

Products for Microscopy

All you need for successful working.

Focussing your microscopy targets.



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Introduction

For over 100 years, dyes and solutions of dyes have been part of the Merck product range. This tradition and experience have made Merck one of the world's leading suppliers of microscopy products.

The products for microscopy, a comprehensive range for classical hematology, cytology, histology and bacteriology, are constantly being expanded and adapted to the needs of the user and to comply with all relevant environmental regulations. The "Neo" product range e.g. is both user-friendly and environmentally compatible.

As always, the most important aspect is quality, which ensures that reproducible results can always be obtained.

The Microscopy products, which are used for diagnostic work with human tissue specimen, belong to the group of In Vitro Diagnostic Medical Devices (IVD) and comply with CE regulations. CE stands for Community of Europe. The CE registration is a self-certification process documenting all steps of the product life cycle and the according quality management. The IVD products bear the CE logo on the label. Insert sheets for all CE registered products are available in the internet at: <http://microscopy.merck.de>

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- Quality control is hence of the utmost importance in the manufacturing process.

All Merck products are manufactured using raw materials and solvents that meet the most stringent quality criteria.

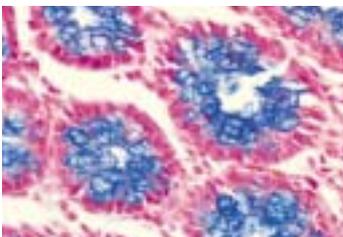
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- Prior to releasing the products for particular applications, all relevant chemical and physical parameters are carefully checked. The methods used for testing comply with international standards and are updated whenever required.

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- The function of each product is also checked using a suitable application; the product is released for sale only when the relevant specifications are met.

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- The excellent reproducibility of the results for which Merck's microscopy products are renowned is a result of our advanced /sophisticated quality control.

Fixing media

Fixing is a procedure designed to stop all the processes in a cell whilst maintaining, as far as possible, the structure and condition of the tissue and at the same time effectively preventing processes such as autolysis, decomposition and putrefaction. The fixing agent is selected according to the diagnostic problem being tackled, the type and size of the available material and the required embedding and staining methods to be used.



Intestine, paraffin section,
Alcian blue PAS stain

Product	Cat. No.	Directions for use	Package size
Acetic acid (glacial), 100% GR, ACS, ISO	1.00063	1-4% in conjunction with other fixatives	1 l, 2.5 l
Acetic acid (glacial) 100%, extra pure	1.00056	1-4% in conjunction with other fixatives	1 l, 2.5 l
Acetone, GR, ACS, ISO, Reag. Ph Eur	1.00014	In conjunction with other fixatives	1 l, 2.5 l
Acetone, extra pure, Ph, Eur, BP, NF	1.00013	In conjunction with other fixatives	1 l, 2.5 l
Chromium(IV) oxide, GR, ACS	1.00229	0.5-0.25% aqueous solution	250 g
Ethanol (ethyl alcohol) absolute, GR, ACS, ISO	1.00983	Fixing time 2-4 hours for a thickness of max. 5 mm	1 l, 2.5 l
Ethanol (ethyl alcohol) absolute, extra pure, BP 1973	1.00986	Fixing time 2-4 hours for a thickness of max. 5 mm	1 l, 2.5 l
Ethanol, denatured, GR	1.00974	Fixing time 2-4 hours for a thickness of max. 5 mm	1 l, 2.5 l
Formaldehyde solution min. 37%, stabilized with about 10% methanol, acid-free	1.03999	Contains calcium carbonate as acid binding basis; filter before use	1 l, 2.5 l
Glutardialdehyde solution 25% for electron microscopy	1.04239	Store in a cool place protected from light, filter before use if a sediment forms, dilute to a 2.5-6.25% concentration with 0.1 M phosphate buffer pH 7.42	250 ml, 1 l, 2.5 l
Glutardialdehyde solution 25%, acc. to P. J. Anderson	1.12179	Electron microscopy, purified and filled under nitrogen	25 ml, 100 ml
Hemacolor® fixing solution (contains methanol)	1.11955	Fast staining with Hemacolor® staining set for blood and bone marrow	2.5 l
LEUCOGNOST® fixing mixture	1.12327	Differentiation of leukaemia	500 ml
Methanol, GR, ISO	1.06009	Fixation of blood smears	1 l, 2.5 l

Merckofix®

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

Product	Cat. No.	Directions for use	Package size
Merckofix®	1.03981	Pump spray mechanism fixes about 250 preparations	1 pack 100 ml
Mercury(II) chloride (sublimite), GR, ISO, ACS	1.04419	Saturated aqueous stock solution: dissolve 60 g in 1 l of hot distilled water	50 g, 250 g, 1 kg
Nitric acid min. 65% (about 1.40), GR	1.00456	Visualizing neurofibrils, 3-7% solution	1 l, 2.5 l
Nitric acid, min. 65%, pure, DAB	1.00443	Visualizing neurofibrils, 3-7% solution	1 l, 2.5 l
Osmium(VIII) oxide (LAB) (Osmium tetroxide)	1.24505	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	100 mg, 500 mg, 1 g (ampoules)
Osmic acid solution 2% aqueous solution	1.09266	Yellowish-brown coloration has no effect on usability	5 ml (ampoule)
Platinum(II) chloride (73% Pt), for synthesis	8.24566	Aqueous solution 1:300 for fixing mitochondria	500 mg
Potassium dichromate, GR, ACS, ISO	1.04864	Fixing lipids and mitochondria 3% aqueous solution	500 g, 1 kg
1-Propanol, (propyl alcohol), GR	1.00997		1 l, 2.5 l
1-Propanol (propyl alcohol), extra pure	1.00996		1 l, 2.5 l
2-Propanol (iso-propyl alcohol), GR, ACS, ISO	1.09634	Instead of ethanol (Papanicolaou staining)	1 l, 2.5 l
2-Propanol (iso-propyl alcohol) extra pure, USP	1.00995		1 l, 2.5 l
Trichloroacetic acid, GR, ACS	1.00807	5-10% solution	100 g, 250 g
Tungstophosphoric acid, GR	1.00583	Visualizing connective tissue, fibrin and bones 1-5%	100 g, 250 g

Decalcifier

OSTEOMOLL® and OSTEOSOFT®

Decalcification methods are necessary for optical microscopic examinations of bone and other hard tissue in routine histological procedures. The material to be decalcified is placed in an excess of decalcifying solution and demineralized (decalcified) in this. 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. 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 has been stained to facilitate the identification of the decalcifying procedure – OSTEOMOLL® is blue. The dye used is inert in terms of any effect on the tissue to be decalcified. 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, with the result that immunological procedures can be conducted.

The decalcifying solution has been stained to facilitate the identification of the decalcifying procedure – OSTEOSOFT® is yellow. 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®	1.01736	Bone-decalcification solution for bone and hard tissues in histology	1 l
OSTEOSOFT®	1.01728	Bone-decalcification solution for sensitive, calcium-containing tissue in histology	1 l



Stained decalcifying solutions for fast and reliable identification in the laboratory. OSTEOMOLL® is blue, OSTEOSOFT® is yellow

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 necessary. Traditional embedding agents are paraffins, synthetic resins, gelatine and celloidin.

Product	Cat. No.	Directions for use	Package size
Cedukol® Collodion wool	1.04363	Composition: collodion wool in about 30% ethanol, 8, 4, and 2% solutions are necessary for embedding, a mixture of 60 g Cedukol® with 292 ml diethylether and 308 ml absolute ethanol results in 500 g of an 8% celloidine stock solution, from which the 4 and 2% solutions can be prepared	60 g

Histosec®

Histosec® products are selected paraffins with added polymers and which are available with and without DMSO. Specially selected raw materials and standardised 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 series sections to be prepared.

Product	Cat. No.	Directions for use	Package size
Histosec® solidification point 56-58°C	1.11609	Paraffin sections, contains DMSO	4 x 2.5 kg, 25 kg pastilles
Histosec® without DMSO solidification point 56-58°C	1.15161	Paraffin sections	4 x 2.5 kg, 25 kg pastilles
Kaiser's glycerol gelatine	1.09242	Water-soluble embedding	100 g
Paraffin solidification point 56-58°C	1.07164	Pure paraffin specially for histology	4 x 2.5 kg pastilles

Mounting media

For preservation purposes and subsequent optimal microscopy, the stained sections are normally mounted using a suitable mounting agent and covered with a cover glass. Mounting agents can be aqueous and non-aqueous; the type used depends on the protocol involved. 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 (n_D); this should be around 1.5, the refractive index of glass.

Aqueous mounting media

Product	Cat. No.	Directions for use	Package size
Aquatex® (ref. index $n_{D20} 1.4$)	1.08562	Aqueous mounting agent, used for LEUCOGNOST® stained specimens	50 ml
Gelatine	1.04070		500 g
Glycerol (ref. index $n_{D20} 1.47$)	1.04095	Aqueous preparations and preparations for fluorescence microscopy	250 ml
Kaiser's glycerol gelatine	1.09242	Preparations, histological sections for substance or enzyme determination	100 g
Sorbitol F liquid (KARION®)	1.02993	A few crystals of thymol are added to avoid fungal contamination; nuclear stain retained following hematoxylin stain; not suitable for Azan and van Gieson staining	50 l

Non-aqueous mounting media

Product	Cat. No.	Directions for use	Package size
Canada balsam (ref. index n_{D20° 1.515-1.530)	1.01691	Natural resin	25 ml, 100 ml
Canada balsam hard in xylene solution (2 + 1) (ref. index n_{D20° 1.515-1.550)	1.01693	Very high purity	100 ml
Entellan (ref. index n_{D20° 1.49-1.50)	1.07960	Permanent slides (contains toluene)	500 ml
Entellan® new (ref. index n_{D20° 1.49-1.50)	1.07961	Rapid mounting agent, permanent slides, no bubble formation at high ambient temperatures (contains xylene)	100 ml, 500 ml
Merckoglas® (ref. index n_{D20° 1.50-1.51)	1.03973	Mounting agent for the even coating of cytological smears instead of cover slips (contains toluene)	500 ml
Neo-Mount® (ref. index n_{D20° 1.43-1.46)	1.09016	After Neo-Clear® use	500 ml
Paraffin liquid	1.07161		100 ml, 500 ml

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 (n_D) is about 1.5, the figure for glass. This enables a homogeneous oil immersion to be achieved.

Product	Cat. No.	Refractive index n_{D20°	Package size
Acetonitrile, GR	1.00003	1.345	1 l, 2.5 l
Acetonitrile, extra pure	1.15500	1.345	1 l, 2.5 l
1-Bromonaphthalene, for synthesis	8.06210	1.658	100 ml, 500 ml, 2.5 l
Cinnamaldehyde	8.02505	1.622	5 ml, 250 ml, 1 l
1,2-Dibromoethane, for synthesis	8.00952	1.5368	5 ml, 250 ml, 1 l
Diiodomethane	1.06053	1.740	100 ml
Dinonylphthalate	1.09669	1.486	100 ml
1,2-Ethanedithiol, for synthesis	8.00795	1.125	100 ml
Ethylene glycol, extra pure	1.00949	1.432	1 l, 2.5 l
Ethylene glycol, GR	1.09621	1.432	1 l, 2.5 l
Immersion oil acc. to DIN ISO 8036-1, mod., PCB-free (viscosity about 150-1500 mm ² /s)	1.15577	1.515	100 ml
Immersion oil (viscosity about 100-120 mPa·s)	1.04699	1.516	100 ml, 500 ml
Oil of cedar wood (viscosity 2000-3000 mPa·s)	1.06965	1.519	100 ml, 500 ml

Other products and auxiliaries for microscopy

Product	Cat. No.	Directions for use	Package size
Acetic acid, glacial, 100 %, extra pure Ph Eur, BP, JP, USP, E 260	1.00056	Preparing stain solutions	1 l, 2.5 l
Acetic acid, 100 %, GR, ACS, ISO, Reag. Ph Eur	1.00063	Preparing stain solutions	1 l, 2.5 l
Acetone, extra pure, Ph, Eur, BP, NF	1.00013	In conjunction with other fixatives, as intermedium	1 l, 2.5 l
Acetone, GR, ACS, ISO, Reag. Ph Eur	1.00014	30-, 60-, 90-, 100 %, duration 15-20 minutes	1 l, 2.5 l
Albumin (from bovine blood)	1.12018	Mounting histological sections albumin-glycerol mixture 1 : 1	25 g, 100 g
Albumose silver	1.07447	Silver protein, Visualizing neurofibrils according to Bodian	25 g
Aluminum chloride hexahydrate, extra pure, Ph Eur, BP, USP	1.01084	Addition to stain solutions (paracarmin acc. to Mayer)	1 kg
Aluminum sulfate 18-hydrate, extra pure, Ph Eur, BP	1.01102		5 kg
Ammonia solution, 25 %, extra pure	1.05422		1 l, 2.5 l
Ammonia solution, min. 25 %, GR	1.05432	Addition to stain solutions (carmin solution acc. to Best)	1 l, 2.5 l
Ammonium aluminum sulfate 12-hydrate, GR (ammonium alum)	1.01031		500 g
Ammonium iron(III) sulfate 12-hydrate (iron alum), GR, ACS, ISO	1.03776	Iron alum solutions	500 g
Aniline, GR	1.01261	Clearing agent	250 ml, 1 l
Barbital sodium (buffer substance),		Preparing barbital buffers in the detection of alkaline leukocyte phosphatase	
Benzyl benzoate, Ph Eur, BP, USP	1.01806		25 l
Boric acid, GR, ACS, ISO, Reag. Ph Eur	1.00165	Addition to stain solutions (Manson and Schwarz stain)	100 g, 500 g
Buffer tablets pH 6.4 acc. to Weise	1.11373	Preparing buffer solution pH 6.8 according to Weise for blood smear staining	1 pack 100 tablets
Buffer tablets pH 6.8 acc. to Weise	1.11374	Preparing buffer solution pH 6.4 according to Weise for blood smear staining	1 pack 100 tablets
Buffer tablets pH 7.2 acc. to Weise	1.09468	Preparing buffer solution pH 7.2 according to Weise for blood smear staining	1 pack 100 tablets
n-Butyl acetate, extra pure	1.01974	Instead of toluene, xylene	2.5 l
n-Butyl acetate, GR	1.09652	Instead of toluene, xylene	1 l
Calcium chloride dihydrate, GR, ACS, Reag. Ph Eur	1.02382	Addition to stain solutions	250 g, 500 g, 1 kg
Carbon disulfide, extra pure	1.02211	Intermedium	1 l
Carbon disulfide, ACS, Reag. Ph Eur	1.02214	Intermedium	1 l
Carbon tetrachloride, GR	1.02222		1 l, 2.5 l
Chloroform, extra pure, DAB 9	1.02431		1 l, 2.5 l
Chloroform, GR, ACS, ISO, Reag. Ph Eur	1.02445		250 ml, 1 l, 2.5 l
Chromium(VI) oxide, GR, ACS	1.00229		250 g
Citric acid, free from water of crystalization, powder, extra pure, Ph Eur, BP, USP, E 330	1.00241		5 kg

