histological fixative. Wintergreen oil has been added to the standard formulation to provide a wintergreen scent.*	*4 L, 19 L*
Glutaraldehyde solution 25%	**112179**	Electron microscopy, purified and filled under nitrogen	25 mL, 100 mL
Glutaraldehyde solution 25% for electron microscopy	**104239**	Fixing agent for fine structures and enzyme histochemistry.	250 mL, 1 L, 2.5 L
Glutaraldehyde solution	**G5882**	*Grade I, 25% in H_2O, specially purified for use as an electron microscopy fixative. Recommended for techniques demanding high purity.*	*10 x 1 mL, 50 mL, 80 mL, 10 x 10 mL, 100mL, 1 L*

Ordering Information: Fixing Media

Product	Cat. No	Directions for use	Package size
Hartman's Fixative histological tissue fixative	**H0290**	*An overnight fixative for the visualization of lymph nodes in radical dissection specimens. Helpful with both breast and colon specimens by turning lymph nodes white. Moore and Barr used a version of Hartman's fixative for fixing skin biopsy specimens for study of fine nuclear details. Rat testes for immunohistochemical and morphological comparison were fixed using conventional and modified Hartman's fixative for 24 hours, while eyes and testes for other analyses were fixed for 48 hours.*	*500 mL, 1 Gal*
Methanol Absolute - Acetone free	**M1775**	*Suitable for use as a fixative and in preparing various Romanowsky type staining solutions.*	*1 Gal*
Osmium(VIII) oxide (available from 09/2021)	**124505** **104119**	*1–2% aqueous solution, several hours necessary to dissolve the crystals, use only redistilled water for preparing the solution, a black-colored solution is unusable*	*500 mg, 1 gram (ampoule)*
Picric Acid solution 1.3% in H_2O (saturated)	**P6744**	*For use as a general cytoplasmic stain, connective tissue fiber stain, and fixative.*	*1 Gal*
Zinc Formalin Fixative	**Z2902**	*Morphological preservation of nuclear and cytoplasmic components. Can replace neutral buffered formalin for routine tissue and immunohistochemical procedures. It is a non-precipitating fixative which can be used with automated and manual methods.*	*3.75 L*

Italics refer to products available for research use only. Not for use in diagnostic procedures.

Embedding Media

In order to achieve uniform sectioning quality, defined hardness and homogeneity of the material to be processed is necessary. This is achieved by the use of embedding agents which are harder and denser than the tissue. Traditional embedding agents are paraffins, synthetics, resins and gelatin.

Histosec™ Paraffin Pastilles

Histosec™ paraffin pastilles products are selected paraffins with added polymers which are available with and without DMSO (dimethyl sulfoxide). Specially selected raw materials and standardized quality guarantee complete penetration of the tissue being processed and allow significantly shorter processing times to be used in a histoprocessor. The increased elasticity of embedded tissue enables excellent individual and serial sections to be prepared.

Product	Cat. No	Directions for use	Package size
Histosec™ pastilles	**111609**	Paraffin embedding, contains DMSO	4 x 2.5 kg, 25 kg
Histosec™ pastilles without DMSO	**115161**	Paraffin embedding	4 x 2.5 kg, 25 kg

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Ordering Information: Embedding Media

Product	Cat. No	Directions for use	Package size
Canada balsam solution for microscopy	**3984**	*Embedding medium for microscopy*	*25 mL, 100 mL*
Epoxy Embedding Medium kit	**45359**	*Epoxy Embedding Medium (Epon 812 substitute) is a very widely used embedding resin for electron microscopy, as it penetrates into the tissue specimen faster than Araldite and other polymers due to its low viscosity. Epoxy can be hardened easely and uniformly at low temperatures by the addition of DDSA, NMA and the accelerator DPM-30. Slight shrinkage does occur during curing. Epoxy embedding medium is useful for embedding a variety of tissues as a wide hardness can be obtained with this resin to suit a specific tissue type by using two different anhydride curing agents (DDSA and NMA).*	*1 EA*
Epoxy embedding medium, accelerator ≥95% (NT)	**45348**	*Epoxy embedding medium, accelerator is used according to the protocol provided for Epoxy Embedding Medium kit, Prod. No. 45359. The embedding media is used for electron microscopy.*	*250 mL*
JB-4 Embedding Kit	**EM0100**	*JB-4 is a water-soluble, GMA based, plastic resin kit intended for use in the preparation of embedded samples for high resolution light microscopy. It is a technique now widely used for research and clinical diagnosis. JB-4 yields semi-thin sections (0.5µ-2µ) with excellent morphological preservation.*	*1 KT*
Osteo-Bed Bone Embedding Kit	**EM0200**	*Suitable for use with large and small mineralized (undecalcified) bone sections. Yields clear, hard blocks for cutting sections. Not water-soluble.*	*1 KT*
Osteo-Bed Bone Embedding Solvent	**O8639**	*For use with Osteo-Bed Bone Embedding Kit. Solvent for removal of plastic from sections prior to rehydration and staining*	*4 x 500 mL*
Paraffin pastilles	**107164**	Pure paraffin for histology	4 x 2.5 kg pastilles
Paraplast® for tissue embedding	**P3558**	*Paraplast® is suitable for tissue infiltration. It is a refined combination of highly purified paraffin with plastic polymers. It produces minimal tissue compression and wrinkle-free sections, and cuts to 4µm thickness with excellent ribbon continuity.*	*1 kg*
Paraplast Plus® for tissue embedding	**P3683**	*Paraplast Plus® is a regular Paraplast® with approx. 0.8% DMSO added for enhanced ease of infiltration and sectioning. It is recommended for tissues which are difficult to process with regular Paraplast®. Paraplast Plus® cuts continuous ribbons at 2µm thickness or short ribbons at 1µm thickness.*	*1 kg*
Paraplast X-TRA® for tissue embedding	**P3808**	*Paraplast X-TRA® is a unique blend of highly purified paraffin and low molecular weight polymers for lower temperature infiltration and better compression resistance. It cuts continuous ribbons of 2µm thickness.*	*1 kg*

Ordering Information: Embedding Media

Product	Cat. No	Directions for use	Package size
PolyFreeze Tissue Freezing Medium	**P0091**	*Water-soluble support matrix and a form of embedding medium for frozen sectioning.*	*6 X 120 mL*
	SHH0023	*Green support matrix or form of embedding medium for frozen sectioning.*	*6 X 120 mL*
	SHH0024	*Yellow support matrix or form of embedding medium for frozen sectioning.*	*6 X 120 mL*
	SHH0025	*Blue support matrix or form of embedding medium for frozen sectioning.*	*6 X 120 mL*
	SHH0026	*Clear support matrix or form of embedding medium for frozen sectioning.*	*6 X 120 mL*
Spurr Low Viscosity Embedding Kit	**EM0300**	*Low viscosity of 60 cps allows rapid infiltration into a variety of difficult materials. May be used to prepare mineral specimens for polishing.*	*1 KT*

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Decalcifiers and Tissue Softeners

OSTEOMOLL® and OSTEOSOFT® Decalcification Solutions

Decalcification methods are necessary for microscopic examinations of bone and other hard tissue in routine histological procedures. The material to be decalcified/demineralized is placed in excess of decalcifying solution. The decalcification time is dependent on the size and structural density of the hard tissue, while the composition of the decalcifying solution also exerts a decisive influence on the process.

OSTEOMOLL® Decalcification Solutions

Decalcification of bone and hard tissue requires the use of either inorganic acids, as is the case with OSTEOMOLL®, which liberates the acids of the mineral salts and can subsequently be rinsed out. The decalcifying solution contains a blue inert dye which enables the differentiation of OSTEOMOLL® from other clear liquids in the laboratory (e.i. xylene and alcohol). The dye used is inert in terms of any effect on the tissue to be decalcified.

OSTEOSOFT® Decalcification Solutions

When decalcifying sensitive, calcium-containing tissue a solution such as OSTEOSOFT® is used, which contains complex- or chelate-forming agents that bind the calcium ions of the tissue. This type of decalcifying solution preserves the antigen structures in the tissue so that immunological procedures can be conducted. The decalcifying solution contains a yellow inert dye which enables the differentiation of OSTEOSOFT® from other clear liquids in the laboratory (i.e. xylene and alcohol). The dye used is inert in terms of any effect on the tissue to be decalcified.

Product	Cat. No	Directions for use	Package size
OSTEOMOLL® rapid decalcifier-solution	**101736**	Bone-decalcification solution for bone and hard tissues in histology	1 L, 2.5 L
OSTEOSOFT® mild decalcifier-solution	**101728**	Bone-decalcification solution for sensitive, calcium-containing tissue in histology	1 L, 10 L

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Ordering Information: Decalcifiers and Tissue Softeners

Product	Cat. No	Directions for use	Package size
Decalcifying Solution-Lite	**D0818**	*Decalcifying Solution-Lite is designed to be a universal effective decalcifying agent. It is intended to be used for the decalcification of routine, immunohistochemical and bone marrow core specimens.*	*1 L*
Mollifex™ Tissue Softener	**65039**	*Softening agent for use with paraffin embedded tissues. Ideal for hard to section blocks and brittle tissues.*	*500 mL*

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Mounting Media

Mounting agents are either aqueous or non-aqueous; which is determined by the protocol used. In the case of non-aqueous agents, the preparations must be fully dehydrated. One of the most important parameters of mounting agents is the refractive index (nD); this should be around 1.5, the refractive index of glass.

Ordering Information: Mounting Media

Product	Cat. No	Directions for use	Package size
Canada balsam	**101691**	Natural resin	25 mL, 100 mL
Canada balsam for microscopy	**60610**	*Canada balsam is used as a stable apolar hydrophobic mounting medium for light microscopy slide preparation, especially when long term storage is desired.*	*25 mL, 100 mL*
	C1795		25 mL, 100 mL
CC/Mount™ tissue mounting medium	**C9368**	*CC/Mount™ is an aqueous based permanent mounting medium, similar to Crystal Mount™, for the permanent preservation of tissue sections stained with peroxidase and alkaline phosphatase based systems as well as with various fluorescent dyes.*	*30 mL*
DPX Mountant for histology	**06522**	*Slide mounting medium with refractive index n20/D 1.52, and viscosity 1200-1800 mPa·s (20°C)*	*100 mL, 500 mL*
DPX	**100579**	Non-aqueous mounting agent	500 mL
Entellan™ rapid mounting medium	**107960**	Permanent slides (contains toluene)	500 mL
Entellan™ new rapid mounting medium	**107961**	Rapid mounting agent, permanent slides, no bubble formation at high ambient temperatures (contains xylene)	100 mL, 500 mL, 1 L
Entellan™ new for cover slipper	**100869**	Permanent slides, for use with cover slipper	500 mL
Glycerol Gelatin	**GG1**	*Aqueous slide mounting medium. Prepared with gelatin, glycerol and phenol. Very similar in composition to Kaiser's glycerol jelly.*	*15 mL, 10 x 15 mL*
ImmunoHistoMount™ mounting medium	**I1161**	*ImmunoHistoMount™ is a permanent aqueous mounting medium designed for tissue sections and cell smears with peroxidase and alkaline phosphatase chromogens that cannot be dehydrated with organic solvents. This mounting medium preserves fast red, aminoethylycarbazole (AEC), BCIP/NBT, and BCIP/INT chromogens and is compatible with counterstains like hematoxylin and nuclear fast red (NFR). ImmunoHistoMount™ is also suitable for chromogens like DAB and DAB with nickel and cobalt. It is not compatible with routine H&E staining.*	*30 mL*
Kaiser's glycerol gelatine, phenol-free	**108635**	Classic aqueous mounting medium for microscopy. The preservative phenol is replaced with a proprietary compound that is more environmentally friendly.	100g
M-GLAS® liquid cover glass	**103973**	Mounting agent for the even coating of cytological smears instead of cover slips (contains toluene)	500 mL
Organo/Limonene Mount™ mounting medium	**O8015**	*This ready-to-use mounting medium is made with limonene, a natural product from orange peels. It is good for coverslipping stained tissues and cell smears that can be dehydrated with organic solvents. This mounting medium is suitable for organic solvent resistant immunohistochemistry (IHC) chromogens as well as an excellent choice for mounting H&E stained slides.*	*30 mL, 100 mL*

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Immersion Media

Immersion media are used in conjunction with immersion slides and are located between the surface of the specimen and the lens of the microscope. Immersion media are liquids that are frequently of an oily nature and which have a defined refractive index. It is important that the refractive index (nD) is about 1.5, the refractive index of glass. This enables a homogeneous oil immersion to be achieved.

Ordering Information: Immersion Media

Product	Cat. No	Directions for use	Package size
Immersion oil for microscopy	**104699**	Viscosity about 100–120 mPa·s	100 mL, 500 mL
	56822	*Immersion oil is used for high resolution (1000X) light microscopy work under oil immersion objective lens.*	*50 mL, 250 mL, 1 L*

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Histology Bath Fluid

Ordering Information: Histology Bath Fluid

Product	Cat. No	Directions for use	Package size
Novec™ 7000 Engineered Fluid	**SHH0001**	*Low odor, non-flammable low global warming potential heat transfer fluid, can reach -120ºC, also used as direct expansion refrigerant*	*500 mL, 1 L*
Novec™ 7100 Engineered Fluid	**SHH0002**	*Low odor, non-flammable low global warming potential heat transfer fluid*	*500 mL, 1 L*

Novec™ is a trademark of 3M Company.