Product	Cat. No.	Directions for use	Package size
5,5-Diethylbarbituric acid sodium salt (sodium barbital)	1.06318	Preparing barbital buffers in the detection of alkaline leukocyte phosphatase	100 g, 500 g
Diethyl ether, extra pure	1.00923		1 l, 5 l
Diethyl ether stabilized with 2,6-di-tert-butyl-4-methyl-phenol (5 mg/l), GR, ACS, ISO, Reag. Ph Eur	1.00921		1 l, 5 l
2,2-Dimethoxypropane, for synthesis	8.02936		500 ml, 1 l
Dioxan, extra pure	1.03115		1 l, 2.5 l
Dioxan, GR, ACS, ISO	1.09671		1 l, 2.5 l
Ethanol (ethyl alcohol) absolute, GR, ACS, ISO, Reag. Ph Eur	1.00983	Ascending alcohol series	1 l, 2.5 l
Ethanol (ethyl alcohol) absolute, pure, Ph Eur, BP, USP	1.00986		1 l, 2.5 l
Ethanol, denatured, GR	1.00974	Ascending alcohol series	1 l, 5 l
Ethylene glycol monomethyl-ether, GR, ACS, Reag. Ph Eur	1.00859	Clearing agent	1 l, 2.5 l
Gelatine for microbiology	1.04070	Bloom-number about 200	100 g, 500 g
Gelatine, powder	1.04078	pH value 5-6	500 g, 1 kg
Glycerol (about 87%), extra pure, Ph Eur, BP	1.04091	Clearing agent	1 l, 2.5 l
Glycerol (about 87%), GR	1.04094	Binder	500 ml, 1 l, 2.5 l
Glycerol	1.04095	Specially tested for fluorescence microscopy	250 ml
Gold trichloride acid trihydrate, yellow, GR	1.01582	Gold impregnation: 1% solution	1 g, 5 g
1N Hydrochloric acid	1.09057		1 l
Hydrochloric acid 2mol/l	1.09063		1 l
Hydrochloric acid 25 %, extra pure, Ph Helv	1.00312		2.5 l
Hydrochloric acid min. 25% (about 1.125), GR	1.00316		1 l, 2.5 l
Hydrochloric acid, fuming 37%, extra pure, Ph Eur, BP, JP NF	1.00314		1 l, 2.5 l
Hydrochloric acid, fuming min. 37%, GR, ACS, ISO, Reag. Ph Eur	1.00317		1 l, 2.5 l
Hydrochloric acid-alcohol (contains 0.75% HCl)	1.00327	Ziehl-Neelsen staining	1 l, 5 l
Hydroquinone, for synthesis	8.22333		250 g, 1 kg
Iodine, resublimed, GR, ACS, ISO, Reag. Ph Eur	1.04761	Weigert's iodine solution	100 g, 500 g
Iron(III) chloride, GR, ACS, Reag. Ph Eur	1.03943	For preparing staining solutions	100 g, 250 g, 1 kg
Kaiser's glycerol gelatine	1.09242	Binder, aqueous mounting medium	100 g
Lactic acid, about 90%, extra pure, Ph Eur, BP, E 220	1.00366		500 ml, 1 l
Lithium carbonate, extra pure, Ph Eur, BP, USP	1.05671	Addition to stain solutions	250 g, 1 kg

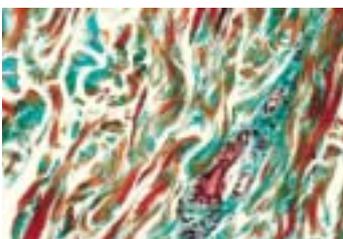
Product	Cat. No.	Directions for use	Package size
Lithium carbonate, GR, ACS, Reag. Ph Eur	1.05680	Cold-saturated aqueous solution, 1 g in 100 ml distilled water	100 g, 250 g
Methanol, extra pure, DAB, BP, NF	1.06008		1 l, 2.5 l
Methanol, GR, ACS, ISO, Reag. Ph Eur	1.06009		1 l, 2.5 l
Methylbenzoate, extra pure	1.06059	Intermedium	1 l, 2.5 l
Methyl salicylate, extra pure, Ph Eur, BP, NF	1.06070	Clearing agent	2.5 l
Molybdato-phosphoric acid hydrate, GR, ACS, Reag. Ph Eur	1.00532	Trichrome staining	25 g, 100 g
Neo-Clear®	1.09843	Xylene substitute for histoprocessing, deparaffination, dehydration	5 l
Nitric acid 65%, extra pure	1.00443		1 l, 2.5 l
Nitric acid 65%, GR, ISO	1.00456	Visualization of neurofibrils, 3-7% solution	1 l, 2.5 l
Oil of cedar wood	1.06965		100 ml, 500 ml
Perhydrol® 30% H ₂ O ₂ , GR, ISO	1.07209		250 ml, 1 l
Periodic acid, GR	1.00524	PAS reaction, 0.75% solution	25 g, 100 g
Phenol, extra pure, Ph Eur, USP	1.00200		1 kg
Phenol, GR, ACS, Reag. Ph Eur	1.00206	Preparing liquid phenol: melt 10 parts of phenol with slight heating, and add 1 part of distilled water	250 g, 1 kg
Phosphate buffer solution, pH 6.88	1.07294	Buffer concentration of 0.025 M	1 l
Platinum(II) chloride (73% Pt), for synthesis	8.24566	Aqueous solution 1:300 for fixation of mitochondria	500 mg
Platinum(IV) chloride (57.5% Pt) anhydrous, for synthesis	8.07347	Preparation of fixing mixtures	1 g
Protargol		Silver protein, Visualizing neurofibrils according to Bodian	
2-Propanol, GR, ACS, ISO, Reag. Ph Eur	1.09634	Fixing and dehydrating agent	1 l, 2.5 l
2-Propanol, extra pure, Ph Eur, BP, USP	1.00995		1 l, 2.5 l
1-Propanol, extra pure	1.00996		1 l, 2.5 l
1-Propanol, GR, ACS, Reag. Ph Eur	1.00997		1 l, 2.5 l
Potassium aluminum sulfate, GR, ACS, Reag. Ph Eur	1.01047	Hemalum solutions	100 g, 1 kg
Potassium carbonate, extra pure, Ph Eur, USP, E 501	1.04924		1 kg
Potassium carbonate, GR, ACS, ISO, Reag. Ph Eur	1.04928	Preparing carmine solution	100 g, 500 g, 1 kg
Potassium chloride, extra pure, Ph Eur, BP, USP, FCC, E 508	1.04935		1 kg
Potassium chloride, GR	1.04936		100 g, 500 g, 1 kg
Potassium chromium(III) sulfate, GR (chrome alum)	1.01036		250 g, 1 kg
Potassium cyanide, GR, ACS, Reag. Ph Eur	1.04967		100 g, 250 g, 1 kg

Product	Cat. No.	Directions for use	Package size
Potassium dihydrogen phosphate crystals, extra pure, Ph Eur, BP, NF, E 340	1.04871		1 kg
Potassium dihydrogen phosphate, GR, ISO, Reag. Ph Eur	1.04873	Preparing buffer solution	250 g, 1 kg
Potassium dihydrogen phosphate solution, 1/15 M	1.04875	Preparing buffer solution	1 l
Potassium hexacyanoferrate(II) trihydrate, GR, ACS, ISO, Reag. Ph Eur	1.04984	Iron staining	100 g, 500 g
Potassium hydrogen phthalate, GR, Reag. Ph Eur	1.04874		250 g, 1 kg
Potassium hydroxide, extra pure, Ph Eur, BP, JP, NF, FCC, E 525	1.05032		1 kg
Potassium hydroxide pellets, GR	1.05033		500 g, 1 kg
Potassium iodide, GR, ISO, Reag. Ph Eur	1.05043	Weigert's iodine solution	250 g, 500 g, 1 kg
Resorcinol, extra pure, BP, Ph Eur, USP	1.07590		100 g, 1 kg
Resorcinol, GR	1.07593	Used for the preparation of staining solutions (Weigert's Elastin)	100 g, 250 g
Ringer tablets	1.15525	To prepare 1/4-strength RINGER solution, dissolve 1 tablet in 500ml of distilled water	1 pack 100 tablets
Salicylic acid, extra pure, Ph Eur, BP, USP	1.00631		1 kg
Schiff's reagent	1.09033	PAS reaction	500 ml
Silver nitrate, GR, ISO, Reag. Ph Eur	1.01512	Silver staining	25 g, 100 g, 250 g, 1 kg
Sodium carbonate, extra pure, anhydrous, Ph Eur, BP, NF	1.06398		1 kg
Sodium carbonate, anhydrous GR, ISO,	1.06392		100 g, 500 g
Sodium chloride, extra pure, Ph Eur, BP, USP	1.06400		1 kg
Sodium chloride cryst., GR, ACS, ISO, Reag. Ph Eur	1.06404	Preparing physiological saline solution	100 g, 500 g, 1 kg
Sodium disulfite, GR, ACS, Reag. Ph Eur	1.06528	Preparing sulfite solutions	100 g, 500 g, 1 kg
Sodium hydrogen carbonate, extra pure, Ph Eur, BP, USP, FCC, E 500	1.06323		2.5 kg
Sodium hydrogen carbonate, GR, ACS, Reag. Ph Eur	1.06329	Preparing buffer solution	100 g, 500 g, 1 kg
di-Sodium hydrogen phosphate, anhydrous, GR, ACS, Reag. Ph Eur	1.06586	Preparing buffer solution	100 g, 500 g, 2.5 kg
di-Sodium hydrogen phosphate, extra pure, anhydrous, Ph Eur, BP, USP, E 339	1.06585		5 kg
di-Sodium hydrogen phosphate 2-hydrate, GR	1.06580	Preparing buffer solution	500 g, 1 kg

Product	Cat. No.	Directions for use	Package size
di-Sodium hydrogen phosphate solution, 1/15 M	1.06587	Buffer stock solution, preparing buffer solution	1 l
Sodium hydroxide solution, about 32%, extra pure	1.05587		2.5 l
Sodium iodate, GR	1.06525	Preparing buffer solutions	25 g, 100 g
di-Sodium succinate (hexahydrate) for synthesis	8.20151		500 g
di-Sodium tetraborate, anhydrous, GR	1.06306	Addition to silver solutions	100 g, 250 g
Sodium tetraborate GR (Borax) (85% Na ₂ B ₄ O ₇)	1.06310	Staining solutions	250 g
di-Sodium tetraborate decahydrate, extra pure, Ph Eur, BP, NF	1.06303		1 kg
Sorbitol F liquid (KARION®), E 420	1.02993	Substitute for glycerol in histological conservation	50 l
Sputofluol®	1.08000	Pre-treatment of specimens in the detection of mycobacteria	1 l
5-Sulfosalicylic acid dihydrate, GR, ACS	1.00691	As 5% solution or fixing mixture with ethanol and glacial acetic acid	100 g, 250 g, 1 kg
Tetrahydrofuran, extra pure	1.08114		1 l, 2.5 l
Tetrahydrofuran, GR, stabilized with 2,6-di-tert-butyl-4-methylphenol ACS, Reag. Ph Eur	1.09731	Clearing agent	1 l, 2.5 l
Thymol cryst. extra pure, Ph Eur, BP, NF	1.08167	Additive in aqueous staining solutions, a few crystals of thymol' in 100 ml of staining solution prevent contamination	100 g, 1 kg
Toluene, extra pure	1.08323	Intermedium	1 l, 2.5 l
Toluene, GR, ACS, ISO, Reag. Ph Eur	1.08325	Intermedium	1 l, 2.5 l
Trichloroacetic acid, GR, ACS, Reag. Ph Eur	1.00807	5-10% solution	100 g, 250 g, 1 kg
Trichloroethylene, extra pure	1.00958	Intermedium	1 l, 2.5 l
3-(Triethoxysilyl)propylamine, for synthesis	8.21619	Silanization: 2% in acetone for 5 min	100 ml
Tris(hydroxymethyl)amino-methane, GR, ACS, Reag. Ph Eur	1.08382	Buffer solution (Tris buffer)	100 g, 500 g
Tungstophosphoric acid, GR	1.00583	Visualizing connective tissue, fibrin and bones 1-5% (fixing agent)	100 g, 250 g
Xylene, extra pure, Ph Helv. VI	1.08685	Intermedium	1 l, 2.5 l
Xylene, GR, ACS, ISO, Reag. Ph Eur mixture of isomers	1.08681	Intermedium	1 l, 2.5 l

2 Dyes for microscopy

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, e.g. chromatin; and the acid dyes (e.g. eosin) stain mainly the basic proteins, e.g. the lysosomal enzymes in the granules. 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.



Skin, paraffin section,
Masson-Goldner staining kit

Certistain® dyes for microscopy

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, adapted to the criteria, given by the Biological Stain Commission in the USA (Conn, H. J. Biological Stains, 10th Ed., 2002, BIOS Scientific Publishers, Oxford, UK). Chemical and physical product specifications including test protocols with literature references of each dye may be requested by interested customers.

Product	Cat. No.	Color Index-No.	Min. dye content in %	Directions for use	Package size
Acid fuchsin	1.05231	C.I. 42685	60	Plasma: 1% aqueous solution	25 g
Acridine orange ZnCl ₂	1.15931	C.I. 46005	60	Vital and fluorescent stain: 0.5% in physiological sodium chloride solution	25 g
Alcian blue 8GX	1.05234	C.I. 74240	-	Acid mucosubstances: 1% in acetic acid (3%)	10 g
Brilliant cresyl blue ZnCl ₂	1.01368	-	60	Reticulocytes: 1% in physiological saline solution	25 g
Brilliant green (hydrogen sulfate)	1.01374	C.I. 42040	95	Spores: 5% aqueous solution	25 g
Carmin (calcium aluminum lacquer of carminic acid)	1.15933	C.I. 75470	1)	Histological sections: 3.6% in aqueous saturated lithium carbonate solution (boil for 15 minutes and add 1 g of thymol)	5 g, 25 g

1) Substance mixture without homogeneous structural formula

Product	Cat. No.	Color Index-No.	Min. dye content in %	Directions for use	Package size
Cresyl violet (acetate)	1.05235	-	70	Cell nuclei, tigroid plaques: 1% solution	25 g
Crystal violet	1.15940	C.I. 42555	88	Gram staining: dissolve 2 g in 20 ml ethanol (95%) and mix with 80 ml of a 1% aqueous ammonium oxalate solution	25 g, 100 g
Eosin B (bluish)	1.15934	C.I. 45400	85	Cell plasma: 0.1%-1% aqueous solution	25 g, 100 g
Eosin Y (yellowish)	1.15935	C.I. 45380	85	Histological sections: 0.5% aqueous solution	25 g, 100 g
Erythrosin B	1.15936	C.I. 45430	80	Histological sections: 0.5% aqueous solution plant buds: 0.5% solution in clove oils	10 g, 25 g
Fast Green FCF	1.04022	C.I. 42053	85	Testicles: 0.2% solution in ethanol (95%)	25 g
Fuchsin (basic)	1.15937	C.I. 42510	85	Cell nuclei, bacteria: 10% solution in prewarmed absolute ethanol	25 g, 100 g
Hematoxylin (monohydrate)	1.15938	C.I. 75290	95	Cell nuclei: dissolve 0.5% in 10 ml ethanol dilute with 90 ml of distilled water and leave to mature for 4-5 weeks	25 g, 100 g
Indigo carmine	1.04741	C.I. 73015	80	Connective tissue: 1 g in 300 ml saturated picric acid solution	25 g
Light green SF (yellowish)	1.15941	C.I. 42095	75	Chromosomes: 0.2% solution in ethanol (95%)	25 g, 100 g
Malachite green (oxalate)	1.15942	C.I. 42000	90	Spores: 5% aqueous solution	25 g, 100 g
Methylene blue	1.15943	C.I. 52015	82	Bacteria: 1% aqueous solution	25 g, 100 g
Methyl green ZnCl ₂	1.15944	C.I. 42590	50	Chromatin: dissolve 1 g in 100 ml of distilled water and add 25 ml absolute ethanol	25 g
Methyl violet	1.15945	C.I. 42535	75	Amyloid: 0.5% aqueous solution	25 g
Neutral red	1.01376	C.I. 50040	90	Brain sections: 1.75% aqueous solution	25 g
New fuchsin	1.05226	C.I. 42520	75	Staining of mycobacteria acc. to Ziehl-Neelsen	100 g
Nigrosin (water-soluble)	1.15924	C.I. 50420	1)	Bacteria: boil 10 g in 100 ml water for 10 min., leave to cool and add 0.5 ml formaldehyde solution (37%)	25 g

1) Substance mixture without homogeneous structural formula

Product	Cat. No.	Color Index-No.	Min. dye content in %	Directions for use	Package size
Nile blue (hydrogen sulfate)	1.15946	C.I. 51180	90	Fat liver: dissolve 0.05 g in 1% H ₂ SO ₄ solution	25 g
Nuclear fast red	1.15939	C.I. 60760	90	Histological sections: dissolve 0.1 g together with 5 g aluminum sulfate in 100 ml hot water	25 g
Oil red O	1.05230	C.I. 26125	80	Lipids: dissolve 0.5 g in 100 ml isopropyl alcohol (60%), boil briefly and filter	25 g
Orange G	1.15925	C.I. 16230	80	Cell plasma: dissolve 1 g in 90 ml water and add 12.5 ml methanol	25 g
Orcein (synthetic)	1.07100	-	1)	Histological sections: dissolve 0.4 g in 100 ml ethanol (70%) and add concentrated hydrochloric acid	5 g, 25 g
Pararosaniline (chloride)	1.07509	C.I. 42500	88	1% clear, colorless solution as Schiff's reagent	25 g, 100 g
Phloxin B	1.15926	C.I. 45410	80	Histological sections: mix 5% aqueous solution with 1% aqueous borax methylene blue solution in a ratio of 1 + 9	25 g
Ponceau S	1.15927	C.I. 27195	80	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
Pyronine G	1.07518	C.I. 45005	85	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	5 g
Safranin O	1.15948	C.I. 50240	80	Chromosomes: 1% aqueous solution	25 g
Thionine (acetate)	1.15929	C.I. 52000	85	Brain sections: solve 0.025 g in 100 ml 0.1 N sodium acetate buffer (pH 3.7-4.5)	25 g
Toluidine blue O ZnCl ₂	1.15930	C.I. 52040	85	Histological sections: 0.1% aqueous solution	25 g

1) Substance mixture without homogeneous structural formula

Other dry dyes and dye mixtures

Product	Cat. No.	Color Index-No.	Directions for use	Package size
Albumose silver Silver protein Protargol	1.07447	-	Microscopy, demonstration of neurofibrils acc. to Bodian	25 g
Alizarin yellow GG	1.06776	C.I. 14025	Indicator dye and for micro- biology, culture medium additive for Gassner agar	10 g
Amido black 10 B	1.01167	C.I. 20470	Collagenic connective tissue: 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, filter before use	25 g, 100 g, 1 kg
Auramine O Canary yellow, Pyoktanium aureum, Pyoktanin yellow	1.01301	C.I. 41000	Microscopy staining of mycobacteria acc. to Hagemann-Hermann, fluorescence staining	50 g
Azocarmine G Azocarmine GX, Rosazine, Rosinduline GXS	1.01593	C.I. 50085	Histology connective tissue: boil 0.1 g azocarmine G in 100 ml distilled water and add 1 ml glacial acetic acid	25 g
Azure II	1.09211	C.I. 52010/52015	Microscopy blood smears, reticulocytes, protozoa: 1 g azure II in 100 g ethanol heated to 50 °C mast cells: 4 ml 0.1% aqueous azure II solution 4 ml 0.1% aqueous eosin bluish solution 5 ml acetone 25 ml distilled water 2 ml buffer solution pH 4.1 buffer solution: 2 ml citric acid (0.1 mol/l) 1 ml di-sodium hydrogen phosphate (0.2 mol/l)	10 g

Product	Cat. No.	Color Index-No.	Directions for use	Package size
Brilliant green Ethyl green, Malachite green G Emeral green crystals, Solid green JJO, Diamond green D	1.01310	-	Microbiology culture medium additive for BPLS agar, BRILA broth etc.	50 g
Calcon	1.04594	C.I. 15705	Indicator dye	50 g
Carminic acid	1.00211	C.I. 75470	Microscopy carmalum acc. to Mayer: heat 10 g potassium aluminum sulfate in 200 ml distilled water, add 1 g carminic acid, leave to cool and add 0.2 g salicylic acid paracarmine acc. to Mayer: cautiously heat 1.0 g carminic acid, 0.5 g aluminum chloride and 4.0 g calcium chloride in 100 ml 70% ethanol	5 g
Chromazurole S	1.02477	C.I. 43825	Indicator dye	25 g
Coomassie®* brilliant blue G 250	1.15444	C.I. 42655	Electrophoresis	25 g
Coomassie®* brilliant blue R 250	1.12553	C.I. 42660	Electrophoresis	25 g
4',6-Diamidino-2- phenylindole- dihydrochloride (DAPI)	1.24653	-	Microscopy fluorescent staining: 1 : 1,000 to 1 : 10,000 with distilled water	100 mg
Eriochrome blue SE	1.03340	C.I. 16680	Indicator dye	5 g
Eriochrome blue-black B	1.03168	C.I. 14640	Indicator dye	25 g

* trademark of Imperial Chemical Industries PLC

Product	Cat. No.	Color Index-No.	Directions for use	Package size
Fast blue salt B . ZnCl ₂ Diazo blue B, Blue BNS salt, Dianisidine blue, Fast blue salt BN, Michrome blue salt 250 Naphthanil blue B	1.03191	-	Microscopy detection of a-naphthylacetate esterase: mix 98.0 ml 0.1 m phosphate buffer pH 6.5 and 2 ml 1% solution of naphthyl acetate in 50% acetone with 100 mg fast blue salt B; 0.1 m phosphate buffer pH 6.5: Solution A: 15.12 g potassium di-hydrogen phosphate in 1 l distilled water Solution B: 19.79 g di-sodium hydrogen phosphate in 1 l distilled water; add 68.7 ml solution A to 31.3 ml solution B	25 g
Fluorescein isothiocyanate (FITC I)	1.24546	-	Microscopy	250 mg
Fluorescein sodium extra pure	1.03992	C.I. 45350	Fluorescein sodium solution 1 : 1,000-1 : 10,000 in physiological sodium chloride solution	1 kg
Giemsa's azure-eosin- methylene blue	1.09203	-	Dye mixture for microscopy blood smears, protozoa: heat 0.76 g Giemsa's azure-eosin methylene blue in 50 ml glycerol for 3 hours in a water bath at 60 °C, add 50 ml methanol; leave to stand for 5 days and filter	25 g, 100 g
Gold trichloride acid trihydrate yellow, GR	1.01582	-	Demonstration of glia structures by gold impregnation: 1% solution	1 g, 5 g (ampoules)
Hematein	1.11487	C.I. 75290	Microscopy hemalum acc. to Mayer for nuclei: Solution A: heat 1 g hematein in 50 ml 96% ethanol Solution B: 50 g potassium aluminum sulfate in 1.000 ml distilled water, mix solutions A and B, filter and add 1 g thymol	25 g
Hematoxylin (crystals)	1.04302	C.I. 75290	Microscopy nuclear staining	25 g, 100 g, 1 kg

Product	Cat. No.	Color Index-No.	Directions for use	Package size
Janus green Diazin green S, Union green B	1.01324	C.I. 11050	Microscopy vital staining of mitochondria: 0.1 g Janus green in 1 l distilled water	10 g
Leishman's eosin- methylene blue	1.01350	-	Dye mixture for microscopy blood smears: 0.12 g Leishman's eosin-methylene blue dissolved in 100 ml methanol heated to 40°C, leave to mature for 5 days and filter	10 g
Litmus, extra pure	1.05312	-	Culture medium additive for LL agar (litmus lactose agar acc. to Drigalski)	10 g, 100 g
Malachite green (oxalate)	1.01398	C.I. 42000	Microbiology culture medium additive, spore staining acc. to Schaeffer-Fulton: 5 g malachite green-oxalate in 100 ml distilled water; vital nuclear stains of plant cells: 0.001-0.1 % aqueous solution	25 g, 100 g, 1 kg
May-Grünwald's eosin-methylene blue	1.01352	-	Dye mixture for microscopy blood smears: 0.25 g May-Grünwald's eosin methylene blue in 100 ml methanol with slight heating in a water bath at 60°C, stir for 1 hour, leave to stand for 24 hours and filter.	25 g, 100 g
Methyl blue (> 60%) Aniline blue	1.16316	C.I. 42780	Microscopy collagenic and reticular connective tissue; microbiology culture medium e.g. Gassner agar	50 g
Methyl orange	1.01322	C.I. 13025	Indicator dye	25 g, 100 g, 1 kg
Methyl red	1.06076	C.I. 13020	Indicator dye	25 g, 100 g
Methyl yellow 4-(Dimethylamino) -azobenzene Dimethyl yellow	1.03055	C.I. 11020	Indicator dye	10 g
Morin GR	1.06098	C.I. 75660	Reagent for aluminum	5 g
Naphthol green B	1.01306	C.I. 10020	Microscopy connective tissue: 0.06 g naphthol green B in 100 ml distilled acidified water	10 g
Neocarmine MS "Fesago"	1.06731	-	Dye reagent for detection of textile fibers	1 l
Neocarmine W "Fesago"	1.06732	-	Dye reagent for detection of textile fibers	1 l