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Buffers

Ordering Information: Buffers

Product	Cat. No	Directions for use	Package size
Buffer tablets pH 6.4	**111373**	Buffer solution/rinsing solution pH 6.4. Used for preparing buffer solution according to WEISE for staining of blood smears.	100 tablets
Buffer tablets pH 6.8	**111374**	Buffer solution/rinsing solution pH 6.8. Used for preparing buffer solution according to WEISE for staining of blood smears.	100 tablets
Buffer tablets pH 7.2	**109468**	Buffer solution/rinsing solution pH 7.2. Used for preparing buffer solution according to WEISE for staining of blood smears.	100 tablets
DAB-buffer tablets	**102924**	Chromogene, non-aqueous specimen	50 tablets

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Alcohols

Ordering Information: Alcohols

Product	Cat. No	Directions for use	Package size
Hydrochloric acid in ethanol	**100327**	*Used for Ziehl-Neelsen and cold staining*	*1 L, 5 L*
Reagent Alcohol	**R8382**	*Used in most histology and cytology procedures for processing.*	*1 Gal*
Reagent Alcohol 70%	**R3154**	*Used in most histology and cytology procedures for processing.*	*1 Gal*
Reagent Alcohol 95%	**R3404**	*Used in most histology and cytology procedures for processing.*	*1 Gal*

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Tissue Clearing

Ordering Information: Tissue Clearing

Product	Cat. No	Directions for use	Package size
Acetone histological grade, ≥99.5%	**534064**	*Acetone is an organic solvent widely used in the polymer and pharmaceutical industry. It is found in mammalian tissues as a by-product of metalbolism. It shows potent anticonvulsant property. Acetone in combination with tetraalkylammonium chloride forms an efficient solvent system for dissolving cellulose. The dehydration of acetone can be accomplised by pervaporation using P84 (polyimide membrane)/TAEA (tripodal amine (tris(2-aminoethyl)amine) cross-linked asymmetric flat sheet membranes. The acetone vapors can undergo photolysis in a titanium dioxide (TiO2) photocatalyst immobilized UV irradiated reactor.*	*500 mL, 4 L, 4 X 4 L, 18 L*
Chloroform	**472476**	*Chloroform, ACS reagent >99.8% (GC)*	*500 mL, 1 L, 2.5 L, 4 L, 4 x 4 L*
HistoChoice® Clearing Agent	**H2779**	*An alternative to toluene and xylene for dewaxing paraffin tissue sections. Allows tissues to retain their structure, antigenic sites and nucleic acid sites. Prepared slides are suitable for antibody probing applications and in situ hybridizations*	*1 L*
Neo-Clear™ xylene substitute	**109843**	Xylene substitute for histoprocessing, deparaffination, dehydration	5 L, 25 L
Toluene	**179418**	*Toluene, ACS reagent*	*500 mL, 6 x 500 mL, 1 L, 6 x 1 L, 2.5 L, 4 x 2.5 L, 4 L, 4 x 4 L, 18 L, 200 L*
Xylene Substitute	**A5597**	*Non-toxic xylene replacement. Compatible with all tissue processors. May not be compatible with all permanent mounting medias.*	*1 Gal, 4 X 1 Gal*
Xylene (isomeric mixture)	**108298**	Developed specifically for histological and cytological processing, deparaffination, and dehydration.	4 L
Xylenes	**534056**	*Xylenes, histological grade*	*500 mL, 4 L, 4 x 4 L, 18 L CS*

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Other Ancillary Reagents

Ordering Information: Other Ancillary Reagents

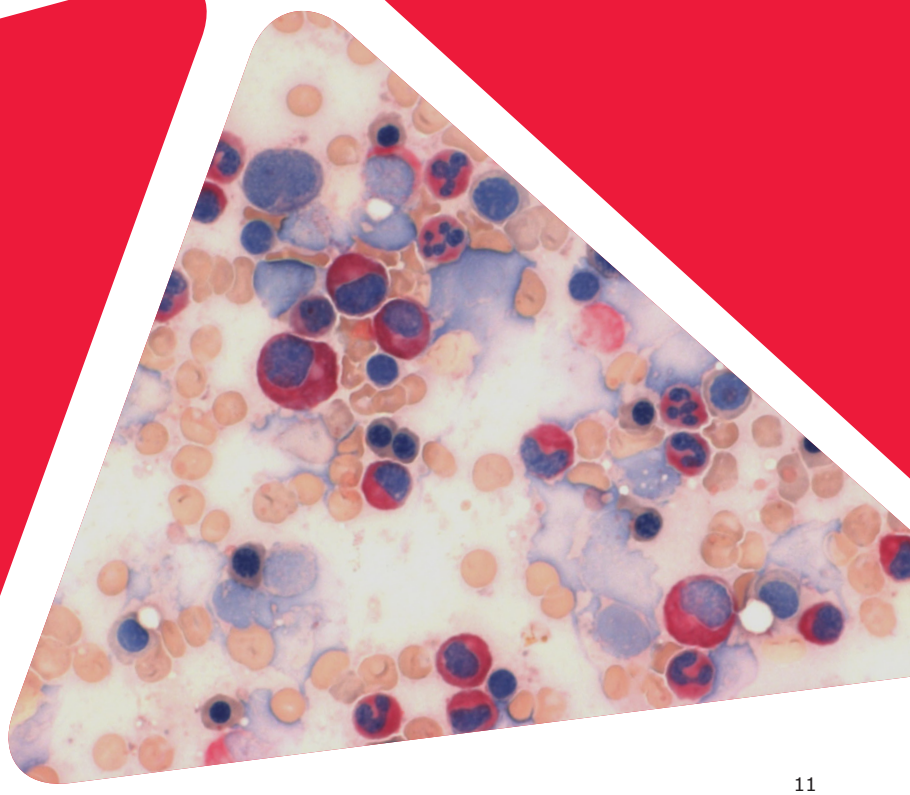
Product	Cat. No	Directions for use	Package size
Differentiation Solution	**A3179**	*Acidified alcohol solution for the differentiation of regressive hematoxylin stains.*	*1 L*
	A3429		*4 L*
Hanks' Balanced Salt solution	**H4385**	*10x concentrated. Modified, without calcium, magnesium or sodium bicarbonate. pH 6.9 when diluted according to instructions*	*100 mL, 6 x 100 mL*
Histosec™ pastilles	**111609**	Paraffin sections, contains DMSO	4 x 2.5 kg, 25 kg
Histosec™ pastilles without DMSO	**115161**	Paraffin embedding	4 x 2.5 kg, 25 kg
Poly-L-lysine solution 0.1% (w/v) in H_2O	**P8920**	*Poly-L-lysine polymers can be used in promoting cell adhesion to solid substrates, conjugation to methotrexate for increased drug transport, microencapsulation of islets, cell microencapsulation technology, microarray glass slide coating, and chromosomal preparations. Lower molecular weight poly-L-lysine (30,000-70,000) is less viscuous in solution, but higher molecular weight versions provide more attachment sites per molecule.*	*100 mL, 500 mL*
Scott's Tap Water Substitute Concentrate	**S5134**	Used as a "blueing reagent" in hematoxylin and eosin staining procedures.	6 X 100 mL
Sigmacote® siliconizing reagent for glass and other surfaces	**SL2**	*A special silicone solution in heptane that readily forms a covalent, microscopically thin film on glass, retards clotting of blood or plasma; water repellant. Ideal for glass, ceramics and fiber optics. Used to treat GC injection glass inserts. Ready to use without dilution; reusable if kept free of moisture.*	*25 mL, 100 mL*
Sputofluol™ pre-treatment solution	**108000**	Pre-treatment of specimens in the detection of mycobacteria	1 L
Türk's solution	**109277**	Counting leukocytes in the counting chamber	100 mL

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Hematology

Panoptic staining according to Pappenheim, and staining according to Giemsa, Wright and Leishman have long been standard techniques in hematological diagnostic procedures. Historically, most hematological samples were analyzed manually. Today, most samples are analyzed using semi- or fully automatic staining systems capable of determining all the parameters necessary for diagnosis. Pathological or suspect blood and bone marrow smears are then subjected to classical differential analysis using stains.

We offer a large portfolio of stains and ancillary reagents to aid in the differential diagnosis of hematological diseases. Starting from the early stains to the current stains, we have improved staining quality and simplified protocols to ensure accurate results.



Bone marrow,
NASDCL new

Staining Kits and Solutions

Ordering Information: Staining Kits and Solutions

Product	Cat. No	Directions for use	Package size
Brilliant cresyl blue solution	**101384**	Staining of reticulocytes and trichomonads for microscopy	100 mL, 25 L
Giemsa's azure eosin methylene blue solution	**109204**	Staining of blood and bone marrow smears	100 mL, 500 mL, 1 L, 2.5 L
Giemsa stain, modified	**GS500**	When blood films are stained using Giemsa Stain, the nucleus and cytoplasm of white blood cells take on characteristic blue or pink coloration. The use of purified eosin and thiazine dyes minimizes lot-to-lot variation.	500 mL
	GS1L		1 L
	GS80		2.5 L
	GS128		4 L
Giemsa Stain Solution	**R03055**	Differential blood staining	500 mL, 1 L, 4 L
Iron Stain Kit	**HT20**	Stains for loosely bound iron in RBC, bone marrow, or tissue	1 KT
May-Grünwald's eosin-methylene blue solution modified	**101424**	Staining of blood and bone marrow smears and clinical-cytological specimens	100 mL, 500 mL, 1 L, 2.5 L, 25 L
May-Grünwald Stain	**MG500**	For use in the differential staining of cellular elements of blood	500 mL
	MG1L		1 L
	MG80		2.5 L
	MG128		4 L
Reticulocyte Stain	**R4132**	Utilizes New Methylene Blue for the identification of reticulocytes in blood films.	120 mL
Sudan Black B Staining System	**380B**	Intended for the histochemical demonstration of neutrophil granules in blood or bone marrow films.	1 KT
Wright's eosin methylene blue solution	**101383**	Used for staining blood and bone marrow smears and clinical-cytological specimens	100 mL, 500 mL, 2.5 L
Wright Stain, Modified	**WS16**	Popular hematology stain used for differentially staining the cellular elements of blood. For dip, rack, and batch staining techniques.	500 mL
	WS32		1 L
	WS80		2.5 L
	WS128		4 L
Wright-Giemsa Stain, Modified	**WG16**	When blood films are stained using Wright-Giemsa Stain, the white blood cell nucleus and cytoplasm take on the characteristic blue or pink coloration. The combination of purified eosin and thiazine dyes in the product eliminates inconsistent staining and yields reproducible chromogenic responses.	500 mL
	WG32		1 L
	WG80		2.5 L
	WG128		4 L

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Fetal Hemoglobin

Fetal Hemoglobin reagents are for the acid elution, semi-quantitative determination of fetal hemoglobin in blood smears. Fetal Hemoglobin stain reagents are for "*in vitro* diagnostics use." This slide technique for demonstrating fetal hemoglobin is an improvement on the technique of Kielhauer *et al*, further developed by Oski and Naiman.

Product	Cat. No	Directions for use	Package size
Fetal Hemoglobin Kit	**285C**	Intended for the acid elution of adult hemoglobin and the semi-quantitative determination of fetal hemaglobin in blood smears.	50 assays
	285D		200 assays
Acid hematoxylin solution	**2852**	Nuclear counterstain.	100 mL
Citrate Phosphate Buffer Concentrate	**2851**	Used to elute adult hemoglobin by the procedure of Oski and Naiman, a modification of the Kleihauer Betke procedure for the demonstration of Fetal Hemoglobin.	100 mL
Eosin B solution	**2853**	Counterstain with sodium azide added as a preservative. 0.1% aqueous solution.	100 mL
Ethanol Fixative 80% v/v	**2858**	*Used as a fixative for blood films*	*240 mL*
Ethylenediaminetetraacetic acid disodium salt solution	**2854**	*EDTA and its salts are used as chelating agents; 2% solution*	*15 mL*

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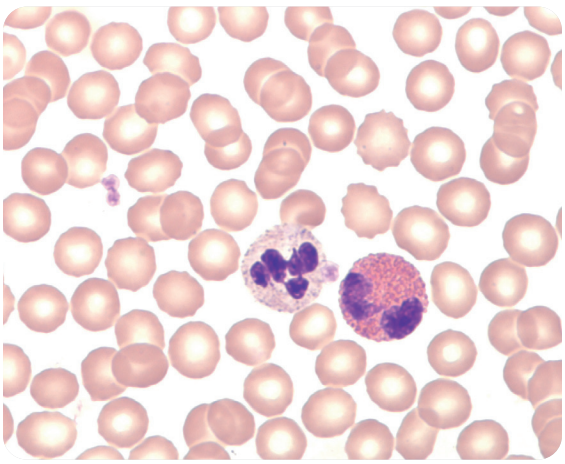
Hemacolor® Rapid Staining Kit

Hemacolor® staining kit is comprised of 3 ready-to-use solutions – a fixing solution, a red, and a blue solution. Buffer tablets are supplied with the kit; they can be used to prepare a phosphate buffer solution of pH 7.2 according to Weise which guarantees reproducible staining results.

The Hemacolor® kit produces a stain corresponding to Pappenheim. The procedure requires approximately 30 seconds and can be carried out manually or automatically. In addition to blood and bone marrow smears, Hemacolor® staining can be used in clinical cytology, e.g. for staining urine, sputum, FNAB, sperm, effusions and lavages.

Product	Cat. No	Directions for use	Package size
Hemacolor® Rapid staining of blood smears	**111674**	Staining set for hematological and clinical specimen	1 PAC (3 x 100 mL, 3 buffer tablets)
	111661		1 PAC (3 x 500 mL, 6 buffer tablets)
Hemacolor® Solution 2	**111956**	Color reagent red (eosin solution)	2.5 L
Hemacolor® Solution 3	**111957**	Color reagent blue (thiazine solution)	2.5 L

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Blood smear, Hemacolor® staining

Cytochemistry Reagents and Kits

For the cytologic demonstration of specific and non-specific leukocyte esterase. Esterase reagents are for *in vitro* diagnostic use. Cellular esterases are ubiquitous; representing a series of different enzymes acting upon select substrates. Under defined reaction conditions, it may be possible to determine hemopoietic cell types, using specific esterase substrates. The described methods provide hematologists and hematopathologists means of distinguishing granulocytes from monocytes. To perform the test, blood, bone marrow films or tissue touch preparations are incubated with either naphthol AS-D chloroacetate (NCAE) or α-naphthyl acetate (NAE) in the presence of freshly formed diazonium salt. Enzymatic hydrolysis of ester linkages liberates free naphthol compounds. These couple with the diazonium salt, forming highly colored deposits at sites of enzyme activity. Most recent procedures, including those we provide, employ stable diazonium salts. These are formed by reacting an arylamine with sodium nitrite in an acid medium. The resulting diazonium chloride (usually unstable) can then be treated with compounds such as zinc chloride, zinc sulfate or naphthalene-1-6-disulfonate, forming stable salts. These stabilizers may exert marked inhibition on some enzymatic systems, whereas the diazonium chlorides are less inhibitory. For this reason, we now provide stable solutions for Fast Red Violet LB Base, Fast Blue BB Base and Sodium Nitrite for esterase cytochemistry. To further simplify these methods, stable solutions of naphthol AS-D chloroacetate and α-naphthyl acetate are included. The availability of these stable solutions allows the customer to adjust working reagent volumes according to needs, eliminating waste.

Ordering Information: Cytochemistry Reagents and Kits

Product	Cat. No	Directions for use	Package size
α-Naphthyl Acetate (Non-Specific Esterase)	**90A1**	According to the methodology, α-naphthyl acetate is enzymatically hydrolyzed, liberating a free naphthol compound. This then couples with a diazonium compound, forming black colored deposits at sites of non-specific esterase activity. This enzyme is detected primarily in monocytes, macrophages and histocytes, and is normally absent in granulocytes. Lymphocytes may occasionally exhibit enzyme activity. A sodium fluoride inhibition procedure may be run to demonstrate monocyte inhibition. The procedure may be utilized with blood, bone marrow films, tissue-touch preparations, cytocentrifuge preparations and frozen sections. The enzyme does not survive paraffin processing.	1 KT Select reagents packaged in gelatin capsules.
	91A		1 KT formulated with all liquid reagents.
α-Naphthyl Butyrate Esterase, Lymphocyte	**181B**	Demonstration of lymphocyte staining patterns may indicate specific stages of maturation arrest associated with certain lymphoproliferative disorders. This kit is intended for demonstration of nonspecific esterase in a subset of lymphocytes for determining maturation arrest. Kits 90A1 or 91A are intended for monocyte identification.	1 KT
Acid Phosphatase, Leukocyte (TRAP) Kit	**386A**	Used to demonstrate acid phosphatase and tartrate resistant acid phosphatase (TRAP) in blood, bone marrow and tissue touch preparations.	Select reagents packaged in gelatin
	387A		Kit with all liquid reagents
Acid Phosphatase, Lymphocyte	**181A**	Demonstration of lymphocyte acid phosphatase (focal staining pattern) in cytocentrifuge or buffy coat preparations from blood, bone marrow film and tissue touch preparations typifies T-lymphocytes.	1 KT
Leukocyte Alkaline Phosphatase Kit based on naphthol AS-MX phosphate and fast blue RR salt	**85L1**	Leukocyte Alkaline Phosphatase (LAP) kits are intended for the semi-quantitative demonstration of alkaline phosphatase activity in white blood cells.	1 KT
Leukocyte Alkaline Phosphatase Kit based on naphthol AS-MX phosphate and fast blue RR salt (with citrate)	**85L2**	Leukocyte Alkaline Phosphatase (LAP) kits are intended for the semi-quantitative demonstration of alkaline phosphatase activity in white blood cells.	1 KT
Leukocyte Alkaline Phosphatase Kit based on naphthol AS-BI and fast blue BB salt	**86C**	Leukocyte Alkaline Phosphatase (LAP) kits are intended for the semi-quantitative demonstration of alkaline phosphatase activity in white blood cells.	1 KT
Leukocyte Alkaline Phosphatase Kit based on naphthol AS-BI and fast red violet LB	**86R**	Leukocyte Alkaline Phosphatase (LAP) kits are intended for the semi-quantitative demonstration of alkaline phosphatase activity in white blood cells.	1 KT