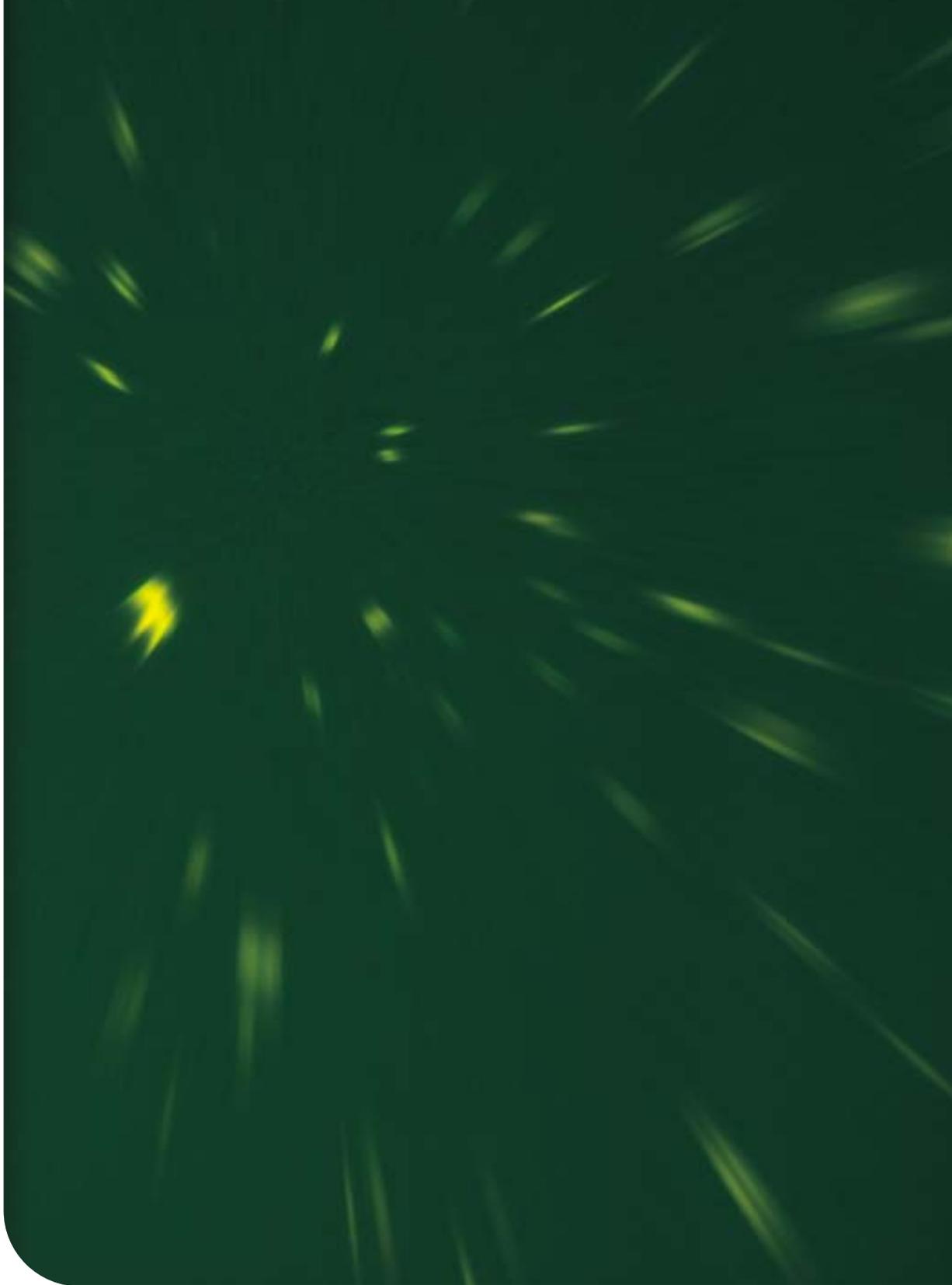
Product	Cat. No.	Color Index-No.	Directions for use	Package size
Nitro blue tetrazolium (NBT)	1.24823	-	Microscopy detection of succino- dehydrogenase, NBT test	500 mg
Oracet blue 2 R	1.01487	C.I. 61110	Indicator dye	5 g
Rhodamine B Rhodamine O Brilliant pink B	1.07599	C.I. 45170	Microscopy vital and fluorescent staining: solution 1 : 1,000 in tap water	25 g, 100 g
Tetrazolium blue	1.08103	-	Microscopy	5 g
Tetrachloroauric(III) acid Trihydrate 99.5% GR, ACS	1.01582	-	Demonstration of glia structures by gold impregnation: 1% solution	1 g, 5 g (ampoules)
Thymol blue, ACS	1.08176	-	Vital staining: 1 : 10,000 with physiological saline solution or Ringer solution; indicator dye	5 g, 25 g
Titan yellow	1.01307	C.I. 19540	Reagent for magnesium	25 g
2,3,5-Triphenyltetrazolium- chloride (TT)	1.08380	-	Microbiology culture medium additive for TTC broth	10 g, 100 g
Trypan blue	1.11732	C.I. 23850	Microscopy vital staining: 0.5 g in 100 ml distilled water	25 g
Wright's eosin- methylene blue	1.09278	-	Dye mixture for microscopy blood smears: 0.24 g Wright's eosin-methylene blue in 100 ml methanol; leave to stand for 5 days and filter	25 g



Fluorescence dyes

In fluorescence microscopy, preparations are irradiated with short-wave light and the long-wave light (fluorescence) emitted as a result by certain structures or dyes is observed. Long-wave ultraviolet (UV) light, or blue-violet light, is used for this purpose. Initially, the natural fluorescence emitted by samples was analyzed; later, non-fluorescing preparations were labeled with small quantities of fluorescing dye and analyzed under the microscope. Fluorescent dyes are used for the staining and visualization of cells, cell components, chromosomes, bacteria and for the detection of antigen-antibody reactions.

Product	Cat. No.	Emission (nm)	Fluorescence (nm)	Directions for use	Package size
Acid fuchsin Certistain®	1.05231	540	630	Bone	25 g
Acridine orange Certistain®	1.15931	470	530-650	Bacteria, DNA	25 g
Auramine O	1.01301	460	550	Mycobacteria	50 g
Calcein	1.02315			Bone	5 g
DAPI	1.24653	340	488	Chromosomes, chlamydia	100 mg
FITC I	1.24546	490	525	Proteins antigen-antibody reactions	250 mg
Pararosaniline Certistain®	1.07509	570	625	DNA Feulgen	25 g
Pyronine G Certistain®	1.07518	410	540		5 g
Rhodamine B	1.07599	540	625	Proteins	25 g, 100 g



3 Products for bacteriology

Microbiology is an independent discipline within the scope of clinical diagnosis and industrial quality control. In order to make microorganisms suitable for microscopic analysis they have to be stained with suitable dyes. Gram-staining and the detection of mycobacteria are of particular importance. Bacterial staining, with the exception of supra-vital staining (e.g. fluorescent staining), is carried out on heat-fixed cells.



Culture, Gram-positive,
Gram-color modified, phenol-free

Staining kits and staining solutions for bacteriology

Gram-color Gram-staining enables bacteria to be differentiated into Gram-positive and Gram-negative types. In this process, aniline dye reacts with iodine in the cell wall to form an iodine-dye complex. In the case of Gram-positive bacteria, the iodine-dye complex cannot be released from the cell using destaining agents such as alcohol or acetone; the cell thus retains its blue-violet color. In the case of Gram-negative bacteria, the iodine-dye complex is dissolved and the cell can be counter-stained with safranin orange or carbol fuchsin to produce a pink to red color.

Product	Cat. No.	Directions for use	Package size
Gram-color	1.11885	Staining kit for Gram staining on staining bench, in coplin jars and MIRASTAINER® Result: Gram-positive bacteria: dark violet Gram-negative bacteria: orange	1 pack 500 ml crystal violet sol., 500 ml Lugol's solution stabilized with PVP, 2 x 500 ml decolorisation solution, 500 ml safranin solution

Gram individual solutions

Gram's crystal violet solution	1.09218		500 ml, 2.5l
Gram's safranin solution	1.09217		500 ml, 2.5l
Gram's decolorisation solution	1.10218		500 ml, 2.5l
Lugol's solution	1.09261	1% aqueous solution of iodine (0,33%) and potassium iodide (0.67%)	250 ml, 1l
Lugol's solution stabilized with PVP	1.00567	For the Gram stain	1l

Gram-color modified, phenol-free

Product	Cat. No.	Directions for use	Package size
Gram-color modified, phenol-free	1.01603	Staining kit for modified Gram staining on staining bench Result: Gram-positive bacteria: dark violet Gram-negative bacteria: red	1 pack 100 ml crystal violet sol., 100 ml sodium hydrog. carbonate sol., Bottle for working sol., 190 ml iodine sol., PVP stabilized, 190 ml decolorisation sol., 190 ml fuchsin solution

Staining of mycobacteria

Tb-color

Tb-color is a staining kit for the microscopic analysis of mycobacteria. The Tb-color staining technique is based on a modified Ziehl-Neelsen method and is characterised by the fact that the carbol fuchsin solution need not be heated. Thus, the release of toxic phenol vapor is avoided. The bright red acid-resistant rods can be clearly seen against the green background.

Product	Cat. No.	Directions for use	Package size
Tb-color	1.16450	Staining kit for cold staining method in coplin jars and MIRASTAINER® Result: acid-fast bacteria: red background: green	1 pack 500 ml Sputofluol® 500 ml carbol fuchsin sol. 500 ml hydrochloric-acid-alcohol 500 ml malachite green sol.

Tb-color individual solutions

Tb-color Carbol fuchsin solution	1.08512	Cold staining of mycobacteria	500 ml, 2.5 l
Tb-color Malachite green (oxalate) solution	1.10630	Counter-staining	500 ml, 2.5 l
Sputofluol®	1.08000	Pre-treatment of specimens in the detection of mycobacteria	1 l
Hydrochloric acid in ethanol	1.00327	Decolorisation solution (0.75% hydrochloric acid)	1 l, 5 l

Tb-color modified

Product	Cat. No.	Directions for use	Package size
Tb-color modified	1.00497	Staining kit for the detection of mycobacteria (AFB) by hot staining method Result: acid-fast bacteria: red background: light blue	1 pack 500 ml carbol fuchsin sol. 2 x 500 ml decolorisation solution 500 ml methylene blue sol.

Ziehl-Neelsen-staining

Product	Cat. No.	Directions for use	Package size
Ziehl-Neelsen Carbol fuchsin solution	1.09215	Hot staining for acid-fast bacteria, counter-staining with methylene blue Result: acid-fast mycobacteria: red background: light blue	100 ml, 500 ml, 2.5l

Tb-fluor

The Tb-fluor staining kit can be used for the fluorescence detection of mycobacteria under the microscope. The mycobacteria are stained with auramine-rhodamine solution; depending on the filter combination used, the mycobacteria appear either red-orange or green and can be clearly seen against the dark background. Tb-fluor can be used for sputum, pleural effusions, bronchial lavage, urine and for histological sections.

Product	Cat. No.	Directions for use	Package size
Tb-fluor	1.09093	Fluorescence microscopical detection of mycobacteria Result: acid-fast bacteria: red-orange or yellow-green fluorescence background: dark	1 pack 500 ml auramine- rhodamine solution, 3 x 500 ml decolorisation solution, 2 x 500 ml counter- staining solution
Tb-fluor, phenol-free	1.01597	Fluorescence staining kit for the microscopic investigation of mycobacteria Result: acid-fast bacteria: red-orange or yellow-green fluorescence background: dark	1 pack staining kit: 200 ml auramine-rhodamine staining solution, phenol-free; 2 x 200 ml decolorisation solution; 200 ml counter-staining solution (KMnO ₄)

Neisser-staining

When staining diphtheria bacteria according to Neisser, methylene blue and crystal violet are bound, at suitable pH, in the polar body structure but not in the body of the bacteria. When counter-stained, chrysoidine is absorbed, particularly by the bacteria body but only partly by the polar bodies.