Ordering Information: Cytochemistry Reagents and Kits

Product	Cat. No	Directions for use	Package size
Naphthol AS-D Chloroacetate (Specific Esterase) Kit	**90C2**	Naphthol AS-D Chloroacetate is enzymatically hydrolyzed by "specific esterase," liberating a free naphthol compound. This then couples with a **diazonium salt**, forming highly colored deposits at sites of enzyme activity. This enzyme is usually considered specific for cells of granulocytic lineage. May be used to detect neutrophils in peripheral blood, bone marrow or tissue sections which have been paraffin embedded.	1 KT
	91C	Naphthol AS-D Chloroacetate is enzymatically hydrolyzed by "specific esterase," liberating a free naphthol compound. This then couples with a **diazonium compound**, forming highly colored deposits at sites of enzyme activity. This enzyme is usually considered specific for cells of granulocytic lineage. May be used to detect neutrophils in peripheral blood, bone marrow or tissue sections which have been paraffin embedded.	1 KT
Peroxidase (Myeloperoxidase) Leukocyte Kit	**391A**	Staining system for polymorphonucleocytes in blood or bone marrow films.	1 KT
Peroxidase (Myeloperoxidase) Leukocyte Kit Hanker-Yates substrate kit	**390A**	Intended for use in histochemical demonstration in leukocyte peroxidase.	1 KT
Sudan Black B Staining System	**380B**	Intended for the histochemical demonstration of neutrophil granules in blood or bone marrow films.	1 KT

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Cytochemical Reagents

Sigma-Aldrich®, now a part of Merck, pioneered the commercial introduction of stabilized diazonium salts and substituted naphthol substrates for the cytochemical demonstration of numerous medically important cellular enzymes. In addition to the stabilized diazonium salts, we also introduced stabilized solutions of Fast Red Violet LB base, Fast Blue BB base and Fast Garnet GBC base. The availability of stabilized base solutions allows the laboratorian to adjust working reagent volumes according to needs. Cytochemistry stains are a useful adjunct in the diagnosis of various leukemias. All kits are provided in a convenient, easy-to-use format and may be used for clinical and research purposes.

Cytochemical stains are used for localizing and determining the activity of intracellular components and enzymes. In hematology, PAS, peroxidase, esterase and phosphatase reactions play an important role in leukemia typing.

Ordering Information: Cytochemical Reagents

Product	Cat. No	Directions for use	Package size
α-Naphthyl acetate solution	**916**	12.5 mg/mL, in methanol solution with stabilizers. Reagent used in procedure 91A for the demonstration of non-specific esterase activity in leukocytes.	10 mL
α-Naphthyl Butyrate solution	**1801**	2.4 g/L alpha-naphthyl butyrate in methanol solution with solubilizers. Intended for use in the Sigma-Aldrich® α-Butyrate Esterase kit, procedure 181B.	50 mL
Acetate solution	**3863**	Intended for use in the Leukocyte Acid Phosphatase procedure, 386 or 387	50 mL
Citrate Concentrate	**3861**	Citrate buffer, 0.38 mol/L, pH 5.4 when diluted according to procedure 386. Intended for use in procedure 91A and 386A.	20 mL
Citrate Concentrated Solution	**854C**	pH approx. 3.0 when diluted 1:50. For the preparation of a 60% citrate buffered acetone solution used as a fixative for blood smears.	20 mL
Citrate Solution	**915**	Citric Acid, 18 mmol/L, sodium citrate, 9 mmol/L, sodium chloride, 12 mmol/L with surfactant. pH 3.6 +/- 0.1 at 25°C, 27mM	50 mL
Citrate Solution	**854**	*For the preparation of a 60% citrate buffered acetone solution used as a fixative for blood smears. No dilution required. Add 30 mL citrate solution to 20 mL absolute acetone for preparation of fixative.*	*200 mL*
Fast Blue BB Base solution	**917**	Fast Blue BB base, 15 mg/ml in 0.4mol/l hydrochloric acid with stabilizers.	10 mL
Fast Blue RR Salt	**FBS25**	Actual weight of the capsule will vary with dye lot and has been optimized by assay. Used as a kit component for the determination of alkaline phosphatase in Sigma-Aldrich® kits 85L1 and 85L2 and for the determination of nonspecific esterase in Sigma-Aldrich® kit 90A1. Fast Blue RR Salt has been used for the staining of alkaline phosphatase activity in cells.	10 capsules
Fast Garnet GBC Base solution	**3872**	Fast Garnet GBC base, 7.0 mg/mL, in 0.4 mol/L hydrochloric acid with stabilizer. Intended for use in Sigma-Aldrich® procedure 387 for the demonstration of Acid Phosphatase (TRAP).	10 mL
Fast Red Violet LB Base solution	**912**	Fast Red violet LB base, 15 mg/mL in 0.4 mol/L hydrochloric acid with stabilizer. Used as a kit component in procedure 91 for the demonstration of specific esterase activity in peripheral blood smears or paraffin sections.	10 mL
FBB-Alkaline solution	**863**	Fast Blue BB base, 5 mg/mL, in hydrochloric acid, 0.4 mol/L, with stabilizer. Kit component with Sigma-Aldrich® kit 86C, for the demonstration of Alkaline Phosphatase activity in peripheral blood smears or bone marrow smears.	10 mL
FRV-Alkaline solution	**862**	Fast red violet LB base, 5 mg/mL, in hydrochloric acid, 0.4 mol/L, with stabilizer. For use with Sigma-Aldrich® kit 86R, for the demonstration of alkaline phosphatase in granulocytes.	10 mL
Glutaraldehyde solution	**3802**	Used as the fixative in the Sudan Black B staining procedure 380.	75 mL
Hanks' Balanced Salt solution	**H4385**	*10×, modified, without calcium, magnesium or sodium bicarbonate. pH 6.9 when diluted according to instructions. Osmolality 240-250 mOsm/Kg.*	*100 mL, 6 X 100 mL*
Methylene Blue solution 1.4% (w/v) in 95% ethanol	**1808**	Used as a counterstain in the various Lymphocyte Enzyme kits, procedure 181	50 mL

Ordering Information: Cytochemical Reagents

Product	Cat. No	Directions for use	Package size
Naphthol AS-D Chloroacetate solution	**911**	For use in Sigma-Aldrich® procedure 91C for the demonstration of specific esterase in blood, bone marrow films, tissue touch preparations, cytocentrifuge preparations and paraffin tissue sections.	10 mL
Naphthol AS-BI Alkaline solution	**861**	Naphthol AS-BI Alkaline solution can be used as a stand alone solution or be used as a kit component for Sigma-Aldrich® Alkaline Phosphatase procedure, kits 86C and 86R.	10 mL
Naphthol AS-BI Phosphoric Acid	**3864**	Napthol AS-BI phosphoric acid, 12.5 mg/mL in N,N-dimethyl formamide. For use in Sigma-Aldrich® Acid Phosphatase procedure, 386.	40 mL
Naphthol AS-BI Phosphoric acid solution	**3871**	Napthol AS-BI phosphoric acid, 12.5 mg/mL. For use in the Sigma-Aldrich® Acid Phosphatase (TRAP) procedure, kit 387A.	10 mL
	1802	Napthol AS-BI phosphoric Acid, 4 g/L, in methanol solution with solubilizers. For use in the Sigma-Aldrich® Lymphocyte Enzyme (Acid Phosphatase) procedure, 181A.	50 mL
Naphthol AS-MX phosphate	**855**	Naphthol AS-MX phosphate, 0.25% (w/v), buffered at pH 8.6, 25ºC. For use in Sigma-Aldrich® procedure 85 (kit numbers 85L1 and 85L2) for the demonstration of Alkaline Phosphatase, Leukocyte (LAP). Substrate for the histochemical demonstration of alkaline phosphatase.	20 mL
Pararosaniline solution	**1804**	Pararosaniline, 40 g/L, in 2 mol/L hydrochloric acid. When mixed with a 4% sodium nitrite solution, a freshly hexazotized pararosaniline solution is produced. May be used in a variety of cytochemistry procedures, including Sigma-Aldrich® procedures, 181B.	15 mL
Peroxidase Indicator Reagent	**3901**	Contains p-Phenylenediamine diHCL (1 part) and catechol (2 parts). Commonly referred to as Hanker-Yates Reagent. Kit component in the Sigma-Aldrich® Leukocyte Peroxidase (Myeloperoxidase) procedure, 390A.	10 vials
Phosphate buffer solution	**1805**	Contains sodium and potassium phosphates. Intended for use in the Sigma-Aldrich® Butyrate Esterase procedure, 181B.	1 vial
Sodium nitrite solution	**914**	For use in the Naphthol AS-D Chloroacetate Esterase and Naphthyl Acetate Esterase procedures, kits 91C and 91A.	10 mL
Sodium fluoride solution	**919**	For use in inhibiting α-naphthyl acetate reaction on monocytes. Optional reagent in Sigma-Aldrich® Esterase procedure 91A.	25 mL
Tartrate Solution	**3873**	Tartrate buffer 0.335 mol/L. For use in the Acid Phosphatase (Leukocyte) Kit, 387A.	10 mL
Trizmal™ buffer	**903C**	For use in the Naphthol AS-D Chloroacetate Kit, 90C2. pH 6.3 (concentrate), 0.2 M	50 mL
	913	For use in the Naphthol AS-D Chloroacetate Esterase Kit, 91C. pH 6.3 (concentrate), 1 M	50 mL

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Ancillary Reagents for Hematology

Ordering Information: Ancillary Reagents for Hematology

Product	Cat. No	Directions for use	Package size
Buffer tablets pH 6.4	**111373**	Buffer solution/rinsing solution pH 6.4	1 PAC 100 tablets
Buffer tablets pH 6.8	**111374**	Buffer solution/rinsing solution pH 6.8	1 PAC 100 tablets
Buffer tablets pH 7.2	**109468**	Buffer solution/rinsing solution pH 7.2	1 PAC 100 tablets
Ethylenediaminetetraacetic acid disodium salt solution	**2854**	*2% concentration solution (EDTA)*	*15 mL*
Phosphate Buffer pH 6.6 at 25°C	**P8165**	*For use with Wright Stain for Geometric Data Hemastainer®.*	*1 vial, 12 vials*
Phosphate buffer pH 7.2 at 25°C for hematology and histology staining techniques	**P3288**	*For hematology and histology staining techniques. Intended for use as a buffer in various Romanowsky type staining procedures, including Wright Stain, Wright-Giemsa, Giemsa, May-Grünwald, Jenner and Leishman.*	*1 vial, 12 vials*
Rinse solution no. 2	**RS2**	Intended for use as a buffer with various Romanowky type staining procedures, specifically those performed on the Hematek. RS2 is a component of Sigma-Aldrich® product WSHT.	900 mL
Türk's solution	**109277**	Counting leukocytes in the counting chamber	100 mL, 500 mL

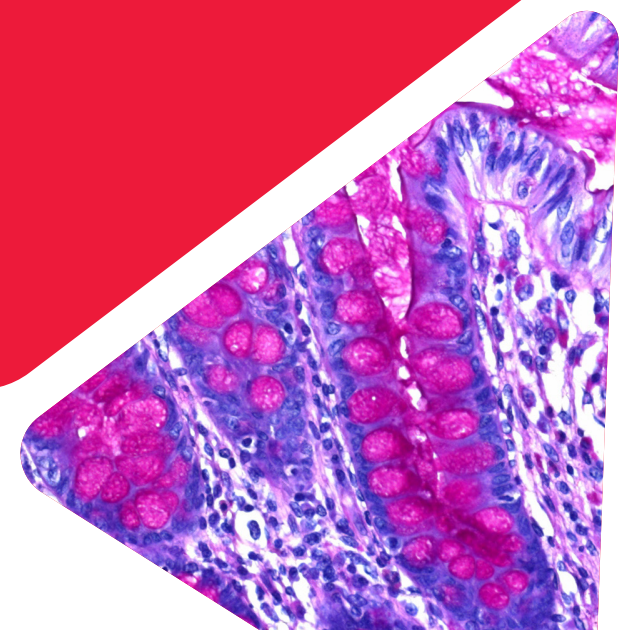
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Histology

In his book “Cellular Pathology”, in 1856, Rudolf Virchow stated quite clearly that the diagnosis and prognosis of numerous diseases can be facilitated by investigating cells and tissues under the microscope. This was the birth of histopathology in diagnostic medicine. Numerous staining techniques were initially developed in an empirical way for analyzing tissue sections; the staining and recognition of cell nuclei, cytoplasm, intra- and extra-cellular components was then made possible by the development of more and more specific staining mixtures.

Classical techniques are still adequate in 90–95% of diagnoses; in 5–10% of cases – where diagnosis cannot be regarded as being certain – additional differential staining methods must be used. These enable additional morphological criteria and functional properties to be evaluated, hence making diagnosis more reliable. Such techniques include histochemical stains, immunohistochemical methods, DNA hybridization, fluorescence in-situ hybridization, PCR, flow cytometry, etc.

We are a leading supplier of stains, chemicals and kits for use in routine histology. We offer the most commonly used special stain products with individual reagents available as prepared solutions or in convenient kit forms. For customers wishing to prepare their own staining solutions, we offer high quality dry dyes, as well as other chemicals and general purpose laboratory reagents.