Product	Cat. No.	Directions for use	Package size
Neisser's solution 1 a Methylene blue solution	1.09238	Staining result: pole corpuscles dark blue to black, bacteria body bluish	100 ml
Neisser's solution 1 b Crystal violet solution	1.09239		100 ml
Neisser's solution II Chrysoid solution	1.09240		100 ml

Trichomonad staining

For the visualization of trichomonads in vaginal smears and urine sediment using Cytocolor®

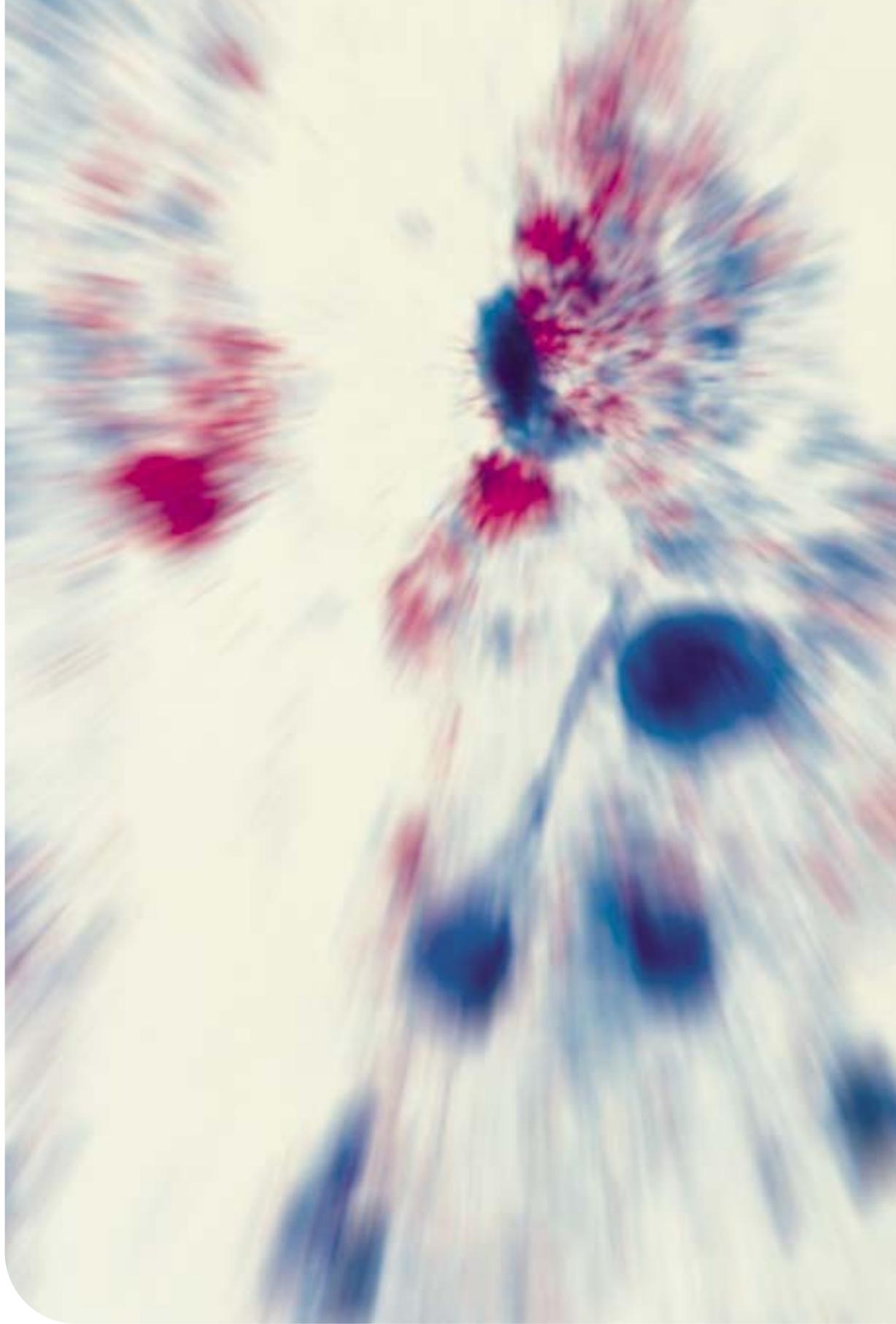
Product	Cat. No.	Directions for use	Package size
Cytocolor®	1.15355	Modified Papanicolaou staining trichomonad staining: gray-blue to gray-green	1 pack

Staining solutions for bacteriology

Product	Cat. No.	Directions for use	Package size
Giemsa's azure eosin methylene blue solution	1.09204	Staining of spirochetes: spirochetes pallida light-pink, other spirochetes reddish to bluish-violet	100 ml, 500 ml, 1 l, 2.5 l
Lactophenol blue solution	1.13741	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	1.01287	Methylene blue staining is suitable for general bacteriological control stainings, e.g. of gonococcae, lactic acid bacteria and for visualization of the pole corpuscles of pasteurella	100 ml, 500 ml, 2.5 l

Other products and auxiliaries for bacteriology

Product	Cat. No.	Directions for use	Package size
Anaerobic jar	1.16387	Volume 2.5 l	1 unit
Chromium(VI) oxide, GR	1.00229	Stain for flagellum staining, chromium acid solution: chromium(VI) oxide 2.5 g; aqua dest. ad 100 ml. Tanning mixture see tannic acid.	250 g
Gelatine for microbiology	1.04070	Bloom number about 200	500 g
Gentamycin solution	1.11977	Microbiology and virology additive for culture media	1 pack 10 ml
Griess-Ilosvay 's reagent	1.09023	Reagent solution for detection of nitrite produced by micro- organisms, identification of nitrate- reducing microorganisms	500 ml
Kovac's Indole reagent	1.09293	Detection of Indole formation	100 ml
Lactic acid (approx. 90%), extra pure, Ph Eur, BP, E 270	1.00366	Neisser's staining: 0.9 ml to 100 ml Lugol's solution	2.5 l
Plate basket (for anaerobic jar)	1.07040	12 petri dishes	1 pack
RINGER tablets	1.15525	Preparation of an 1/4 strong Ringer's solution	1 pack 100 tablets
Sodium hydroxide solution min. 10% (1.11), GR for analysis	1.05588	Visualization of fungi in a native preparation: warm carefully 1 drop on the slide	1 l
Sodium thioglycollate	1.06691	Culture medium additive for anaerobic bacteria	500 g
Sterikon® plus bioindicator	1.10274.0001	Controlling autoclaving	1 pack 15 ampoules
Sterikon® plus bioindicator	1.10274.0002	Controlling autoclaving	1 pack 100 ampoules
Tannic acid powder, extra pure, Ph Eur, USP	1.00773	Tanning for flagellum: tannic acid solution: 20 g in 100 ml aqua dest. tanning mixture: mix 100 ml tannic acid solution with 15 ml chromium acid solution; store 2 days at room temperature, filter before use	1 kg
UV lamp 4 W/366 nm	1.13203	Detection of fluorescence after MUG decomposition by E.coli for microbiology	1 pack
MIRASTAINER®	1.11295	Automated bacteriological staining system	1 unit



4 Products for 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 e.g. 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”.



Cervix smear, normal squamous epithel,
modified Papanicolaou staining

Staining solutions for cytology

Papanicolaou solutions

The cytological staining technique developed by Papanicolaou is still the standard method in cancer and hormone cycle diagnosis. Using the classical Harris hematoxylin solution (Papanicolaou solution 1 a), excellent nucleic staining can be achieved in 3-5 minutes; the modified hematoxylin solution S (Papanicolaou solution 1 b) provides good nucleic staining in 2-3 minutes.

Differential cytoplasm staining can be achieved using orange stains in conjunction with polychrome solutions. 4 different polychrome solutions are available; they differ in the various concentrations of the components - light green SF, eosin G and Bismarck brown - and produce different cytoplasm stains.

In cytological gynecology, polychrome solutions EA 31 (3 a) and EA 50 (3 b) are mostly used. In non-gynecological cytology, polychrome solutions EA 65 (3 c and 3 d) can be used for the analysis of sputum, bronchial-, gastric- and intestinal secretions.

Product	Cat. No.	Directions for use	Package size
Papanicolaou's solution 1 a Harris' hematoxylin solution	1.09253	Nuclear staining	500 ml, 1 l, 2.5 l
Papanicolaou's solution 1 b Hematoxylin solution S	1.09254	Nuclear staining	500 ml, 2.5 l
Papanicolaou's solution 2 a Orange G solution (OG 6)	1.06888	Cytoplasm staining of mature and keratinized cells	500 ml, 1 l, 2.5 l
Papanicolaou's solution 2 b Orange II solution	1.06887	Cytoplasm staining of mature and keratinized cells	500 ml, 2.5 l
Papanicolaou's solution 3 a Polychrome solution EA 31	1.09271	Cytoplasm staining	500 ml, 2.5 l
Papanicolaou's solution 3 b Polychrome solution EA 50	1.09272	Cytoplasm staining	500 ml, 1 l, 2.5 l

Product	Cat. No.	Directions for use	Package size
Papanicolaou's solution 3 c Polychrome solution EA 65	1.09270	Cytoplasm staining esp. for non-gynecological specimen, color effect light red	100 ml
Papanicolaou's solution 3 d Polychrome solution EA 65	1.09269	Cytoplasm staining esp. for non-gynecological specimens, color effect pale blue-green	100 ml, 2.5l

Cytocolor® Cytocolor® is a staining kit capable of producing stains within 3 minutes. These stains provide complete information on dignity and additional information on hormone status and vaginal flora in gynecological smears. The difference between these and classical Papanicolaou stains is that Cytocolor® requires no orange stain; both mature and keratinized cells appear pink instead of orange.

Product	Cat. No.	Directions for use	Package size
Cytocolor® cytological standard stain acc. to Szczepanik	1.15355	Rapid staining kit for modified Papanicolaou's staining	1 pack 500 ml mod. hematoxylin solution acc. to Szczepanik, 500 ml mod. polychrome solution, 3 x 500 ml 2-propanol GR, 500 ml xylene

Hematoxylin solutions modified according to Gill

These staining solutions are prepared using Certistain® hematoxylin. Their balanced formulation means that they need not be filtered before use.

Product	Cat. No.	Directions for use	Package size
Hematoxylin solution modified acc. GILL II	1.05175	Nuclear staining	500 ml, 2.5l
Hematoxylin solution modified acc. GILL III	1.05174	Nuclear staining	500 ml, 1l, 2.5l

Shorr solution

In contrast to Papanicolaou staining, Shorr staining is used exclusively in cytological hormonal applications. However, in such applications, they are superior to Papanicolaou staining as they can differentiate better between eosinophilia and cyanophilia.

The ratio eosinophilic to cyanophilic cells enables information to be gathered relating to the effect of follicle hormone and corpus luteum. The number of eosinophilic cells increases under the effect of follicle hormone whereas cyanophilic cells increase under the corpus luteum hormonal effect.

Product	Cat. No.	Directions for use	Package size
Shorr solution	1.09275	Diagnosis of hormonal disorders	500 ml

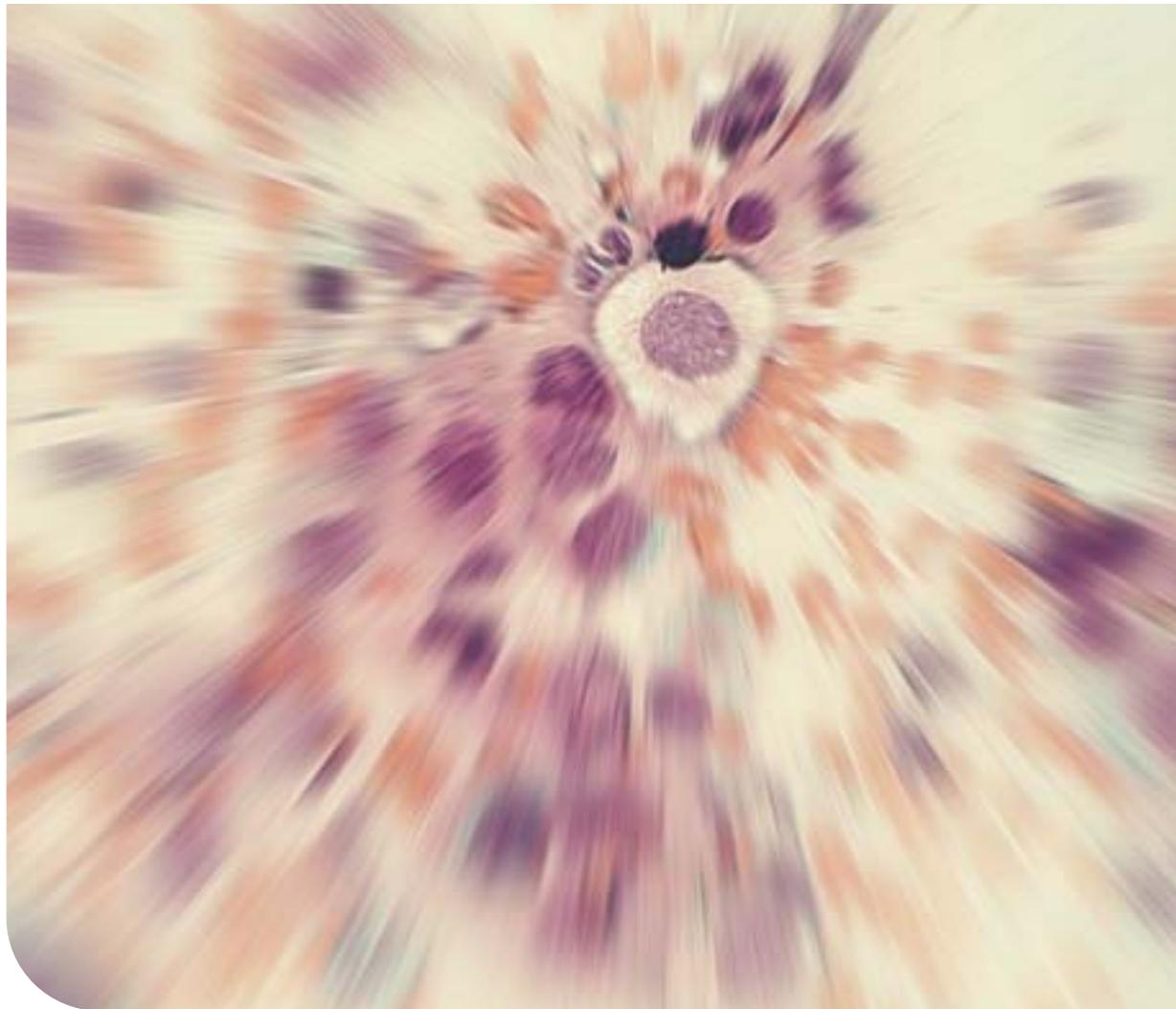
Other staining solutions

Product	Cat. No.	Directions for use	Package size
Giemsa's azure-eosin methylene blue solution	1.09204	Staining of non-gynecological specimens	100 ml, 500 ml, 1 l, 2.5 l
Hemacolor®	1.11661	Fast staining of non-gynecological specimens	1 pack 3 x 500 ml, 6 buffer tablets
Hemacolor®	1.11674	Fast staining of non-gynecological specimens	1 pack 3 x 100 ml 3 buffer tablets

Other products and auxiliaries for cytology

Product	Cat. No.	Directions for use	Package size
Merckofix®	1.03981	Spray fixative for cytodiagnosis	100 ml
Entellan® (refractive index n_{D20° approx. 1.49-1.50)	1.07960	Permanent preparations	500 ml
Entellan® new (refractive index n_{D20° approx. 1.49-1.50)	1.07961	Permanent preparations, without bubble formation at high ambient temperatures	100 ml, 500 ml
Merckoglas® (refractive index n_{D20° approx. 1.50-1.51)	1.03973	Mounting agent for homogenous coating of cytological smears, instead of cover slips	500 ml
Neo-Mount® (refractive index n_{D20° approx. 1.43-1.46)	1.09016	Mounting medium in conjunction with Neo-Clear®	500 ml
Neo-Clear®	1.09843	Substitute for xylene	5 l
Ethanol, absolute, GR, ACS, ISO, Reag. Ph Eur	1.00983	Dehydration	1 l, 2.5 l
Ethanol, denatured, GR	1.00974	Dehydration	1 l, 5 l
2-Propanol, GR, ACS, ISO	1.09634	Substitute for ethanol	1 l, 2.5 l

Product	Cat. No.	Directions for use	Package size
Immersion oil acc. to DIN ISO 8036-1, mod. (refractive index n_{D20° approx. 1.5175-1.5185)	1.15577		100 ml
Xylene, GR, ACS, ISO, Reag. Ph Eur	1.08681		1 l, 2.5 l
MIRASTAINER®	1.11295	Automated staining system for modified Papanicolaou staining	1 unit



5 Products for hematology

Panoptic staining according to Pappenheim, and staining according to Giemsa, Wright or Leishman have long been standard techniques in hematological diagnostic procedures. Formerly, practically all hematological samples were analyzed using such staining methods. Nowadays, most samples are analyzed using semi- or fully automatic hematological 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.

Cytochemical methods are used for the differential diagnosis of leukaemic disease and if necessary supplemented by immunohematological methods.



Blood smear, Acute Lymphatic Leukaemia (ALL), Pappenheim

Staining kits and solutions for hematology

Hemacolor® the rapid staining kit

Hemacolor® is a staining kit comprising 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.

Hemacolor® produces a stain corresponding to Pappenheim. The procedure requires ca. 1/2 min and can be carried out manually or automatically. Apart from time-saving, the shelf life of the solutions is a further advantage. In addition to blood and bone marrow smears, Hemacolor® 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® Staining set for hematological and clinical specimens	1.11674	Rapid staining of blood smears and bone marrow and for several non-hematological specimens	1 pack 3 x 100 ml, 3 buffer tablets
Hemacolor® Staining set for hematological and clinical specimens	1.11661	Rapid staining of blood smears and bone marrow and for several non-hematological specimens	1 pack 3 x 500 ml, 6 buffer tablets
Single solutions			
Hemacolor® Solution 1	1.11955	Fixing solution, contains methanol	2.5l
Hemacolor® Solution 2	1.11956	Color reagent red, eosin solution	2.5l
Hemacolor® Solution 3	1.11957	Color reagent blue, thiazine solution	2.5l

Auto-Hemacolor®

The Auto-Hemacolor® System was developed for use in conjunction with the HemaTek®* Slide Stainer for automatic blood and bone marrow smears. The kit comprises staining solution, buffer and washing solution.

Product	Cat. No.	Directions for use	Package size
Auto-Hemacolor®	1.15213	Staining set containing staining solution, buffer solution and washing solution	1 pack

Other staining solutions

Product	Cat. No.	Directions for use	Package size
Giemsa's azure-eosin methylene blue solution	1.09204	Differential blood staining; demonstration of blood parasites and protozoa (dilute approx. 1 : 20)	100 ml, 500 ml, 1 l, 2.5 l
Leishman's eosin-methylene blue solution	1.05387	Differential blood staining	500 ml
May-Grünwald's eosin-methylene blue solution	1.01424	Differential blood staining	100 ml, 500 ml, 1 l, 2.5 l
Wright's eosin-methylene blue solution	1.01383	Differential blood staining	100 ml, 500 ml, 2.5 l

Staining foils for microscopy

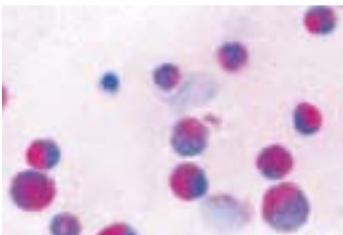
Foil staining provides a possibility of staining without having to handle staining solutions. The technique is used for staining blood and bone marrow smears but can also be used in clinical cytology for e.g. urine analysis, pleural effusions, ascites analysis and for sputum and sperm. Sangodiff® containing the classical staining mixture azure-eosin-methylene blue also enables malaria plasmodia in blood to be visualized.

Product	Cat. No.	Directions for use	Package size
Sangodiff®	1.15332	Manual staining of blood smears and bone marrow smears	1 pack 100 staining foils, 15 ml buffer solution

* Trademark of Miles company, USA

Cytochemical reagents

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



Bone marrow,
LEUCOGNOST® NASDCL

LEUCOGNOST®

LEUCOGNOST® kits provide the user with all the necessary reagents and easy-to-follow staining instructions. LEUCOGNOST® kits now enable differential analysis for leukaemia to be carried out in international FAB classes by smaller laboratories, hence making the technique no longer the preserve of the larger diagnostic centers.

Product	Cat. No.	Directions for use	Package size
LEUCOGNOST® ALPA	1.16300	Detection of the alkaline leukocyte phosphatase activity in leukocytes	1 pack 12 staining batches
LEUCOGNOST® EST	1.16301	Detection of the alpha naphthyl acetate esterase reaction in leukocytes	1 pack 12 staining batches
LEUCOGNOST® PAS	1.16302	Detection of the Periodic Acid Schiff reaction in leukocytes	1 pack 12 staining batches
LEUCOGNOST® POX	1.16303	Detection of the peroxidase reaction in leukocytes	1 pack 12 staining batches
LEUCOGNOST® SP	1.16304	Detection of the acid phosphatase reaction in leukocytes	1 pack 12 staining batches
LEUCOGNOST® NASDCL	1.16198	Detection of the naphthol AS-D chloroacetate esterase reaction in leukocytes	1 pack 12 staining batches
LEUCOGNOST® Basic Set	1.16305	Reagent set for diagnosis with LEUCOGNOST® kits	1 pack 500 ml Mayer's hemalum, 500 ml Schiff's reagent, 500 ml ethanol G,R 2 x 500 ml LEUCOGNOST® fixing mixture, 20 ml Aquatex®, embedding agent, 20 ml acetone GR
LEUCOGNOST® fixing mixture	1.12327	Fixing reagent for diagnosis with LEUCOGNOST®	500 ml

HEMATOGNOST Fe®

HEMATOGNOST Fe® contains all the necessary reagents for carrying out the visualization of erythrocyte iron in the easiest possible way. The Berlin Blue staining technique used provides valuable diagnostic information on numerous diseases connected with the utilization of iron (e.g. anemia, thalassemia) and can also be used with tissue sections (e.g. liver sections, in cases of suspect hemochromatosis).

Product	Cat. No.	Directions for use	Package size
HEMATOGNOST Fe®	1.12084	Iron stain (Prussian blue) in bone marrow sections and blood smears and also in tissue sections	1 pack 8 staining batches

Reagents for manual blood cell counting

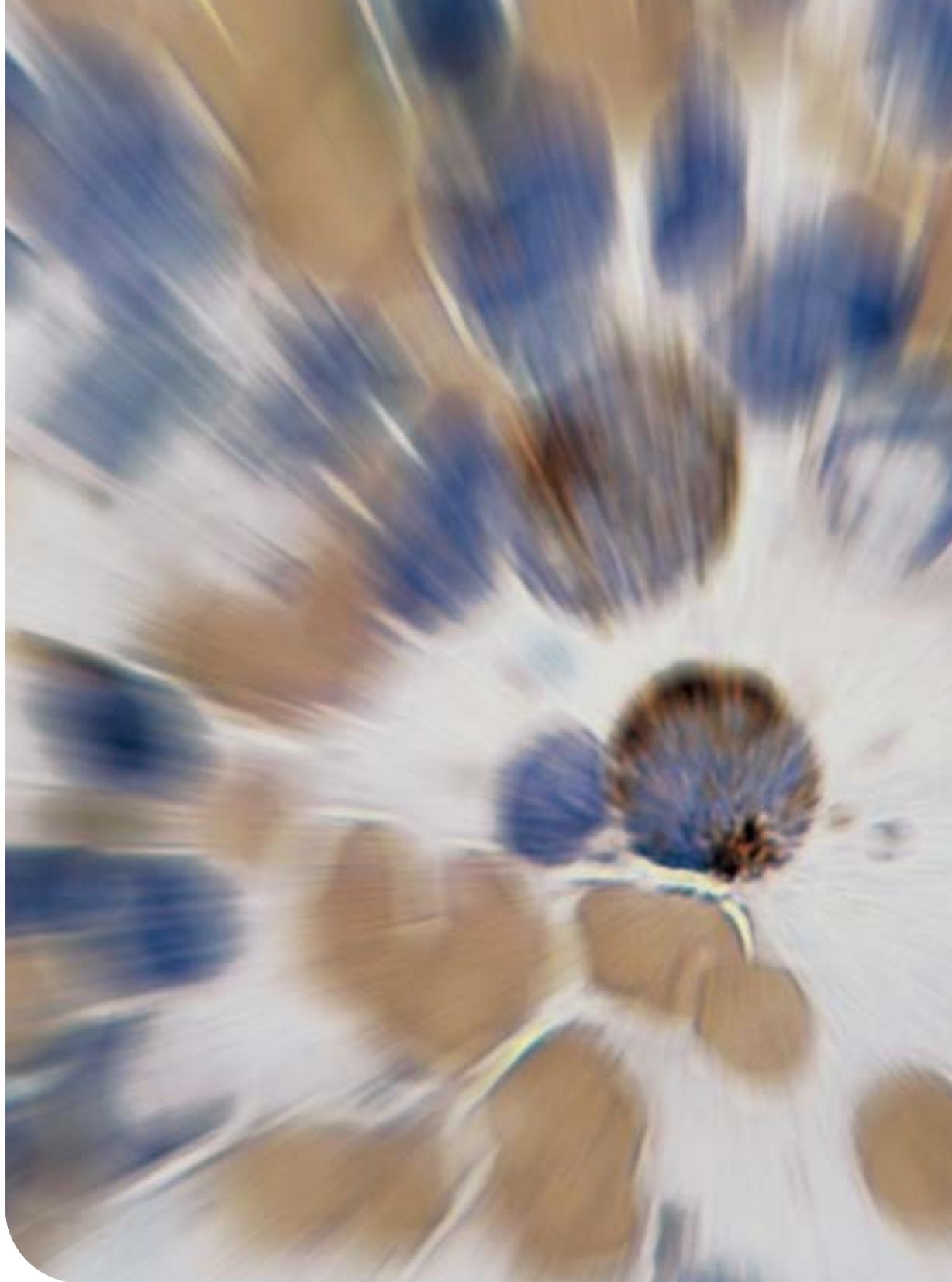
The counting of erythrocytes, leukocytes, thrombocytes and reticulocytes is an important part of routine hematological diagnosis. Today, this is mostly done on automatic instruments. Manual counts are carried out if the results are very low or in particularly difficult cases.

Product	Cat. No.	Directions for use	Package size
Brilliant cresyl blue solution (0.5% physiological solution)	1.01384	Staining of reticulocytes; the Substancia Granulo-Villamentosa of the reticulocytes become black-blue	100 ml
Hayem's reagent Blood isotonic mercury (II)-chloride solution	1.09260	Counting erythrocytes in the counting chamber	100 ml, 500 ml
Türk's solution Acetic acid gentian violet solution	1.09277	Counting leukocytes in the counting chamber	100 ml, 500 ml
Thrombo-Count Ammonium oxalate solution with addition of mercury (II)-chloride	1.13795	Direct counting of thrombocytes in the counting chamber	50 ml

Other products and auxiliaries for hematology

Product	Cat. No.	Directions for use	Package size
Acetone GR	1.00014	Reagent solution B with LEUCOGNOST® EST	1l, 2.5l
Aquatex®	1.08562	Aqueous mounting medium in cytochemistry	50 ml
Ethanol (absolute), GR, ACS, ISO, Reag. Ph Eur	1.00983	Diluent for LEUCOGNOST® POX, reagent 1	1l
Ethanol, denaturated, GR	1.00974	Dehydration agent	1l, 2.5l

Product	Cat. No.	Directions for use	Package size
Immersion oil	1.04699		100 ml, 500 ml
Immersion oil acc. to DIN ISO 8036-1, mod.	1.15577		100 ml
Mayer's hemalum solution	1.09249	Counter-staining in cytochemistry	500 ml, 1 l, 2.5 l
Methanol, GR	1.06009	Fixing and dehydration agent	1 l, 2.5 l
Buffer tablets pH 6.4 acc. to Weise	1.11373	Buffer solution/ rinsing solution pH 6.4	1 pack 100 tablets
Buffer tablets pH 6.8 acc. to Weise	1.11374	Buffer solution/ rinsing solution pH 6.8	1 pack 100 tablets
Buffer tablets pH 7.2 acc. to Weise	1.09468	Buffer solution/ rinsing solution pH 7.2	1 pack 100 tablets
Schiff's reagent	1.09033	Reagent solution for LEUCOGNOST® PAS	500 ml
Titriplex® III, GR	1.08418	Preparation of EDTA blood	100 g, 200 g
MIRASTAINER®	1.11295	Automated hematological staining in small to middle sized laboratories	1 unit



6 Products for 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 methods must be used. Differential staining and visualization techniques were then developed. These enabled 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.