Colon,
Schiff's Reagent Intense

Routine Stains

Ordering Information: Routine Stains

Product	Cat. No	Directions for use	Package size
Alcian Blue solution, 1% in 3% acetic acid, pH 2.5	**B8438**	*Used in the histological staining of acidic glycosaminoglycans (GAGs; mucopolysaccharides) that are carboxylated or sulfated. Sulfated glycosaminoglycans appear to be the preferred substrate for alcian blue at pH 2.5. Alcian blue has been used to stain hyaluronan (HA), a nonsulfated GAG, but the intensity of the staining of HA is affected by the method of tissue fixation used. Alcian blue staining of GAGs in tissue may be modified through the addition of an electrolyte such as magnesium chloride.*	*250 mL, 500 mL*
Aniline Blue solution, 2.5% in 2% acetic acid	**B8563**	*Aniline blue is used to stain collagen fibers in tissue sections using the Masson's trichrome protocol for staining multiple components. Collagen is stained blue by this method.*	*250 mL, 500 mL*
Eosin-Y solution 0.5% alcoholic	**102439**	Counterstaining in H&E	500 mL, 2.5 L
Eosin-Y solution 0.5% aqueous	**109844**	Counterstaining in H&E	1 L, 2.5 L
Eosin Y solution 1%, alcoholic	**117081**	Counterstaining in H&E	1 L
Eosin Y solution, alcoholic	**HT110116**	General purpose cytoplasmic counterstain. Certified Eosin Y, 0.5% (w/v) in acidified 90% ethanol. Used with hematoxylin and eosin staining.	500 mL
	HT110132		1 L
	HT110180		2.5 L
	HT1101128		4 L
Eosin Y solution, alcoholic, with phloxine	**HT110316**	General purpose cytoplasmic counterstain. Certified Eosin Y, 0.1% (w/v) and certified phloxine B, 0.1% (w/v) in acidified ethanol. Used with hematoxylin and eosin staining	500 mL
	HT110332		1 L
	HT110380		2.5 L
	HT1103128		4 L
Eosin Y solution, aqueous	**HT110216**	General purpose cytoplasmic counterstain. Certified Eosin Y, 0.5% (w/v) in water. Not acidified. Used with hematoxylin and eosin staining	500 mL
	HT110232		1 L
	HT110280		2.5 L
	HT1102128		4 L
Hematoxylin solution modified acc. to Gill III	**105174**	Used as a nuclear stain in progressive and regressive staining.	500 mL, 1 L, 2.5 L
Hematoxylin Solution, Gill No. 1	**GHS116**	Certified hematoxylin. Gill No. 1 formulation is used as a progressive cytology stain. Used with hematoxylin and eosin staining.	500 mL
	GHS132		1 L
	GHS1128		4 L
Hematoxylin Solution, Gill No. 2	**GHS216**	Certified hematoxylin. Gill No. 2 formulation may be used for cytology and/or histology as a progressive or regressive stain depending on length of staining time.	500 mL
	GHS232		1 L
	GHS280		2.5 L
	GHS2128		4 L
Hematoxylin Solution, Gill No. 3	**GHS316**	Certified hematoxylin. Gill No. 3 formulation may be used for cytology and/or histology as a progressive or regressive stain depending on length of staining time. Used with hematoxylin and eosin staining.	500 mL
	GHS332		1 L
	GHS380		2.5 L
	GHS3128		4 L

Ordering Information: Routine Stains

Product	Cat. No	Directions for use	Package size
Hematoxylin Solution, Harris Modified	**HHS16**	Certified hematoxylin. General purpose nuclear stain, regressive type. Used with hematoxylin and eosin staining	500 mL
	HHS32		1 L
	HHS80		2.5 L
	HHS128		4 L
Hematoxylin Solution, Mayer's	**MHS1**	Certified hematoxylin. General purpose nuclear stain, progressive type. Used with hematoxylin and eosin staining.	100 mL
	MHS16		500 mL
	MHS32		1 L
	MHS80		2.5 L
	MHS128		4 L
Weigert's iron hematoxylin solution	**HT1079**	Recommended in lengthy or acidic stain procedures. Resists decolorization better than aluminum based hematoxylin formulations.	1 set
Nuclear Fast Red solution	**N3020**	Used as a red nuclear counterstain.	100 mL
Oil Red O solution 0.5% in isopropanol	**O1391**	*Oil Red O is a lysochrome (fat-soluble dye) diazo dye used for staining of neutral triglycerides and lipids on frozen sections and some lipoproteins on paraffin sections. In histology, a supersaturated solution of oil red O in isopropanol may be used to stain fat in tissue.*	*250 mL, 500 mL*
Oil Red O solution 0.5% in propylene glycol	**O1516**	*Oil Red O is a lysochrome (fat-soluble dye) diazo dye used for staining of neutral triglycerides and lipids on frozen sections and some lipoproteins on paraffin sections. In histology, a supersaturated solution of oil red O in isopropanol may be used to stain fat in tissue.*	*250 mL, 500 mL*

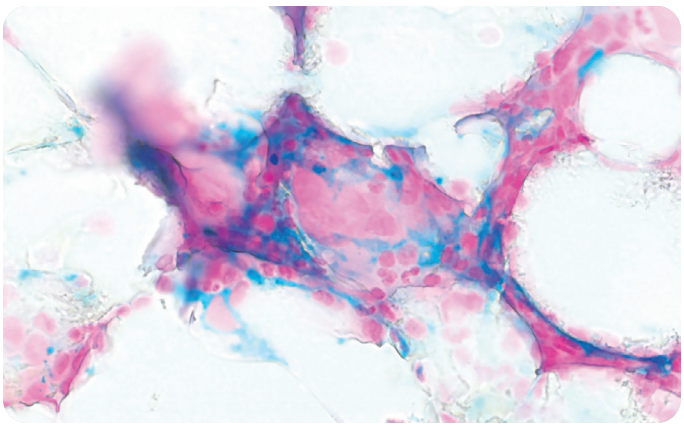
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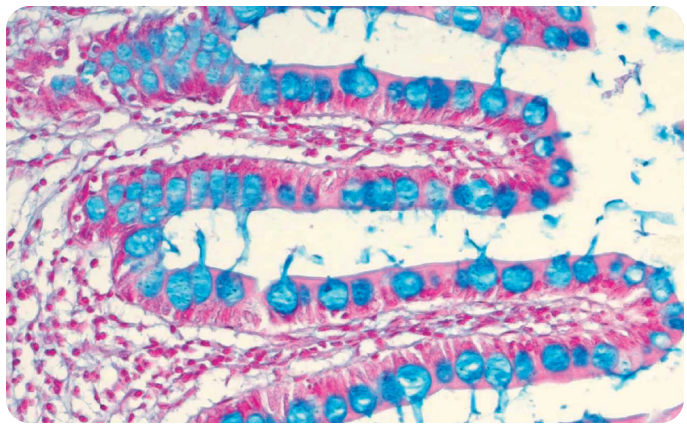
Special Stain Kits

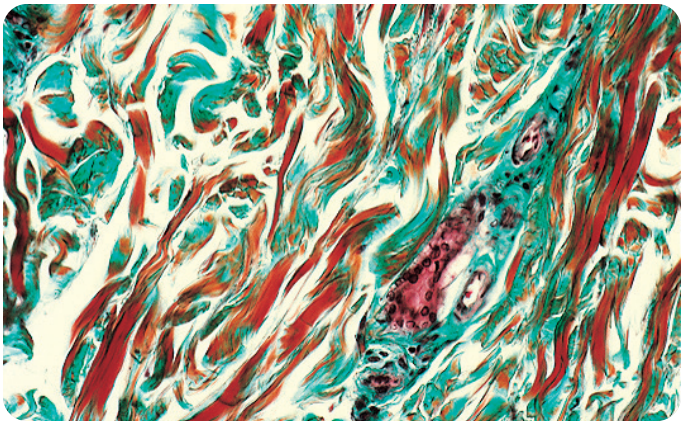
Ordering Information: Special Stain Kits

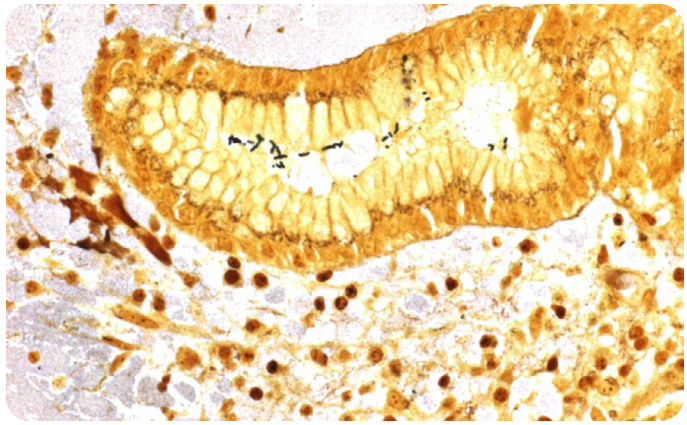
Product	Cat. No	Directions for use	Package size
Elastica van Gieson staining kit	**115974**	Demonstration of elastic fibers on connective tissue.	4 x 500 mL
HEMATOGNOST Fe™	**112084**	Detection of free ionic iron with Prussian blue method	4 x 250 mL
Masson-Goldner staining kit	**100485**	Visualization of connective tissue	4 x 500 mL
Methenamine silver plating kit acc. to Gomori	**100820**	For detection of argent-affine structures in histological tissue. Visualization of basal membranes, bacteria and fungi	1 set
PAS staining kit	**101646**	Detection of aldehyde and mucosubstance. Visualization of muco-polysaccharides	2 x 500 mL
Reticulin silver plating kit acc. to Gordon & Sweets	**100251**	Detection of reticular fibres in paraffin sections	1 set
Silver plating kit acc. to von Kossa	**100362**	Detection of microcalcification and calcium deposits in paraffin sections	1 set
Warthin-Starry silver plating kit modified	**102414**	Detection of Helicobacter pylori in paraffin sections	1 set
Weigert's iron hematoxylin kit	**115973**	Nuclear staining in connective tissue	2 x 500 mL

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Top Left: HEMATOGNOST Fe™, bone marrow
Bottom Left: Masson-Goldner stain

Top Right: Alcian blue-nuclear fast red staining, intestine
Bottom Right: Warthin-Starry, gastric mucosa (*H. pylori*)

Special Stains

Ordering Information: Special Stains

Product	Cat. No	Directions for use	Package size
Alcian blue solution	**101647**	Alcian blue PAS staining	500 mL
Alcian Blue solution 1% in 3% acetic acid, pH 2.5	**B8438**	*Used in the histological staining of acidic glycosaminoglycans (GAGs; mucopolysaccharides) that are carboxylated or sulfated.*	*250 mL, 500 mL*
Amyloid Stain, Congo Red Kit	**HT60**	Amyloid protein is detected in tissue with Congo Red, a metachromatic stain. Staining is intensified by pretreatment of tissue with alkaline sodium chloride.	1 KT
Elastic Stain Kit	**HT25A**	Modified Verhoeff Van Gieson Elastic Stain Kit	1 KT
ELASTIN color solution acc. to Weigert	**100591**	Visualisation of elastic fibers	500 mL
Fontana-Masson Stain Kit	**HT200**	Intended for use in the histological visualization of argentaffin cells and melanin in paraffin or frozen sections. Includes both a standard and microwave method for rapid staining.	1 KT
Giemsa's azure eosin methylene blue solution	**109204**	Staining of bone marrow sections and lymph node sections	100 mL, 500 mL, 1 L, 2.5 L, 25 L
Gram stain for tissue	**HT90T**	*Tissues are stained for Gram-positive organisms with crystal violet, mordanted in iodine, decolorized, stained for Gram-negative organisms with safranin O and then counterstained with tartrazine.*	*1 KT*
Iron Stain Kit	**HT20**	Deposits of loosely bound iron in erythrocytes, bone marrow, or tissue stain an intense blue when treated with acid ferrocyanide according to the well-known Prussian blue reaction.	1 KT
Mayer's hemalum solution	**109249**	Counterstaining in histology	500 mL, 1 L, 2.5 L
Methyl Green-Pyronin (MGP) solution	**HT70116**	May be useful in the identification of plasma cells and RNA in tissue sections and cytologic preparations.	500 mL
Mucicaramine stock solution	**HT3018**	Stains mucin of epithelial origin in tissue.	250 mL
	HT30116		500 mL
Nuclear fast red-aluminum sulfate solution 0.1%	**100121**	For nuclear staining and for counterstaining in histochemical reactions e.g. Berlin blue	500 mL
Oil red O color solution	**102419**	Visualisation of neutral lipids in cryosection	250 mL
Periodic Acid-Schiff (PAS) Kit	**395B**	Cellular elements which may be demonstrated with the PAS procedure include glycogen, fungal walls, basement membrane, certain epithelial sulfomucins and sialomucins, neutral mucosubstances, colloid material of the thyroid and the pars intermedia of the pituitary.	1 KT
Picrofuchsin solution acc. to van Gieson	**100199**	For connective tissue staining	500 mL
Reticulum Stain Kit	**HT102A**	Intended to demonstrate reticular fibers in paraffin sections.	1 KT
Schiff's reagent	**109033**	PAS method. Detection of polysaccharides	500 mL, 2.5 L
Schiff's reagent	**3952016**	Kit is intended for use with blood, bone marrow, tissue touch preparations or routine tissue sections.	500 mL
Silver Stain Kit, modified Steiner-Steiner	**HT101A**	Useful in identifying spirochetes and nonfilamentous bacteria.	1 KT
Silver Stain (Modified GMS) Kit	**HT100A**	Silver stain is an aid in distinguishing fungi, basement membrane and opportunistic organisms such as *Pneumocystis jiroveci* (*carinii*) in tissue sections or smears.	1 KT
Tartrazine solution	**HT3024**	Yellow counterstain suitable for a wide range of histological staining procedures	120 mL
	HT3028		250 mL
Trichrome Stain AB solution	**HT10516**	Intended for use in the study of connective tissue, muscle and collagen fibers. Stains collagen blue and muscle red. Also known as Gomori One Step Trichrome (Aniline Blue) procedure.	500 mL
Trichrome stain LG solution	**HT10316**	Intended for use in the study of connective tissue, muscle and collagen fibers. Stains collagen green. Also known as Gomori One Step Trichrome (Light Green) procedure.	500 mL
Trichrome Stain (Masson) Kit	**HT15**	May be useful in study of diseases of connective tissue and muscle characterized by fibrotic and dystrophic changes	1 KT

Ordering Information: Special Stains

Product	Cat. No	Directions for use	Package size
Van Gieson Solution Acid Fuchsin	**HT254**	Stains collagen brilliant red and muscle and cytoplasm yellow. Intended for use in the Sigma-Aldrich® Elastic Stain Kit HT25A	250 mL
Weigert's iron hematoxylin solution	**HT1079**	Recommended in lengthy or acidic stain procedures. Resists decolorization better than aluminum based hematoxylin formulations. Weigert's iron hematoxylin solution set consists of HT107 Part A and HT109 Part B.	1 set
	HT107	To be used in conjunction with HT109. Recommended in lengthy or acidic stain procedures. Resists decolorization better than aluminum based hematoxylin formulations. Part A.	500 mL, 500 mL-KP
	HT109	To be used in conjunction with HT107. Recommended in lengthy or acidic stain procedures. Resists decolorization better than aluminum based hematoxylin formulations. Part B.	500 mL, 500 mL-KP

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Control Slides

TISSUE-TROL™ Control Slides

Histology control slides are essential in the support of formal quality assurance programs. Our TISSUE-TROL™ slides are comprised of paraffin embedded tissue sections containing known characteristics and are used for monitoring staining performance in pathology laboratories. There are 25 slides per package. One slide is stained with the appropriate procedure to demonstrate the expected result.