Intestine, paraffin section,
H & E

Staining solutions for histology

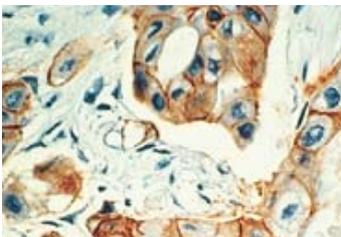
Product	Cat. No.	Directions for use	Package size
Mayer's hemalum solution	1.09249	Nuclear staining	500 ml, 1 l, 2.5 l
Hematoxylin solution mod. acc. to Gill III	1.05174	Nuclear staining	500 ml, 1 l, 2.5 l
Giemsa's azure-eosin methylene blue solution	1.09204	Staining of bone marrow sections and lymph node sections	100 ml, 500 ml, 1 l, 2.5 l
Eosin Y solution, 0.5% aqueous	1.09844	Counterstaining in H & E	1 l
Schiff's reagent	1.09033	PAS method, Detection of polysaccharides	500 ml
Alcian blue solution	1.01647	Alcian blue PAS staining	500 ml

Staining kits for histology

Product	Cat. No.	Directions for use	Package size
Weigert's iron hematoxylin kit	1.15973	Nuclear staining in connective tissue stainings	1 pack 500 ml Weigert's solution A, 500 ml Weigert's solution B
Elastica van Gieson kit	1.15974	Demonstration of elastic fibers	1 pack 500 ml Weigert's solution A, 500 ml Weigert's solution B, 500 ml Elastin sol. acc. to Weigert, 500 ml Picrofuchsin solution acc. to. van Gieson
Kit for DNA staining acc. to Feulgen	1.07907	Feulgen staining for quantitative DNA measurement	1 pack 2 x 250 ml 5M HCl, 2 x 250 ml Schiff's reagent, 250 ml Sodium disulfite sol. conc.
PAS staining kit	1.01646	Visualization of mucopolysaccharides	1 pack 500 ml Schiff's reagent, 500 ml periodic acid solution
Masson Goldner trichrome staining kit	1.00485	Visualization of connective tissue	1 pack 500 ml azophloxin solution, 500 ml tungstophosphoric acid orange G solution, 500 ml light green SF solution, 500 ml acetic acid solution 10%
HEMATOGNOST Fe®	1.12084	Detection of free ionic iron with Prussian blue method in tissue sections	1 pack 8 staining batches
Tb-color	1.16450	Detection of mycobacteria in histological sections with cold staining	1 pack 500 ml Sputofluor®, 500 ml carbol-fuchsin solution, 500 ml decolorisation solution, 500 ml malachite green solution
Tb-fluor	1.09093	Fluorescence method for mycobacteria detection	1 pack 500 ml auramine-rhodamine solution, 500 ml decolorisation solution, 500 ml counterstaining solution
Methenamine silver plating kit acc. to Gomori	1.00820	Visualization of basal membranes, bacteria and fungi	1 pack 100 ml periodic acid solution, 3 x 100 ml silver nitrate solution, 10 tabs methenamine borate tablets, 100 ml gold chloride solution, 100 ml sodium thiosulfate solution, 100 ml light green SF solution
Congo red staining kit	1.01641	For detection of amyloid acc. to Highman	1 pack 100 ml congo red solution, 2 x 100 ml KOH solution

Immunohistochemical reagents

Immunohistochemical methods are indispensable in the histopathological laboratory. Immunohistochemical information, together with already available morphological data obtained from a tissue section enable histological diagnoses such as e.g. anaplastic tumors or metastases to be confirmed. Immunohistochemistry thus contributes considerably towards reliable prognosis and therapy planning in oncology.



Mamma Ca, TISSUGNOST® Uni-Pak
EGF-R, E 30

TISSUGNOST® Uni-Pak

TISSUGNOST® Uni-Pak is a detection system based on the streptavidin-biotin reaction. The highly sensitive detection system, capable of being used in conjunction with paraffin and cryo-sections, are suitable for use with all primary antibodies from mice, rabbits, goats and sheep. All those chromogenes suitable for use with peroxidases can be used. Standardization of the results obtained is achieved by optimal adaptation of the reagents used. The use of coplin jars makes for ease of use and saves both time and reagents (no drops, no wiping). If required, the systems can be used even more economically by using the automatic MIRASTAINER®.

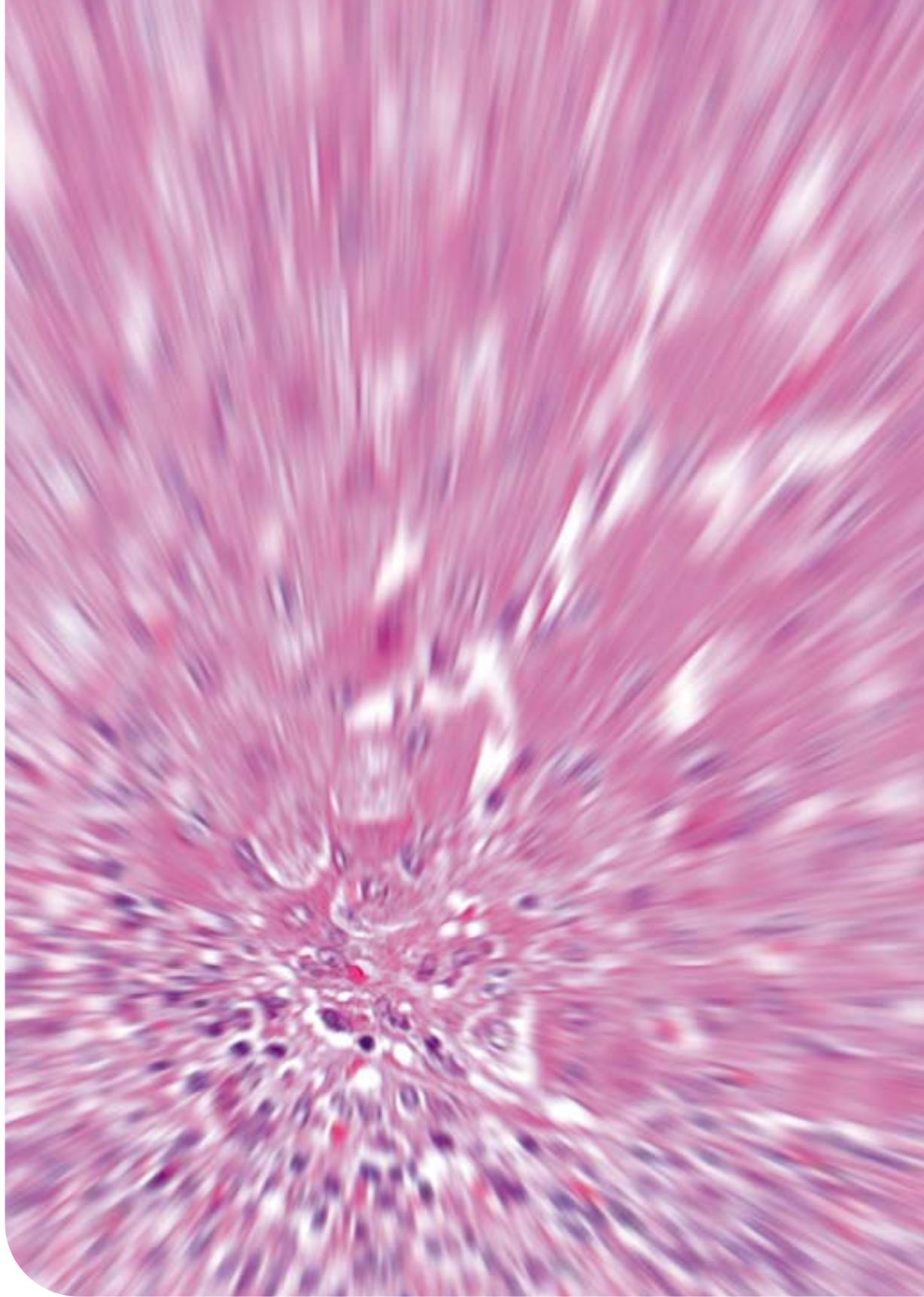
Product	Cat. No.	Directions for use	Package size
TISSUGNOST® Uni-Pak	1.20053	Universal immunohistochemical detection system on streptavidin-biotin basis	1 pack for up to 560 tests
Monoclonal antibody			
TISSUGNOST® anti-EGF-R >P<	1.20050	Detection of EGF-R on formalin-fixed paraffin sections (anti-Epidermal growth factor receptor, E 30)	50 mg lyophilized
Chromogenes			
TISSUGNOST® chromogene reagent AEC (3-amino-9-ethylcarbazol) with buffer conc.	1.20017	Aqueous specimens	1 pack 2 x 10 ml
DAB buffer tablets (3,3'-diamino-benzidine-tetrahydrochloride)	1.02924	Non-aqueous specimens	50 tablets

Product	Cat. No.	Directions for use	Package size
Mounting media			
Aquatex®	1.08562	Aqueous mounting medium	50 ml
Entellan® new	1.07961	Non-aqueous mounting medium	100 ml, 500 ml
Neo-Mount®	1.09016	Non-aqueous mounting medium after Neo-Clear®	500 ml
Auxiliaries			
Hydrogen peroxide solution 30% medical, stabilized, extra pure Ph Eur, BP, USP	1.08597		1 l, 2.5 l
Pronase E	1.07433	Protease digestion	1 g
MIRASTAINER®	1.11295	Staining system for semi-automated application of TISSUGNOST® detection systems	1 unit

Other products and auxiliaries for histology

Product	Cat. No.	Directions for use	Package size
Acetic acid, 100%, GR, ACS/350	1.00063	Additive for Bouin's solution	1 l, 2.5 l
Acetone GR, ACS, ISO, Reag. Ph Eur	1.00014	Dehydration	1 l, 2.5 l
Albumin (from bovine blood)	1.12018	Mounting histological sections 10% albumin-glycerol mixture [1+1]	5 g, 25 g
Aluminum chloride	8.01081	Mucicarmine staining	100 g, 500 g
Aluminum hydroxide	1.01093	Mucicarmine staining	1 kg
Aniline, GR	1.01261	Azan staining	250 ml, 1 l
Calcium chloride dihydrate, GR	1.02382	Fixing of tissue	100 g, 500 g
Iron(III) chloride hexahydrate, GR	1.03943	Weigert's solution	100 g, 250 g
Entellan® new	1.07961	Mounting medium	100 ml, 500 ml
Ethanol, absolute, GR, ACS, ISO, Reag. Ph Eur	1.00983	Dehydration agent	1 l, 2.5 l
Ethanol, denatured, GR	1.00974	Dehydration agent	1 l, 2.5 l
Gold trichloride acid trihydrate, GR	1.01582	Gold chloride solution	1 g, 5 g
Histosec®	1.11609	Paraffin embedding	4 x 2.5 kg, 25 kg
Histosec® without DMSO	1.15161	Paraffin embedding	4 x 2.5 kg, 25 kg
Hydroquinone, for synthesis	8.22333	Hydroquinone solutions	250 g, 1 kg
Iodine, resublimed, GR, ACS, ISO	1.04761	Weigert's iodine solution	250 g, 500 g
Kaiser's glycerol gelatine	1.09242	Aqueous mounting agent	100 g
Methenamine cryst., extra pure, USP	1.04339	Additive for silver solution	1 kg
Molybdatophosphoric acid hydrate, GR, ACS, Reag. Ph Eur	1.00532	Trichrome staining	25 g, 100 g
Neo-Clear®	1.09843	Xylene substitute	5 l
Neo-Mount®	1.09016	Non-aqueous mounting medium after Neo-Clear®	500 ml

Product	Cat. No.	Directions for use	Package size
Periodic acid crystals, GR	1.00524	PAS reaction	25 g, 100 g
Potassium hexacyanofer- rate(II) trihydrate, GR, ACS, ISO, Reag. Ph Eur	1.04984	Iron staining	100 g, 500 g
Potassium iodide neutral, GR, ISO, Reag. Ph Eur	1.05043	Weigert's iodine solution	250 g, 500 g
2-Propanol, GR, ACS, ISO, Reag. Ph Eur	1.09634	Dehydration agent	1l, 2.5l
Resorcinol, GR	1.07593	Weigert-Elastin	100 g, 250 g
Schiff's reagent	1.09033	PAS reaction	500 ml
Silver nitrate, GR, ACS, ISO, Reag. Ph Eur	1.01512	Silver staining	25 g, 100 g, 250 g
Silver protein (Albumose silver)	1.07447	Visualization of neurofibrils acc. to Bodian	25 g
Sodium disulfite, GR, ACS, Reag. Ph Eur	1.06528	Sulfite solution (PAS)	100 g, 500 g
Sodium thiosulfate pentahydrate, GR, ACS, ISO, Reag. Ph Eur	1.06516	Sodium sulfate solutions	100 g, 500 g
di-Sodium tetraborate, GR	1.06306	Additive for silver solution	100 g, 250 g
3-(Triethoxysilyl)propyl- amine) for synthesis	8.21619	Silanization 2% in acetone, 5 min	100 ml
Tris(hydroxymethyl)aminomethane, GR for analysis buffer substance ACS, Reag. Ph Eur	1.08382	TRIS buffer Tissue fixation	100 g, 500 g
Tungstophosphoric acid hydrate, GR	1.00583	Additive for trichrome staining	100 g, 250 g
Xylene, GR, ACS, ISO, Reag. Ph Eur	1.08681	Dehydration agent	1l, 2.5l



7 Neo-products

User- and environmental-friendly product line

The Neo-products were developed with the intention of meeting the requirements of increased safety in the laboratory as well as the increasingly stringent regulations introduced by the environmental authorities. Neo-Products are user- and environmentally friendly products for use in medical laboratories. They are designed to minimize the toxic, environment-damaging and unpleasant properties of traditional laboratory products such as fixatives and solvents. However, it is important that the Neo-products should be able to be used in the same way as conventional products; they should also be suitable for routine use. Consumption should be comparable and the results obtained must be identical to those previously obtained. The Neo-product range is new and will be constantly expanded to meet the requirements of users.



Neo-Clear®, Neo-Mount®

Product	Cat. No.	Directions for use	Package size
Neo-Clear®	1.09843	Xylene substitute for histoprocessing deparaffination, dehydration	5l
Neo-Mount®	1.09015	Mounting medium with Neo-Clear®	500 ml

Applications

Histoprocessing
with Neo-Clear®

Paraffin cuts

Deparaffination
with Neo-Clear®

Staining

Dehydration
with Neo-Clear®

Mounting with
Neo-Mount®



Applying **Neo-Clear®** as solvent
and **Neo-Mount®** will result
in outstanding optical property
and ease-of-use.



Indicators, indicator papers and reagent papers

pH-indicators for titrations in aqueous media



Deposits of amyloid in the wall of a blood vessel
(amyloidosis of light chain type)
Congo red staining acc. to Highman

Product	Cat. No.	Uses/directions/pH range	Package size
Alizarin yellow GG	1.06776	pH 10.0-12.1 light yellow/ brownish yellow	10 g
Alizarin red S sodium salt	1.06279	pH 4.3-6.3 yellow/violet	25 g, 100 g
Brilliant green	1.01310	pH 0.0-2.6 yellow/green	50 g
Bromochlorophenol blue	1.03022	pH 3.0-4.5 yellow/purple	5 g
Bromocresol green	1.08121	pH 3.8-5.4 yellow/blue	1 g, 5 g, 25 g
Bromocresol purple	1.03025	pH 5.2-6.8 yellow/purple	5 g, 25 g
Bromophenol blue	1.08122	pH 3.0-4.6 yellow/purple	5 g, 25 g
Bromophenol blue sodium salt	1.11746	pH 3.0-4.6 yellow/purple	5 g
Bromophenol red	1.03023	pH 5.2-6.8 orange-yellow/purple	5 g
Bromothymol blue	1.03026	pH 6.0-7.6 yellow/blue	5 g, 25 g
Bromothymol blue sodium salt	1.01895	pH 6.0-7.6 yellow/blue	10 g
Bromoxyleneol blue	1.03033	pH 5.7-7.4 yellow/blue	5 g
Chinaldin red	1.02282	pH 1.4-2.4 colorless/red	5 g
Chlorophenol red	1.03024	pH 4.8-6.4 yellow/purple	5 g
Congo red	1.01340	pH 3.0-5.2 blue violet/red-orange	25 g, 100 g
m-Cresol purple	1.05228	In the acid range: pH 1.2-2.8 red/yellow in the alkaline range: pH 7.4-9.0 yellow/purple	1 g
Cresol red	1.05225	In the acid range: pH 0.2-1.8 pink-red/yellow in the alkaline range pH 7.0-8.8 orange/purple	5 g, 25 g
Crystal violet	1.01408	pH 0.8-2.6 yellow/ blue violet	10 g
4-Dimethylamino- azobenzene	1.03055	pH 2.9-4.0 red/yellowish orange	10 g
2,4-Dinitrophenol	1.03464	pH 2.8-4.7 colorless/yellow	25 g
Eosin B	1.15934	pH 1.4-2.4 colorless/ fluorescent pink	25 g, 100 g
Eosin Y	1.15935	pH 0.0-3.0 yellow/fluorescent green	25 g, 100 g
Erythrosin B	1.15936	pH 0.0-3.6 orange/red	10 g, 25 g
Epsilon blue	1.06810	pH 11.6-13.0 orange/violet	5 g
Hematoxylin	1.04302	pH 5.0-7.2 yellow/violet	5 g, 100 g

Product	Cat. No.	Uses/directions/pH range	Package size
Indicator liquid with color scale	1.09177	pH 0-5	100 ml
Indicator liquid with color scale	1.09175	pH 4-10	100 ml, 1 l
Indicator liquid with color scale	1.09176	pH 9-13	100 ml
Methyl orange	1.01322	pH 3.1-4.4 red/yellow-orange	25 g, 100 g
Methyl orange solution 0.1%	1.01323	pH 3.1-4.4 red/yellow orange	250 ml, 1 l
Methyl red	1.06076	pH 4.4-6.2 red/yellow-orange	25 g, 100 g
Methyl red sodium salt	1.06078	pH 4.4-6.2 red/yellow-orange	25 g, 100 g
Mixed indicator 5 for ammonia titrations	1.06130	pH 4.4-5.8 red-violet/green	250 ml
1-Naphtholphthalein	1.06246	pH 7.1-8.3 brownish/blue-green	1 g, 5 g
Neutral red	1.01369	pH 6.8-8.0 bluish-red/orange-yellow	25 g, 100 g
3-Nitrophenol	1.06794	pH 6.6-8.6 colorless/yellow-orange	5 g, 25 g
4-Nitrophenol	1.06798	pH 5.4-7.5 colorless/yellow	25 g
2,2',2'',4,4'-Pentamethoxy-triphenylcarbinol	1.11473	pH 1.2-3.2 red-violet/colorless	1 g
Phenolphthalein	1.07233	pH 8.2-9.8 colorless/red-violet	25 g, 100 g, 500 g
Phenolphthalein solution 1% in ethanol	1.07227	pH 8.2-9.8 colorless/red-violet	250 ml, 1 l
Phenolphthalein solution 0.375% in methanol	1.07238	pH 8.2-9.8 colorless/red-violet	250 ml, 1 l
Phenol red	1.07241	pH 6.4-8.2 yellow/red	5 g, 25 g, 100 g
Phenol red sodium salt	1.11748	pH 6.4-8.2 yellow/red	5 g
Thymol blue	1.08176	In the acid range: pH 1.2-2.8 red/yellow in the alkaline range: pH 8.0-9.6 yellow/blue	5 g, 25 g
Thymol blue sodium blue	1.11749	In the acid range: pH 1.2-2.8 red-violet/brown-yellow in the alkaline range: pH 7.8-9.5 yellow/blue	5 g
Thymolphthalein	1.08175	pH 9.3-10.5 colorless/blue	5 g, 25 g, 100 g
p-Xylenol blue	1.08682	In the acid range: pH 1.2-2.8 red/yellow in the alkaline range: pH 8.0-9.6 yellow/blue	1 g

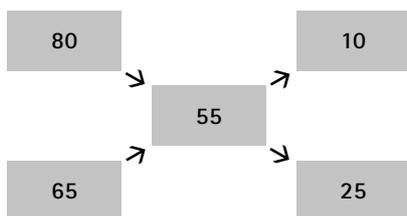
pH indicator strips and pH indicator papers

Non-bleeding special and universal pH indicators strips

Product	Cat. No.	each pack contains:
Graduation 1 pH units		
Universal indicator strips pH 0-14.0	1.09535	100 strips
Graduation 0.5 pH units		
Acilit® indicator strips pH 0-6.0	1.09531	100 strips
Neutralit® indicator strips pH 5.0-10.0	1.09533	100 strips
Alkalit® indicator strips pH 7.5-14.0	1.09532	100 strips
Special indicator strips pH 2-9	1.09584	100 strips
Graduation 0.2-0.3 pH units		
Special indicator strips pH 0-2.5	1.09540	100 strips
Special indicator strips pH 2.5-4.5	1.09541	100 strips
Special indicator strips pH 4.0-7.0	1.09542	100 strips
Special indicator strips pH 6.5-10.0	1.09543	100 strips
Special indicator strips pH 11.0-13.0	1.09545	100 strips

General mixtures

To calculate the ratios involved in mixing two solutions of the same substance with given concentrations (example 1) or one solution with pure solvent (example 2) in order to obtain a solution of desired concentration, the following schematic can be used:

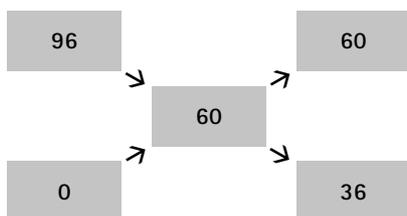


Example 1

Two solutions of concentration 80% and 65% are available; a solution of concentration 55% is required

Result

10 parts of the 80% solution must be mixed with 25 parts of the 65% solution.



Example 2

A solution of 96% and a pure solvent with 0% are available; a solution of 60% is required.

Result

60 parts of the 96% solution must be mixed with 36 parts of the solvent.

The parts referred to are by weight if the content of the solutions is given in weight %; on the other hand, these are volumes if volume % is indicated. The process can be adapted to preparing solutions of a certain density (extract the weight % from the density table and insert in the equation).

Buffer solutions

TRIS-HCl-buffer

Stock solution A: Tris, 0.2 M
(dissolve 21.03 g tris= tris (hydroxymethyl)-aminomethane in 1000 ml Aqua dest.)

Stock solution B: 0.1 N HCl

Preparation of the buffer solution: mix 25 ml stock solution A with x ml stock solution B according to the list above and make up with Aqua dest. to 100 ml.

pH-value	Stock solution B
7.2	44.7
7.4	42.0
7.6	39.3
7.8	33.7
8.0	27.9
8.2	22.9
8.4	17.3
8.6	13.0
8.8	8.8
9.0	5.3

Phosphate buffer (Sørensen)

Stock solution A: Potassium dihydrogen phosphate, 0.1 M
(dissolve 13.61g KH_2PO_4 in 1000 ml Aqua dest.)

Stock solution B: Di-sodium hydrogen phosphate, 0.1 M
(dissolve 17.8 g $\text{Na}_2\text{HPO}_4 \times 2 \text{H}_2\text{O}$ or 35.81 g $\text{Na}_2\text{HPO}_4 \times 12 \text{H}_2\text{O}$ in 1000 ml Aqua dest.)

Preparation of the buffer solution: mix stock solution A and B according to the list above.

pH-value	Stock solution A	Stock solution B
5.30	9.75	0.25
5.60	9.50	0.50
5.91	9.00	1.00
6.24	8.00	2.00
6.47	7.00	3.00
6.64	6.00	4.00
6.81	5.00	5.00
6.98	4.00	6.00
7.17	3.00	7.00
7.38	2.00	8.00
7.73	1.00	9.00
8.04	0.50	9.50

Cleaning agents for laboratory equipment

Extran® laboratory cleaning agents are environmentally safe and do not interfere with biological treatment of waste water. However, if such cleaning agents have been used for removing substances harmful to the environment, the used agent must be placed in a container.

See also www.extran.info

Extran® for manual washing

Type/Form	Cat. No.	Concentration	pH-value	Uses	Package size
MA 01 alkaline;	1.07555	2-5-20%	11.6-12.0	Universal agent for severely contaminated items, even for hard water up to 40°d; also suitable for cleaning bench tops, tiles and floors; suitable for ultrasonic cleaning	2.5l, 10l
MA 02 neutral,	1.07553	2-5%	7.2-7.5	Special agent for cleaning precision equipment made of glass, quartz and sensitive metals; suitable for ultrasonic cleaning	2.5l, 10l
MA 03 phosphate-free;	1.07550	2-5-20%	11.6-12.0	Universal agent for severely contaminated items, phosphate-free, hence no adverse ecological effects, add demineralized water to naturally hard water; suitable for ultrasonic cleaning	2.5l, 10l

Extran® for machine washing

Type/Form	Cat. No.	Concentration	pH-value	Uses	Package size
AP 11 mildly alkaline; powder	1.07558	20-40 g	11.3	Gentle removal of residues, e.g. in analytical laboratories, cleaning effect same as AP 14 liquid	2 kg, 10 kg, 25 kg
AP 12 alkaline; powder	1.07563	20-40 g	12.3	Energetic cleaning agent, particularly for starch and protein residues cleaning effect same as AP 15 liquid.	2 kg, 10 kg, 25 kg
AP 13 alkaline with detergents; powder	1.07565	20-40 g	12.2	Energetic cleaning agent, particularly for fatty residues	2 kg, 10 kg, 25 kg
AP 14 mildly alkaline; liquid	1.07573	30-50 ml	11.2	Gentle cleaning in machines with liquid dosing, e.g. in analytical laboratories; phosphate-free, hence no adverse ecological effects; cleaning effect same as AP 11 powder	2.5l, 10l, 25l

Type/Form	Cat. No.	Concentration	pH-value	Uses	Package size
AP 15 alkaline; liquid	1.07575	30-50 ml	12.2	Energetic cleaning in machines with liquid dosing; phosphate-free, hence no adverse ecological effects; cleaning effect same as AP 12 powder	2.5l, 10l, 25l
AP 21 acidic with phosphoric acid; liquid	1.07559	10-30 ml	2.0	Pre-wash for residues of carbonates, hydroxides, proteins, amines, etc., as a final rinse with neutralising effect; also as a gentle main wash; prevents build-up of calcium deposits	2.5l, 10l, 25l
AP 22 acidic with citric acid; liquid	1.07561	10-30 ml	3.0	Gentle pre-wash or final rinse with neutralising effect; prevents build-up of calcium deposits	2.5l, 20l, 25l
AP 31 anti-foaming agent; liquid	1.07560	1-3 ml	5.1	Addition to washing water containing foaming residues, such as proteins, fats, soaps, and any type of emulsifier	2.5l
AP 41 enzymatic; powder	1.07570	30 g	11.4	Medical and dental practices, and for instruments used in anaesthesia, removing saliva residues, mucus, blood, etc.; temperature 55-65 °C.	2 kg, 25 kg
Chromosulfuric acid	1.02499			Stubborn residues adhering to glass equipment	1l, 2.5l



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