Product	Cat. No
Acid Fast TISSUE-TROL™ Control Slides from mouse lung tissue containing Mycobacterium gordonae	*TTR001*
Amyloid TISSUE-TROL™ Control Slides from human heart tissue containing amyloid	*TTR002*
Argentaffin TISSUE-TROL™ Control Slides from human intestine tissue containing argentaffin granules NEW	*TTR013*
Elastic TISSUE-TROL™ Control Slides from human skin containing elastic fibers	*TTR003*
Fungi TISSUE-TROL™ Control Slides from mouse lung containing Candida albicans	*TTR004*
Gram Stain TISSUE-TROL™ Control Slides from mouse lung tissue containing Staphylococcus aureus and Escherichia coli	*TTR005*
Helicobacter TISSUE-TROL™ Control Slides from mouse intestine tissue containing Helicobacter pylori	*TTR006*
Iron TISSUE-TROL™ Control Slides from human liver containing intracellular or extracellular iron	*TTR007*
Melanin TISSUE-TROL™ Control Slides from human skin NEW	*TTR014*
Mucin TISSUE-TROL™ Control Slides from human intestine tissue containing mucins	*TTR008*
PAS TISSUE-TROL™ Control Slides from human kidney	*TTR009*
Reticulum TISSUE-TROL™ Control Slides from human liver tissue containing reticular fibers	*TTR010*
Spirochetes TISSUE-TROL™ Control Slides from rabbit testicle tissue containing spirochetes (Treponema pallidum)	*TTR011*
Trichrome TISSUE-TROL™ Control Slides from human liver	*TTR012*

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Ancillary Reagents for Histology

Ordering Information: Ancillary Reagents for Histology

Product	Cat. No	Directions for use	Package size
Albumin-Glycerol Fixative	**R03203**	*Mayer's fixative*	*100 mL, 500 mL*
Bouin's solution	**HT10132**	*Prepared with saturated picric acid, formaldehyde and acetic acid. A fixative for preserving soft and delicate structures. Used as a mordant in various trichrome procedures.*	*1 L*
	HT101128		*4 L*
Differentiation Solution	**A3179**	*Acidified alcohol solution for the differentiation of regressive hematoxylin stains.*	*1 L*
	A3429		*4 L*
Histosec™ pastilles	**111609**	Paraffin embedding, contains DMSO	4 x 2.5 kg, 25 kg
Histosec™ pastilles (without DMSO)	**115161**	Paraffin embedding	4 x 2.5 kg, 25 kg
Paraffin pastilles	**107164**	Paraffin for histology	4 x 2.5 kg
Phosphate buffer pH 7.2 at 25°C	**P3288**	*Intended for use as a buffer in various Romanowsky type staining procedures, including Wright Stain, Wright-Giemsa, Giemsa, May-Grünwald, Jenner and Leishman. Used in hematology and histology staining techniques.*	*1 vial, 12 vials*
Scott's Tap Water Substitute Concentrate	**S5134**	Used as a "blueing reagent" in hematoxylin and eosin staining procedures.	6 X 100 mL
Xylene (isomeric mixture)	**108298**	Developed specifically for histological and cytological processing, deparaffination, and dehydration.	4 L

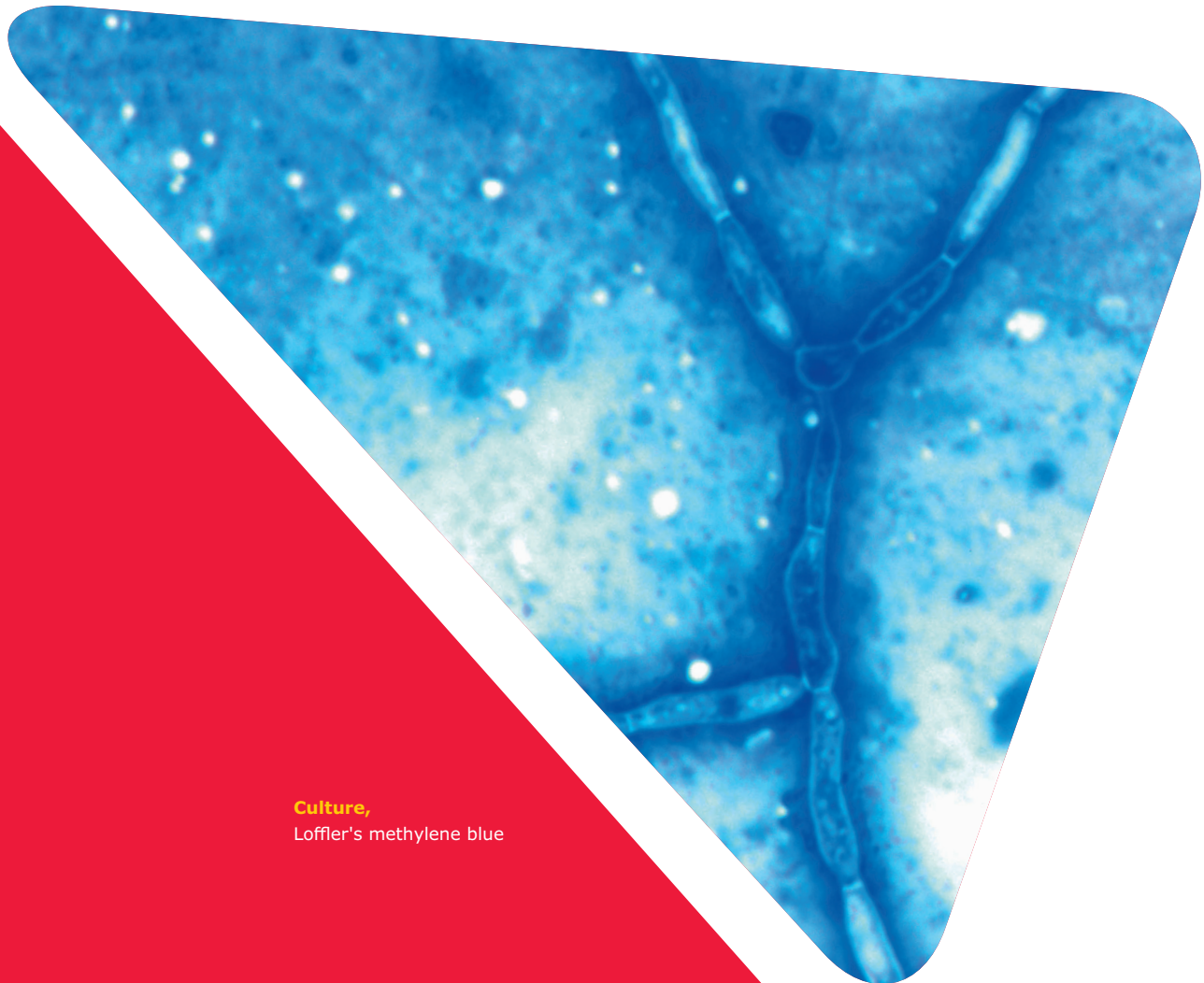
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Microbiology

Microbiology is a unique discipline within the scope of clinical diagnosis and industrial quality control. In microbiology, the principle goal is to find and identify bacteria and microorganisms in order to determine the correct course of action. Gram staining and the detection of acid-fast bacteria (AFB) are of particular importance as a preliminary evaluation, for sub-classification and identification of high risk strains. Subsequent stains and dyes can be used for further classification and as an aide for applicable microscopic analysis.

We offer high-quality, high-capacity stains and ancillary reagents for microbiology. Our extensive microbiology portfolio includes ready-to-use staining kits and solutions that guarantee reliable and brilliant results. We offer the most commonly used microbiology stain products with individual reagents available as prepared solutions or in convenient kit form.



Culture,
Loffler's methylene blue

Staining Solutions and Kits

Ordering Information: Staining Solutions and Kits

Product	Cat. No	Directions for use	Package size
Crystal violet solution	**HT901**	Crystal violet is used for Gram stains and is a kit component of Gram stain kits HT90A and HT90T (for staining of heat-fixed films and tissue, respectively).	8 oz
	HT90132		1 L
Crystal violet solution 1%, aqueous solution	**V5265**	*Crystal violet solution for use in Brown-Hopps method for Gram-positive and Gram-negative bacterial staining.*	*250 mL, 500 mL*
Decolorizer Solution	**HT903**	Isopropyl alcohol, 75%; acetone, 25%.	8 oz
Giemsa	**GS500**	Can be used for staining *rickettsia* and fungus	500 mL
	GS1L		1 L
	GS80		2.5 L
	GS128		4 L
Giemsa's azure eosin methylene blue solution	**109204**	Used for the staining of blood and bone-marrow smears	100 mL, 500 mL, 1 L, 2.5 L, 25 L
Gram Stain for films	**HT90A**	Films are stained for Gram-positive organisms with crystal violet, mordanted in iodine, decolorized and then stained for Gram-negative organisms with safranin O. For delineating Gram-positive and Gram-negative organisms in films.	1 KT
Gram Stain for tissue	**HT90T**	Tissues are stained for Gram-positive organisms with crystal violet, mordanted in iodine, decolorized, stained for Gram-negative organisms with safranin O and then counterstained with tartrazine. For delineating Gram-positive and Gram-negative organisms in paraffin embedded tissues.	1 KT
Gram's decolorizing solution	**110218**	A mixture of ethanol and acetone	500 mL, 2.5 L
Gram's iodine solution	**HT902**	An iodine and potassium iodide soultion commonly added to form a large insoluble complex with crystal violet.	8 oz
	HT90232		1 L
Gram's safranine solution	**109217**	Counterstain for Gram stain	500 mL, 2.5 L
Lactophenol blue solution	**113741**	Staining of fungi add 1 or 2 drops of lactophenol blue solution to the specimen; microscope after approx. 2 min	100 mL
Löffler's methylene blue solution	**101287**	Methylene blue staining is suitable for general bacteriological stainings, e.g. acid-fast bacteria.	100 mL, 500 mL, 2.5 L
Lugol's solution	**100567**	Stabilized with PVP. Used in Gram stain.	1 L, 2.5 L
Lugol's solution (diluted iodine-potassium iodide solution)	**109261**	For Gram staining	1 L, 2.5 L
Silver Stain Kit, Modified Steiner-Steiner	**HT101A**	Intended for the demonstration of spirochetes and nonfilamentous bacteria such as spiroshetes in sections of paraffin-embedded tissue.	1 KT
Silver Stain (Modified GMS) Kit	**HT100A**	Silver stain is an aid in distinguishing fungi, basement membrane and opportunistic organisms such as *Pneumocystis jiroveci* (*carinii*) in tissue sections or smears.	1 KT

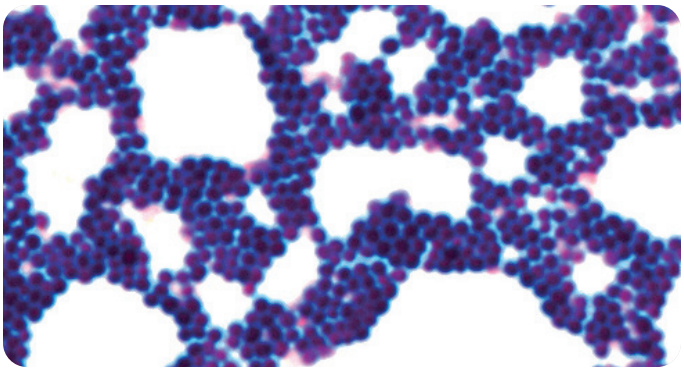
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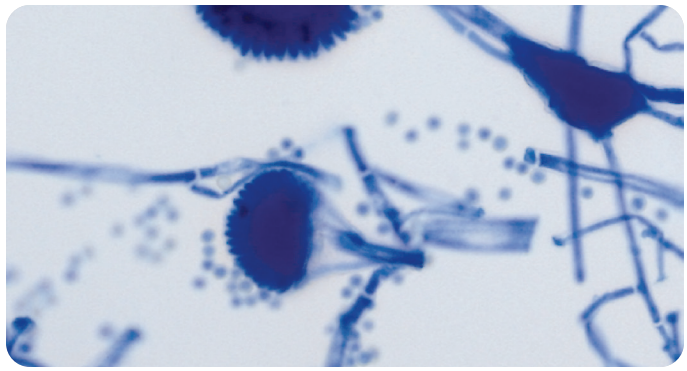
Staining of acid-fast bacteria (AFB)

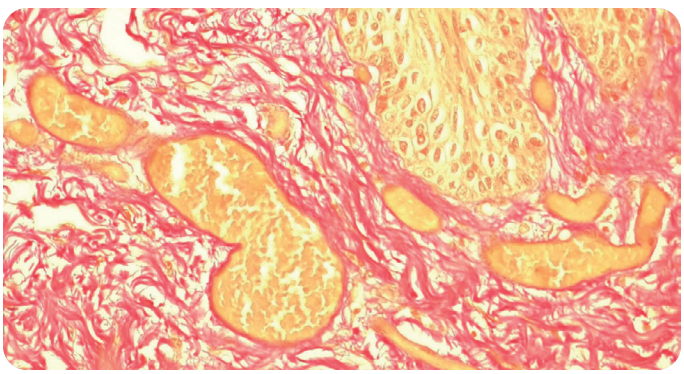
Ordering Information: Staining of acid-fast bacteria (AFB)

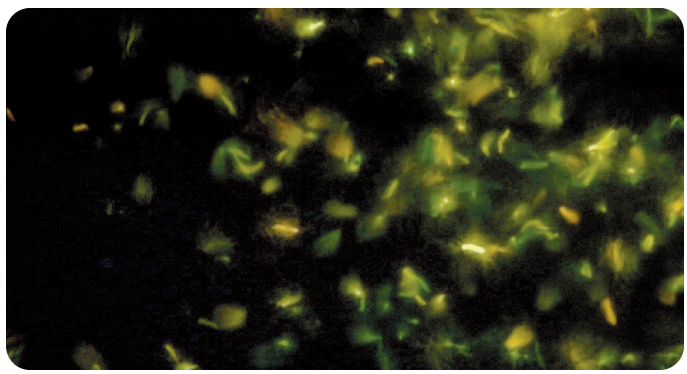
Product	Cat. No	Directions for use	Package size
Carbol-fuchsin solution	**HT8018**	Pararosaniline (certified), 0.85%; phenol, 2.5%; glycerol, 5%; DMSO, 5% and ethyl alcohol. Intended for use in the Acid Fast Stain, procedure HT80 with Malachite Green counterstain Catalog HT80-2.	250 mL
	HT80116		500 mL
Malachite Green solution	**HT8028**	Intended for use with Carbol-fuchsin (HT80-1) in Sigma-Aldrich® Acid Fast Stain, HT80. Acts as both a counterstain and a differentiator.	250 mL
	HT80216		500 mL
Hydrochloric acid in ethanol	**100327**	To be used in Ziehl-Neelsen staining	1 L, 5 L
Sputofluol™ pre-treatement solution	**108000**	Pre-treatment of specimens in the detection of acid-fast bacteria AFB)	1 L
AFB-Color Carbol fuchsin solution	**108512**	Cold staining of acid-fast bacteria AFB)	500 mL, 2.5 L
AFB-Color modified	**100497**	Staining kit for the detection of acid-fast bacteria (AFB) by hot staining method. Result: acid-fast bacteria: red, background: blue	1 PAC
AFB-Fluor	**109093**	Fluorescence microscopical detection of acid-fast bacteria (AFB). Result: acid-fast bacteria: red-orange or yellow-green fluorescence, background: dark to black	6 x 500 mL
AFB-Fluor phenol-free	**101597**	Fluorescence staining kit for the microscopic investigation of acid-fast bacteria (AFB). Result: acid-fast bacteria: red-orange or yellow-green fluorescence, background: dark to black	1 PAC, 1 set
Ziehl-Neelsen carbol-fuchsin solution	**109215**	Hot staining for acid-fast bacteria, counter-staining with methylene blue. Result: acid-fast bacteria: red, background: blue	100 mL, 500 mL, 2.5 L, 25 L

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Top Left: Gram color modified culture
Bottom Left: Fuchsin stain, tongue

Top Right: Culture, smear, Lactophenol blue staining
Bottom Right: TB-Fluor phenol-free

Control Slides

TISSUE-TROL™ Control Slides

Product	Cat. No
Acid Fast TISSUE-TROL™ Control Slides from mouse lung tissue containing Mycobacterium gordonae	*TTR001*
Fungi TISSUE-TROL™ Control Slides from mouse lung containing Candida albicans	*TTR004*
Gram Stain TISSUE-TROL™ Control Slides from mouse lung tissue containing Staphylococcus aureus and Escherichia coli	*TTR005*
Helicobacter TISSUE-TROL™ Control Slides from mouse intestine tissue containing Helicobacter pylori	*TTR006*
Spirochetes TISSUE-TROL™ Control Slides from rabbit testicle tissue containing spirochetes (Treponema pallidum)	*TTR011*

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Cytology

Cytology is a technique used to differentiate tumors from other inflammatory or degenerative diseases. The advantages of the method are the ease of obtaining material and the relative ease of processing it. Cytology is highly specific and accurate. These advantages make it suitable for screening purposes and have in fact led to a significant reduction in the incidence of cervical cancer. The acceptance of gynecological cytology as a valuable discipline in cancer screening is principally due to the work of Dr. George N. Papanicolaou (1883 – 1962), the “Father of modern cytology.”

We provide stains and reagents needed to discern cytological samples to better understand inflammatory degenerative and neoplastic processes. Starting from the initial work of Dr. George Papanicolaou, for decades we have improved staining quality and simplified procedures to ensure accurate gynecological cytology.



Gynecological smear
Papanicolaou's staining

Staining Solutions

Ordering Information: Staining Solutions

Product	Cat. No	Directions for use	Package size
Blueing Reagent	**XX0773**	*A buffered solution for bluing hematoxylin. Contains glutaraldehyde.*	*20 L*
Giemsa's azure eosin methylene blue solution	**109204**	Staining of non-gynecological specimens.	100 mL, 500 mL, 1 L, 2.5 L, 25 L
Hematoxylin Solution, Gill No. 1	**GHS116**	Certified hematoxylin. Gill No. 1 formulation is used as a progressive cytology stain. Used with hematoxylin and eosin staining.	500 mL
	GHS132		1 L
	GHS1128		4 L
Hematoxylin Solution, Gill No. 2	**GHS216**	Certified hematoxylin. Gill formulation No. 2 may be used for cytology and/or histology as a progressive or regressive stain depending on length of staining time.	500 mL
	GHS232		1 L
	GHS280		2.5 L
	GHS2128		4 L
Hematoxylin Solution, Harris Modified	**HHS16**	Certified hematoxylin. General purpose nuclear stain, regressive type. Used with hematoxylin and eosin staining.	500 mL
	HHS32		1 L
	HHS80		2.5 L
	HHS128		4 L
Papanicolaou Stain , EA 50	**HT40316**	Certified eosin Y, 0.23% w/v, certified fast green FCF, 0.08% w/v, certified bismarck brown, 0.05%, phosphotungstic acid, 0.2% w/v, in denatured alcohol. Papanicolaou stain imparts a characteristic range of coloration to exfoliative cells of vaginal, cervical, prostatic and other body secretions, allowing critical examination of nuclei and cytoplasmic components.	500 mL (50 EA)
	HT40332		1 L (50 EA)
	HT403128		4 L (50 EA)
Papanicolaou Stain , EA 65	**HT40432**	Certified eosin Y, 0.23% w/v, certified fast green FCF, 0.01% w/v, certified bismarck brown, 0.05%, phosphotungstic acid, 0.2% w/v, in denatured alcohol. Papanicolaou stain imparts a characteristic range of coloration to exfoliative cells of vaginal, cervical, prostatic and other body secretions, allowing critical examination of nuclei and cytoplasmic components.	1 L (65 EA)
Papanicolaou Stain, Modified EA	**HT40232**	Certified eosin Y, 0.25% w/v, certified fast green FCF, 0.004% w/v, phosphotungstic acid, 0.4% w/v, in denatured alcohol with stabilizer	1 L
Papanicolaou Stain, OG-6	**HT40116**	Certified orange G, 0.3% w/v, phosphotungstic acid, 0.015% w/v, in denatured alcohol	500 mL
	HT40132		1 L
	HT40180		2.5 L
	HT401128		4 L
Papanicolaou's solution 1a Harris' hematoxylin solution	**109253**	Nuclear staining	500 mL, 1 L, 2.5 L
Papanicolaou's solution 1b Hematoxylin solution S	**109254**	Nuclear staining	500 mL, 2.5 L
Papanicolaou's solution 2a Orange G solution (OG 6)	**106888**	Cytoplasm staining of mature and keratinized cells	500 mL, 1 L, 2.5 L
Papanicolaou's solution 2b Orange II solution	**106887**	Cytoplasm staining of mature and keratinized cells	500 mL, 2.5 L
Papanicolaou's solution 3a polychromatic solution EA 31	**109271**	Cytoplasm staining	500 mL, 2.5 L
Papanicolaou's solution 3b polychromatic solution EA 50	**109272**	Cytoplasm staining	500 mL, 1 L, 2.5 L
Papanicolaou's solution 3c polychromatic solution EA 65	**109270**	Cytoplasm staining esp. for non-gynecological specimen, color effect light brown to red	100 mL
Papanicolaou's solution 3d polychromatic solution EA 65	**109269**	Cytoplasm staining esp. for non-gynecological specimens, color effect pale blue-green-pink	100 mL, 2.5 L
Shorr staining solution	**109275**	Diagnosis of hormonal disorders	500 mL

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Cytocolor™ and Neo-Cytocolor™ Rapid Staining Kits

Cytocolor™ rapid staining kit is capable of producing stains within 3 minutes. These stains provide complete information on integrity and additional information on hormone status and vaginal flora in gynecological smears. The difference between these and classical Papanicolaou stains is that Cytocolor™ rapid staining kit requires no orange stain; both mature and keratinized cells appear pink instead of orange. Neo-Cytocolor™ rapid staining kit also produces a stained slide with complete information on integrity, hormonal status and bacterial condition. The primary benefit of the Neo-Cytocolor™ rapid staining kit is that it is a greener, more user-friendly option due to the inclusion of the Neo-Clear™ xylene substitute. The kit has a capacity for up to 1,000 slides and a shelf life of 3 years.

Product	Cat. No	Directions for use	Package size
Cytocolor™ Rapid Staining Kit cytological standard stain acc. to Szczepanik	**115355**	Rapid staining kit for modified Papanicolaou's staining	1 pack 500 mL mod. hematoxylin solution 500 mL mod. polychrome solution, 3 x 500 mL 2-propanol GR, 500 mL xylene

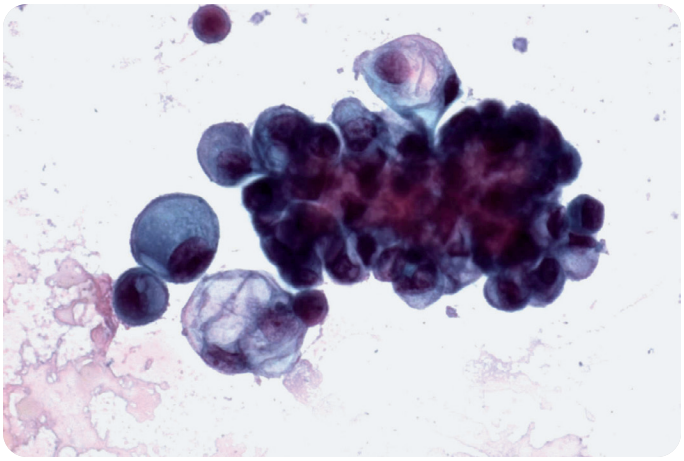
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Ancillary Reagents

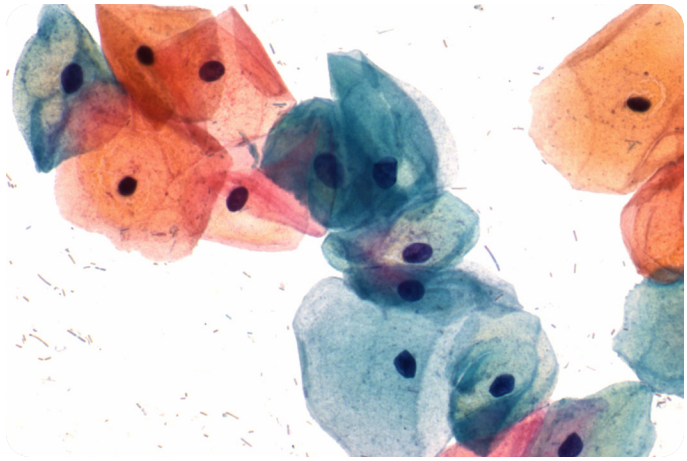
Ordering Information: Ancillary Reagents

Product	Cat. No	Directions for use	Package size
M-FIX® spray fixative	**103981**	Spray fixative for cytodiagnosis	100 mL, 1 L
M-GLAS® liquid cover glass	**103973**	Mounting agent for the even coating of cytological specimens instead of cover slips (contains toluene)	500 mL

Italics refer to products available for research use only. Not for use in diagnostic procedures.



Pleural effusion, smear, Cytocolor™ rapid staining kit



Papanicolaou stain

Stains and Dyes

Dyes are used in microscopy whenever cell and tissue components in animal and plant material have to be visualized. Frequently, such optical visualization techniques are the only methods of identifying, and differentiating, such tissues. Microscopy dyes are used mainly in histology, cytology and microbiology but also in analyzing textile fibers, paper and other technical products. They have even been used for identifying the various layers of paintings.

Dyes can be roughly divided into acid and basic dyes and synthetic and natural dyes. The method introduced by Paul Ehrlich for using mixtures of acid and basic components was an important milestone in the development of staining techniques. The basic dyes (methylene blue, azure) stain the acid components of the genetic material; and the acid dyes stain mainly the basic proteins.

The subsequent microscopic picture with its color intensity and contrast is essentially determined by the quality of the solution (pH, concentration, stability, etc.) as well as the technical procedure used.

We offer a broad range of staining methods for the microscopic analysis of animal, plant and human tissue, as well as bacteriological smears. We offer one of the largest sections of stains and dyes in the world used across many industries for a variety of applications. Our solutions can be purchased as ready-to-use reagents or for preparations with dry dyes.



Dry powder dyes

Certistain® Dyes

Certistain® dyes for microscopy are analyzed chemically according, to strict specifications and tested for their functional performance. The dyes guarantee consistent performance, batch to batch, and physical product specifications including, test protocols of each dye are available upon request.

Ordering Information: Certistain® Dyes

Product	Cat. No	Directions for use	Package size	CAS No.	Color Index-No.
Acridine orange $ZnCl_2$	**115931**	Vital and fluorescent stain: 0.5% in physiological sodium chloride solution	25 g	10127-02-3	46005
Alcian blue 8 GX	**105234**	Acid mucosubstances: 1% in acetic acid (3%)	10 g	33864-99-2	74240
Brilliant cresyl blue $ZnCl_2$	**101368**	Reticulocytes: 1:80-1:200 in physiological saline solution	25 g	51716-96-2	N/A
Brilliant green (hydrogen sulfate)	**101374**	Spores: 5% aqueous solution	25 g	663-03-4	42040
Carmine	**115933**	Histological sections: 3.6% in aqueous saturated lithium carbonate solution (boil for 15 minutes and add 1 g, of thymol)	5 g, 25 g	1390-65-4	N/A
Cresyl violet (acetate)	**105235**	Staining of nuclei, Nissl bodies, Helicobacter, and the X chromosome.	25 g	10510-54-0	N/A
Crystal violet	**115940**	Gram staining: dissolve 2 g, in 20 mL ethanol (96%) and mix with 80 mL of a 1% aqueous ammonium oxalate solution	25 g, 100 g, 1 kg	548-62-9	42555
Eosin B (bluish)	**115934**	Cell plasma: 0.1%–1% aqueous solution	25 g	548-24-3	45400
Eosin Y (yellowish)	**115935**	Histological sections: 0.1% and 0.5% aqueous solution	25 g, 100 g, 1 kg	17372-87-1	45380
Erythrosin B	**115936**	Stains plasma proteins, cytoplasmic elements and erythrocytes.	10 g, 25 g	16423-68-0	45430
Fast green FCF	**104022**	Liver, kidney, intestine, and placenta: 0.2% solution in ethanol (95%)	25 g	2353-45-9	42053
Fuchsin	**115937**	Cell nuclei, bacteria: 10% solution in ethanol 96%	25 g, 100 g, 1 kg	632-99-5	42510
Fuchsin acid	**105231**	Connective tissue for histological sections	25 g	3244-88-0	42685
Hematoxylin cryst.	**104302**	Nuclear staining	25 g, 100 g, 1 kg	517-28-2	75290
Hematoxylin monohydrate	**115938**	Nuclear staining	25 g, 100 g, 1 kg	N/A	75290
Light green SF (yellowish)	**115941**	Trichrome: add solution in ethanol (96%)	25 g, 100 g	5141-20-8	42095
Malachite green oxalate	**115942**	Spores: 5% aqueous solution	25 g, 100 g, 1 kg	2437-29-8	42000
Methyl green $ZnCl_2$	**115944**	Chromatin: dissolve 2 g, in 100 mL of distilled water, extract with chloroform, and filter the aqueous staining solution	25 g	7114-03-6	42590
Methylene blue	**115943**	Bacteria: mix 0.5 g of Eosin Y (yellowish) with 0.5 g of Methylene blue in 100 mL of distilled water. Dissolve in methonal	25 g, 100 g, 1 kg	N/A	52015
Neutral red	**101376**	Leukocytes: 0.5 g of solution dissolved in 10 mL of distilled water	25 g	553-24-2	50040
New fuchsin	**105226**	Staining of mycobacteria acc. to Ziehl-Neelsen	100 g	3248-91-7	42520
Nigrosine	**115924**	Bacteria: boil 10 g in 100 mL water for 10 min., leave to cool and add 0.5 mL formaldehyde solution (37%)	25 g	101357-32-8	50420

Ordering Information: Certistain® Dyes

Product	Cat. No	Directions for use	Package size	CAS No.	Color Index-No.
Nile blue (hydrogen sulfate)	**115946**	Fat liver, melanins, and lipofuscins: dissolve 0.05 g in 1% H_2SO_4 solution	25 g	16650-83-2	51180
Nuclear fast red	**115939**	Histological sections: stir 0.2 g of solution into 200 mL boiling aluminium sulfate solution 5%, aqueous. Boil for 5-10 minutes. Cool and then filter staining solution.	25 g	6409-77-4	60760
Orange G	**115925**	Cell plasma: dissolve 0.5 g of solution with 100 mL of ethanol. Add 0.015 g of tungstophosphoric acid hydrate and stir until dissolved.	25 g	1936-15-8	16230
Orcein	**107100**	Histological sections: dissolve 0.4 g in 99 mL ethanol (70%) and add concentrated hydrochloric acid	5 g, 25 g	N/A	N/A
Pararosaniline (chloride)	**107509**	Clear, colorless solution as Schiff's reagent	25 g, 100 g	569-61-9	42500
Phloxin B	**115926**	Histological sections: mix 5% aqueous solution with 1% aqueous borax methylene blue solution in a ratio of 1 + 9	25 g, 5 kg	18472-87-2	45410
Ponceau S	**115927**	Histological sections: mix 10 mL of a 1% aqueous solution with 90 mL of a saturated picric acid solution and add 1.5 mL of a 2% acetic acid solution	25 g	6226-79-5	27195
Pyronine G	**107518**	Histological sections: mix 12.5 mL of a 2% aqueous solution (extracted by chloroform) with 7.5 mL of a 2% aqueous methyl green solution (extracted by chloroform) and add 30 mL distilled water	25 g	92-32-0	45005
Safranine O	**115948**	Gram staining: Mix 2.5 g of solution into ethanol (96%). Dissolve and filter.	25 g	477-73-6	50240
Toluidine blue O	**115930**	Histological sections: 0.1% aqueous solution	25 g	92-31-9	52040

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Biological Stain Commission Certified Stains

These products are certified by the Biological Stain Commission (BSC). Among its many objectives, the BSC, located at the University of Rochester Medical Center, Rochester, NY, insures the quality of dyes through independent testing, according to appropriately rigorous chemical and performance criteria.

Ordering Information: Biological Stain Commission Certified Stains

Product	Cat. No	Directions for use	Package size	CAS No.	Color Index-No.
Acid Fuchsin calcium salt	**857408**	*Certified for use in Van Gieson connective tissue stain. Dye content ≥60%*	*25 g, 100 g*	*123334-10-1*	*N/A*
Alcian Blue 8GX	**A3157**	*Acian Blue 8GX is a cationic dye and forms insoluble complexes with acidic glycosaminoglycans, thereby helping in the quantitative determination of glycosaminoglycans. It can also be used for the staining of bone and cartilage. Certified for use in staining in Mowry's pH 2.5 method, in Scott's pH 5.7 method, and in Kreyberg's method for keratin and mucin.*	*10 g, 25 g*	*33864-99-2*	*74240*
Alizarin Red S	**A5533**	*Alizarin Red S is used for the staining of cartilage and bone*	*25 g*	*130-22-3*	*58005*
Aniline Blue diammonium salt	**415049**	*Certified for use in Mallory's connective tissue stain and Gomori's one-step trichrome.*	*25 g, 50 g*	*66687-07-8*	*N/A*
Auramine O	**A9655**	*Certified for use by fluorescence microscopy in Churukian's modification of Truant's fluorescent method for acid fast bacilli on paraffin sections. Dye content ≥80%*	*25 g*	*2465-27-2*	*41000*

Ordering Information: Biological Stain Commission Certified Stains

Product	Cat. No	Directions for use	Package size	CAS No.	Color Index-No.
Azure B	**A4043**	*Azure B has been used for the staining of chromosomes*	*5 g, 25 g*	*531-55-5*	*52010*
Azure A chloride	**A2918**	*Certified for use in Lillie's modified Nocht's method for paraffin sections and the NCCLS method for blood smears.*	*25 g*	*531-53-3*	*52005*
Basic Fuchsin special for flagella	**B0904**	*Certified for use in Leifson's flagella stain.*	*5 g, 25 g*	*58969-01-0*	*N/A*
Basic Fuchsin	**857343**	*Combining basic fuchsin with sulfurous acid results in the formation of fuchsin sulfurous acid, also referred to as Feulgen reagent or Schiff's reagent. This reagent is responsible for the staining of chromosomal DNA. Basic fuchsin is also used for the staining of lignin in plant tissue samples. Dye content ≥88%*	*25 g, 100 g*	*569-61-9*	*42500*
Bismarck Brown Y	**861111**	*Bismarck Brown Y is used for the staining of plant samples including: stem, root, starch granules and epidermis. Dye content 50%*	*25 g, 100 g*	*10114-58-6*	*21000*
Brilliant Cresyl Blue ALD	**B5388**	*Brilliant Cresyl Blue ALD has been used for the selection of oocytes. It has also been used for the selection of cumulus-oocyte complexes (COCs).*	*10 g*	*81029-05-2*	*51010*
Brilliant Green	**B4014**	*Certified for bacteriostatic potency. Tested as a bacteriostatic agent against a spore-former and two members of the colon-typhoid group.*	*25 g*	*633-03-4*	*42040*
Carmine	**C6152**	*Carmine has been used for the staining of mammary glands. It has also been used for the staining of chromosomes.*	*25 g*	*1390-65-4*	*75470*
Congo Red, BioXtra	**C6277**	*Congo Red has been used for the staining of β amyloid peptides*	*25 g*	*573-58-0*	*22120*
Cresyl Violet acetate	**C5042**	*Cresyl Violet acetate has been used in Nissl staining of sections from spinal cord and brain.*	*10 g*	*10510-54-0*	*N/A*
Crystal Violet	**C0775**	*Crystal Violet is used as an active component, primary stain, of Gram stain for differentiation of Gram-negative versus Gram-positive bacteria. It has been used to check cell viability. It has also been used for the staining of cells to study cell migration and invasion.*	*25 g, 100 g*	*548-62-9*	*42555*
Darrow Red	**211885**	*Certified for the staining of neuron cell bodies in paraffin or frozen sections of formalin fixed brain or spinal cord. Dye content ≥65%*	*25 g*	*15391-59-0 (free base)*	*N/A*
Eosin B	**861006**	*Eosin B has been used for the histological analysis of anal sphincter sections obtained from rats. It has been used along with Mayer's hematoxylin for the staining of triangularis sterni muscle sections. It has been used along with hematoxylin for the staining of different tissue sections obtained from mouse. Dye content 90%*	*10 g, 25 g, 100 g*	*548-24-3*	*45400*
Eosin Y disodium salt	**E4382**	*Eosin Y disodium salt has been used as a counterstain in immunocytochemistry and immunohistochemistry.*	*25 g, 100 g*	*17372-87-1*	*45380*
Erythrosin B	**198269**	*Erythrosin B has been used as a dye in fluorescence lifetime imaging. Dye content 90%*	*25 g*	*16423-68-0*	*45430*
Erythrosin extra bluish	**E8886**	*Certified for use in the Jackson stain for plant anatomy; counterstain for alum hematoxylin; Kreyberg's method for keratin and mucus.*	*25 g*	*16423-68-0*	*45430*
Ethyl eosin	**199540**	*Certified for use in the Stoval and Black method for demonstrating Negri bodies in the central nervous system of rabid animals.*	*5 g, 25 g*	*6359-05-3*	*45386*
Fast Green FCF	**F7258**	*Certified for the safranin-fast green FCF stain for plant cells; as a substitute for aniline blue in Gomori's one-step trichrome procedure.*	*25 g*	*2353-45-9*	*42053*

Ordering Information: Biological Stain Commission Certified Stains

Product	Cat. No	Directions for use	Package size	CAS No.	Color Index-No.
Giemsa stain	**G5637**	*Giemsa stain has been used for the staining of cells and blood films.*	*5 g, 25 g*	*51811-82-6*	*N/A*
Hematoxylin	**H3136**	*Certified for use in Weigert's iron hematoxylin, Mayer's hemalum, Harris hemalum and in Heidenhain's technique*	*25 g, 100 g*	*517-28-2*	*75290*
Indigo carmine	**131164**	*Indigo carmine has been used to investigate its effects on ozone production by neutrophils. Dye content 85%*	*25 g, 100g*	*860-22-0*	*73015*
Janus Green B	**201677**	*Used to specifically stain mitochondria in living cells, biomolecules, nucleic acids and chromosomes. In addition, it is also used to stain various living organisms including fungi, yeast cell, brain, spinal cord, sperms and tissue culture monolayer. It also facilitates diagnostic assays and diagnosis related to amyloid accumulation. Dye content 65%*	*5 g, 25 g*	*2869-83-2*	*11050*
Jenner's stain	**J1875**	*Certified for use in staining blood smears.*	*25 g*	*62851-42-7*	*N/A*
Light Green SF Yellowish	**L1886**	*Certified for use as a cytological counterstain and as a substitute for aniline blue in Gomori's one-step trichrome procedure.*	*25 g*	*5141-20-8*	*42095*
Malachite Green oxalate salt	**M9015**	*Certified for use as a counterstain for paraffin embedded botanical material. It is also a spore stain for bacteria by the method of Schaeffer and Fulton.*	*25 g, 100 g*	*2437-29-8*	*42000*
Methyl Blue	**M5528**	*Certified as aniline blue for use in Mallory's connective tissue stain and as a substitute for fast green FCF in Gomori's one-step trichrome procedure.*	*25 g*	*28983-56-4*	*42780*
Methylene blue	**M9140**	*Certified for use in Mallory's phloxine-methylene blue stain; Levine & Black stain for bacteria in milk; Wright stain for blood smears.*	*25 g, 100 g*	*122965-43-9*	*52015*
Methylene Violet (Bernthsen)	**216313**	*Certified for use as a constituent of MacNeal's tetrachrome stain for blood. Dye content ≥65%*	*1 g, 10 g*	*2516-05-4*	*52041*
Methyl Green, zinc chloride salt	**198080**	*Suitable for use as a DNA stain. Dye content 85%*	*10 g, 50 g*	*7114-03-6*	*42590*
Methyl violet 2B	**198099**	*Methyl violet 2B has been used to stain human lung, fibroblast cells (A549) in in vitro antiviral assay.*	*25 g, 100 g*	*8004-87-3*	*42535*
Neutral Red	**861251**	*Neutral Red has been used as a staining agent for micro- and meso-plankton. It has been used as a staining agent for nematocytes. Useful as an indicator for preparing neutral red paper, and as a biological stain.*	*25 g*	*553-24-2*	*50040*
Nigrosin	**198285**	*Certified for use in Dorner's spore stain. Used as a negative stain in place of India ink for spirochetes, bacteria, protozoa and fungi.*	*25 g, 100 g*	*8005-03-6*	*50420*
Nile Blue A	**N0766**	*Certified for use in Lillie and Fullmer method for staining and discriminating between melanins and lipofuscins in paraffin sections of animal tissue; Lillie and Fuller method for fatty acids/lipids using frozen sections of fatty liver and avocado.*	*5 g, 25 g*	*3625-57-8*	*51180*
Oil Red O	**O0625**	*Certified for use as a fat stain in the Churukian's modification of the method of Lillie and Ashburn.*	*25 g, 100 g*	*1320-06-5*	*26125*
Orange G	**O7252**	*Certified for use in Mallory's connective tissue stain; Wilson-Ezrin method for pituitary acidophils; Kreyberg's method for keratin and mucus; as a counterstain following Heidenhain's iron hematoxylin on paraffin sections; Flemming's triple stain on paraffin sections of onion root.*	*25 g, 100 g*	*1936-15-8*	*16230*

Ordering Information: Biological Stain Commission Certified Stains

Product	Cat. No	Directions for use	Package size	CAS No.	Color Index-No.
Orange II sodium salt	**195235**	*Certified for use in the Wilson-Ezrin method for pituitary acidophils as a counterstain following Heidenhain's or Weigert's hematoxylin on paraffin sections, and as a substitute for Orange G in Floemming's triple stain.*	*25 g, 100 g*	*633-96-5*	*15510*
Orcein, synthetic	**O7380**	*Orcein can be used as a stain in microscopy to visualize chromosomes, elastic fibers, and Hepatitis B surface antigens.*	*5 g, 10 g*	*1400-62-0*	*N/A*
Phloxine B	**P4030**	*Phloxine B is a part of the xanthylium class of dyes. It is used to determine cell ploidy and temperature sensitivity of Schizosaccharomyces pombe. Solid media is colored a vivid pink. Certified for use in Mallory's phloxine-methylene blue stain; Kreyberg's method for keratin and mucus. Dye content ≥80%*	*25 g*	*18472-87-2*	*45410*
Pyronin Y	**213519**	*Certified for use in the methyl green-pyronin method for differential staining of nucleic acids. Dye content 50%*	*1g, 5 g*	*92-32-0*	*45005*
Resazurin sodium salt	**199303**	*For the measurement of metabolic activity and proliferation of living cells.*	*1 g, 5 g, 25 g*	*62758-13-8*	*N/A*
Rose bengal	**198250**	*For research use only.*	*5 g, 25 g*	*632-69-9*	*45440*
Safranin O	**S8884**	*Certified as a stain for chromosomes in the Flemming triple stain; to stain gram negative bacteria in the Gram stain procedure; Safranine-fast green FCF stain for plant cells*	*25 g, 100 g*	*477-73-6*	*50240*
Sudan III, BioXtra	**S4136**	*Certified as a fat stain using Chrurukian variant of the Lillie-Ashburn supersaturated isopropanol method. Sudan III is substituted for the oil red O in the procedure.*	*25 g*	*85-86-9*	*26100*
Sudan IV, BioXtra	**S4261**	*Certified as a fat stain using the Churukian variant of the Lillie-Ashburn supersaturated isopropanol method. Sudan IV is substituted for the Oil Red O in the procedure.*	*25 g*	*85-83-6*	*26105*
Sudan Black B	**199664**	*Certified for fat staining using the Churukian variant of the Lillie-Ashburn supersaturated isopropanol method. Sudan III is substituted for the oil red O in the procedure. Also used for Burdon's Method for staining bacterial lipid.*	*25 g*	*4197-25-5*	*26150*
Thionin acetate salt	**861340**	*Thionin acetate salt has been used in the Nissl stain for the labeling of neuronal cell bodies.*	*5 g, 25 g*	*78338-22-4*	*52000*
Toluidine Blue O	**198161**	*Toluidine Blue O along with light-emitting diode has been used as a photosensitizer to control in vitro biofilms and to kill gram-negative bacteria.*	*5 g, 25 g*	*92-31-9*	*52040*
Wright stain	**861375**	*Wright stain is mainly used for the staining of peripheral blood smears and bone marrow smears. It is also used for G-banding and helps in the analysis of poorly spread metaphases.*	*25 g, 100 g*	*68988-92-1*	*N/A*

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Dry Dyes and Dye Mixtures

Ordering Information: Dry Dyes and Dye Mixtures

Product	Cat. No	Directions for use	Package size	CAS No.	Color Index-No.
Amido black 10 B	**101167**	Electrophoresis: 0.05–0.1% amido black 10 B in saturated picric acid solution; electrophoresis and redox indicator destaining, solution for electrophoresis: 250 mL ethanol, 250 mL distilled water, 500 mL acetic acid, mix together; staining, solution for electrophoresis: 1.25 g amido black 10 B 250 mL destaining solution, mix the amido black 10 B and destaining solution together, and filter before use.	25 g	106-48-8	C.I.20470
Auramine O	**101301**	Fluorescence staining of mycobacteria acc. to Hagemann-Hermann.	50 g	2465-27-2	C.I. 41000
Azure II	**109211**	Blood smears	10 g	37247-10-2	C.I. 52010 / 52015
Carminic acid	**100211**	Detection of glycogen and mucous substances: dissolve 5 g of aluminium sulfate-18-hydrate with 100 mL of distilled water. Add and mix 0.5 g of Carminic acid with 0.5 mL of formaldehyde solution 10%. Filter before use.	5 g	1260-17-9	C.I. 75470
Fluorescein-5-isothiocyanate (FITC)	**124546**	Visualize proteins.	250 mg	3326-32-7	N/A
Fluorescein, Sodium Salt	**FX0325**	*Used for the staining of cells, cell components, chromosomes, and bacteria.*	*125 g, 500 g*	*518-47-8*	*N/A*
Giemsa's azure-eosin-methylene blue	**109203**	Dye mixture for microscopy blood smears and spirochaets.	25 g, 100 g	N/A	N/A
Leishman's eosin methylene blue	**101350**	Used for staining of blood, bone marrow smears, and clinical cytological specimens.	10 g	N/A	N/A
Malachite green oxalate	**101398**	Used for routine staining methods in bacteriology, spore-staining method acc. to Rakette, and a hot staining method.	25 g, 100g, 1 kg	2437-29-8	C.I. 42000
May-Grünwald's eosin methylene blue	**101352**	Used for staining of blood, bone marrow smears, and clinical cytological specimens.	25 g, 100 g	N/A	N/A
Methyl blue	**116316**	Used in polychrome staining, staining of histones to determine nuclear maturity, and sperm viability.	50 g	28983-56-4	C.I. 42780
Rhodamine B	**107599**	Fluorescent staining	25 g	81-88-9	C.I. 45170
Trypan blue	**111732**	Vital staining: 0.2 g in 100 mL distilled water.	25 g	72-57-1	C.I. 23850

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Natural Dyes

Ordering Information: Natural Dyes

Product	Cat. No	Directions for use	Package size	CAS No.	Wt.
Amentoflavone	**40584**	*Biflavonoid with anti-inflammatory, anti-viral and cancer chemopreventive activity. It inhibits vascularization of tumors by blocking the activity of angiogenic VEGFs. Blocks the induction of COX-2 and up-regulates PPAR-γ. It is a negative modulator of the GABAA receptor at the benzodiazepine binding site. ≥99.0% (HPLC)*	*1 mg, 5 mg*	*1617-53-4*	*538.46*
Apiin	**17784**	*Apiin, a major flavonoid component of celery, shows anti-inflammatory activity mediated through inhibition of nitric oxide synthesis and inhibition of iNOS expression. ≥97.0% (HPLC)*	*1 mg, 5 mg*	*26544-34-3*	*564.49*
Crocin	**17304**	*Crocin alleviates some ethanol-induced impairments of learning and prevents ethanol-induced inhibition of hippocampal long-term potentiation (LTP), a form of activity-dependent synaptic plasticity that may underly learning and memory. Related CNS effects are specific to the digentiobiose ester; crocetin glucose gentiobiose ester is half as potent, and the diglucose ester has no effect at all.*	*1 g, 5 g*	*42553-65-1*	*976.96*
Eriocitrin	**45714**	*Flavone glycoside found in lemon. Administration prior to acute exercise helped to maintain the redox status of liver glutathione. Without eriocitrin, it shifts markedly toward oxidized form. ≥98.0% (HPLC)*	*1 mg*	*13463-28-0*	*596.53*
Khellin	**60730**	*Used in microscopy.*	*5 mg*	*82-02-0*	*260.24*
3,3′-Methylene-bis(4-hydroxycoumarin)	**M1390**	*Prototype of the 4-hydroxycoumarin class of anticoagulants, which act as vitamin K antagonists, preventing formation of prothrombin. There are many reports that dicumarol also inhibits NADPH:quinone oxidoreductase (NQO(1)). In one, it inhibited NQO(1) in a pancreatic cancer cell line, causing increased formation of superoxide and inhibiting cell growth.*	*10 g*	*66-76-2*	*336.29*
Naringin	**71162**	*Naringin, a flavanoid in grapefruit and other citrus fruits, potently inhibits intestinal organic anion-transporting polypeptide 1A2 (OATP1A2). Grapefruit juice thereby reduces bioavailability of many pharmacological agents taken at the same time. ≥95% (HPLC)*	*5 g, 25 g*	*10236-47-2*	*580.53*
Neoeriocitrin	**72129**	*Neoeriocitrin was one of several flavonoids that completely blocked the okadaic acid-induced inhibition of autophagy in cultured mouse hepatocytes. It is suggested as a tool in the study of intracellular protein phosphorylation and as a potential protectant against pathological hyperphosphorylations. ~95% (HPLC)*	*25 g, 100 g*	*13241-32-2*	*596.53*
Quercetin 3-D-galactoside	**83388**	*Protects against peroxide-induced oxidative damage to cells by scavenging reactive oxygen species and enhancing activity of anti-oxidant enzymes, in particular, catalase and glutathione peroxidase. ≥97.0% (HPLC)*	*1 mg, 5 mg*	*482-36-0*	*464.38*
Quercetin-3-D-xyloside	**83390**	*≥97.0% (HPLC)*	*1 mg, 5 mg*	*549-32-6*	*434.35*

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Dyes Used as Indicators, Standards, for Environmental Testing and Analytical

Ordering Information: Dyes used as Indicators, Standards, for Environmental Testing and Analytical

Product	Cat. No	Directions for use	Package size	CAS No.	Grade
Acetone-2,4-dinitrophenylhydrazone	**429589**	*Used as an environmental standard, 99%.*	*20 mg*	*1567-89-1*	*Analytical, Environmental, Standard*
Acetaldehyde-2,4-dinitrophenylhydrazone	**429554**	*Used as an analytical standard for environmental analysis.*	*20 mg*	*1019-57-4*	*Analytical, Environmental, Standard*
Alcian Blue 8GX	**05500**	*Alcian Blue 8GX is used as a heteroglycan stain for neutral, sulfated and phosphated mucopolysaccharides and glycosaminoglycans in tissues such as cartilage and extracellular matrices.*	*5 g, 10 g, 25 g*	*33864-99-2*	*Analytical*
Azophloxine	**11640**	*Azophloxine has been used as a dye in Von Kossa staining and nonlinear optical studies. It is also used in photocatalytic tests. Color Index: 18050*	*25 g, 100 g*	*3734-67-6*	*Analytical, Standard*
Bismarck Brown R	**15000**	*Bismarck Brown R has been used as an adsorbate and is used in dye decoloration experiment. Color Index: 21010*	*25 g, 100 g*	*5421-66-9*	*Analytical*
Bromocresol Purple, Bioreagent	**114375**	*Bromocresol Purple has been used for staining of Saccharomyces cerevisiae. Bioreagent that is suitable for pH indicator. Dye content 90%*	*5 g, 25 g*	*115-40-2*	*Analytical, Environmental, Standard*
Bromocresol Purple sodium salt, indicator grade	**860891**	*Bromocresol purple sodium salt has been used as a pH indicator in the yeast culture media (YNB, yeast nitrogen base). Dye content 90%*	*5 g, 25 g*	*62625-30-3*	*Analytical, Environmental, Standard*
Bromoxylenol Blue, indicator grade	**205478**	*Dye content 95%*	*10 g*	*40070-59-5*	*Analytical, Indicator*
Calmagite, indicator grade	**C204**	*Used as an indicator in the titration of calcium or magnesium with EDTA. Used for the determination of magnesium in biological materials.*	*10 g, 25 g*	*3147-14-6*	*Analytical, Indicator*
Chlorophenol Red, indicator grade	**199524**	*Chlorophenol Red is a pH indicator. It is used as an optical transducer of acetyl cholinesterase inhibition by the analytes. Chlorophenol red is also used to selectively determine chlorine dioxide in drinking water. It has been used in the novel assay to detect transformed protoplast-derived Zea mays colonies on Phosphinothricin (PPT).*	*10 g*	*4430-20-0*	*Analytical, Indicator*
Chrysoidine G	**27240**	*Used in microscopy. Color Index: 11270*	*25 g, 100 g*	*532-82-1*	*Analytical*
Congo Red	**C6767**	• *Congo Red has been used as a histochemical stain for the quantification of amyloid deposits in brain tissues.* • *It has been used as a cell wall inhibiting agent in fungus Cryptococcus neoformans.* • *It has also been used to study microstructural details in the cell walls of raw potato and fried potato using confocal microscopy.* *Dye content ≥35%. Color Index: 22120*	*25 g, 100 g*	*573-58-0*	*Analytical, Indicator*
o-Cresolphthalein, indicator grade	**C85778**	*o-Cresolphthalein is a reversible pH indicator. The kinetics of the reverse pathway (red-purple to colorless) is slow, thereby making it an appropriate molecule to check flow patterns in ducts with corrugated walls. It is also used for the colorimetric determination of calcium content via the o-cresolphthalein complexone method. Binding of calcium to o-cresolphthalein, in the presence of alkaline conditions (pH 10-12), results in the formation of a red complex with an absorbance at 570-575nm.*	*10 g*	*596-27-0*	*Analytical, Indicator*
m-Cresol Purple, indicator grade	**857890**	*m-Cresol purple has been used to measure pH via spectrophotometer. Dye content 90%*	*1 g, 5 g, 10 g*	*2303-01-7*	*Analytical, Indicator*

Ordering Information: Dyes used as Indicators, Standards, for Environmental Testing and Analytical

Product	Cat. No	Directions for use	Package size	CAS No.	Grade
Cresol red, indicator grade	**114472**	*Cresol red is used as a tracking dye in DNA, RNA (agarose) and protein (polyacrylamide) electrophoresis. In agarose, Cresol Red runs with an apparent molecular size of approx. 125 bp DNA. Cresol red does not inhibit Taq polymerase. Recently Cresol red has been used as a pH sensitive indicator dye in nanoengineered optical urea biosensors films and hetero-core structured fiber optic pH sensor. Dye content 95%*	*5 g, 25 g*	*1733-12-6*	*Analytical, Indicator*
Cresol Red sodium salt, indicator grade	**114480**	*Cresol Red has been used for checking the immobilized carbonic anhydrase-catalyzed reactions. It has also been used in the loading buffer for MHC (major histocompatibility complex) class I typing through PCR.*	*5 g, 25 g*	*62625-29-0*	*Analytical, Indicator*
Crotonaldehyde-2,4-dinitrophenylhydrazone	**429651**	*Used as an analytical standard for environmental analysis.*	*20 mg*	*1527-96-4*	*Analytical, Environmental, Standard*
Crystal Violet	**6158**	*Crystal Violet has been used to determine cell viability. It has been used in the staining of cells for the quantification of cellular migration. ACS reagent. ≥90.0% anhydrous basis. Color Index: 42555*	*50 g, 100 g*	*548-62-9*	*Analytical, Indicator*
2′,7′-Dichlorofluorescein	**410217**	*ACS reagent*	*1 g, 10 g*	*76-54-0*	*Analytical, Indicator*
Eriochrome® Black T, indicator grade	**858390**	*ACS reagent. Color Index: 1464*	*100 g, 500 g, 1 kg*	*1787-61-7*	*Indicator*
Ethyl Orange sodium salt, indicator grade	**199567**	*Dye content 90%*	*100 g*	*62758-12-7*	*Analytical, Indicator*
Fast Blue BB Salt hemi(zinc chloride) salt	**44670**	*Used in microscopy. Color Index: 37175*	*10 g, 50 g*	*5486-84-0*	*Analytical*
Gentian violet	**48770**	*Dye employed for preparing Gram stain*	*25 g, 100 g, 500 g*	*N/A*	*Analytical*
Giemsa Stain, Modified Solution	**48900**	*When blood films are stained using Giemsa Stain, the nucleus and cytoplasm of white blood cells take on characteristic blue or pink coloration. The use of purified eosin and thiazine dyes minimizes lot-to-lot variation. For the staining of cellular blood components and blood parasites.*	*100 mL, 500 mL, 1 L*	*51811-82-6*	*Analytical*
Glutaraldehyde bis(2,4-dinitrophenylhydrazone)	**431125**	*Used as an analytical standard for environmental analysis.*	*20 mg*	*5085-07-4*	*Analytical, Environmental, Standard*
Hematein	**51230**	*Used in histology. Color Index: 75290*	*10 g, 50 g*	*475-25-2*	*Analytical*
Lithium carbonate	**62470**	*Lithium carbonate (Li_2CO_3) may be used in the following studies:* *• As a precursor in the preparation of $LiFe_1$-$yVyPO_4$ solid solutions.* *• As a starting reagent for the synthesis of various lithium salts (lithium chloride and lithium bromide).* *ACS reagent, ≥99.0%*	*100 g, 500 g*	*554-13-2*	*Analytical*
Lugol solution	**62650**	*Lugol iodine solution is an effective preservative for the marine bacteria.*	*100 mL, 1 L*	*N/A*	*Analytical*
Methyl Green, zinc chloride salt	**67060**	*Methyl green has been used in the histological staining of ovaries. It has also been used as a counterstain in various cells. Color Index: 42590*	*10 g, 50 g*	*7114-05-6*	*Analytical*
Morin hydrate	**69870**	*Reagent for the fluorimetric determination of several metals, mostly aluminum*	*5 g, 10 g, 50 g*	*654055-01-3*	*Analytical*
α-Naphtholbenzein, indicator	**70480**	*α-Naphtholbenzein has been used as indicator during sequential injection analysis technique done for acid-base titrations. pH 8.2-10.0*	*10 g, 50 g*	*145-50-6*	*Analytical*

Ordering Information: Dyes used as Indicators, Standards, for Environmental Testing and Analytical

Product	Cat. No	Directions for use	Package size	CAS No.	Grade
α-Naphtholbenzein, indicator grade	**291099**	*Used as an analytical standard and indicator*	*5 g, 25 g*	*145-50-6*	*Analytical, Indicator*
Naphthol Green B	**70550**	*Used in analytical and complexometry*	*25 g, 100 g, 500 g*	*19381-50-1*	*Technical Grade*
Naphthol Yellow S	**70540**	*Naphthol Yellow S has been used as a staining agent in fixed human embryonic stem cell-derived cardiomyocytes. Used for the precipitation of amino acids and peptides. Color Index: 10316*	*25 g, 100 g*	*846-70-8*	*Analytical*
Nitrazine Yellow, indicator grade	**200182**	*Nitrazine Yellow has been used in dye-protein binding assay. Dye content 85%. Color Index: 14890*	*1 g, 5 g*	*5423-07-4*	*Analytical, Indicator*
Nuclear Fast Red	**60700**	*Nuclear Fast Red has been used for the nuclear staining of PB (prussian blue) positive cells in the rostral sub-epidermis and upper beak coronal region isolated from pigeon. Color Index: 60760*	*5 g, 25 g*	*6409-77-4*	*Analytical*
Propionaldehyde-2,4-dinitrophenylhydrazone	**429546**	*Used as an analytical standard for environmental analysis.*	*20 mg*	*725-00-8*	*Analytical, Environmental, Standard*
Prussian blue soluble	**03899**	*Prussian blue is not a dye but an inorganic pigment containing ferric ferrocyanide. Procedures have been published for the demonstration of non-hemoglobin, cytoplasmic iron, according to Sundberg and Broman, and for the demonstration of hemosiderin according to Highman and from Lille and Fullmer based the work originally done by Perle in 1867. Prussian blue is formed in situ in both of these methods. In combination with iron particles such as superparamagnetic iron oxide nanoparticles, Prussian blue may be used for tracking of transplanted cells such as mesenchymal stem cells. Prussian blue may also be used to differentiate slow versus fast cycling cells by methods that monitor iron oxide particle labeling dilution thru cell division.*	*25 g*	*12240-15-2*	*Analytical, Microscopy, Standard*
1-(2-Pyridylazo)-2-naphthol, indicator grade	**101036**	*1-(2-Pyridylazo)-2-naphthol (PAN), an orange colored dye, is commonly used as an acid-base indicator. It can form chelates with metal ions, which makes it a valuable indicator in complexometric titrations. PAN is also a spectrophotometric reagent, which can extract metal chelates into an organic solvent.*	*1 g, 5 g, 25 g*	*85-85-8*	*Analytical, Indicator*
Pyronin Y	**83200**	*Pyronin Y is important in histochemistry and is combined with methyl green for staining of RNA. The mixture results in bright red/green staining of nucleic acids.*	*5 g, 10 g*	*92-32-0*	*Analytical*
Quinoline Yellow	**22680**	*A mixture of mono- and disulfonic acid sodium salt. Color Index: 47005*	*25 g, 100 g*	*8004-92-0*	*Analytical*
Sudan Red 7B	**46290**	*Used in microscopy. Color Index: 26050*	*10 g, 50 g*	*6368-72-5*	*Analytical*
3′,3′′,5′,5′′-Tetrabromophenolphthalein ethyl ester potassium salt, indicator grade	**114774**	*3′,3′′,5′,5′′-Tetrabromophenolphthalein ethyl ester is used in the spectrophotometric method of total protein determination.*	*1 g, 5 g*	*62637-91-6*	*Analytical, Indicator*
Wright Stain solution	**45253**	*Used in microscopy. Blood stain*	*250 mL, 1 L*	*N/A*	*Analytical*
Xylenol Blue, indicator grade	**205486**	*Xylenol Blue is a dark brown powder and it belongs to the class of sulfonephthalein dyes. Xylenol Blue changes color from red (pH 1.2) to yellow (2.8) and yellow (8.0) to blue (9.6). It is widely used in food storage, drugs, determining bacterial growth, microbial assays and determining lipase. Dye content 90%*	*1 g, 5 g*	*125-31-5*	*Analytical, Indicator*

Italics refer to products available for research use only. Not for use in diagnostic procedures.

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Lab & Production Materials

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Tissue staining

The majority of the products featured in this brochure belong to the group in vitro diagnostic (IVD) medical devices. They are classified as being IVDs Class I or Class II, exempt per US FDA regulation and comply with the EU IVD Directive, most of them bearing the CE logo on the label. However, some of the products featured in this brochure are not IVD medical devices but are required to facilitate the staining procedures.

Fixation and Processing

Single products used as Fixatives, Tissue processing agents, Mounting Media and Embedding Media and many Stains belong to the group of in vitro diagnostic (IVD) medical devices. According to US FDA regulation they are classified being IVDs, Class I, exempt. Products included in this brochure are not available in all countries. Contact your local sales representative or dealer for details.

Greener Alternative Product: Adheres to one or more of The 12 Principles of Green Chemistry

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