

## Fixatives and Related Chemicals

### Alcian Blue 8GX

Improves preservation of intracellular substances when added to glutaraldehyde.

Behnke & Zelander, J.Ultrastruct. Res., 31, 424 (1970)



25g

### Formaldehyde EM - 36% w/v

This preparation has a minimum methanol content consistent with stability. M.W. 30.03

Important: do not refrigerate, at temperatures below 25°C a white precipitate – polymer of formaldehyde – may form.



F003	100ml
F006	500ml
F007	2.5ltr

### Formaldehyde, 16% w/v Methanol Free

(Paraformaldehyde) – **methanol free** solution. A more efficient and rapid fixative used in combination with Glutaraldehyde and Acrolein fixatives, will fix delicate tissue such as brain in vascular perfusion. Ultra pure formaldehyde avoids the problem of depolymerising paraformaldehyde. It can be used in the Karnovsky method in conjunction with a buffer of choice.



F017	10 x 10ml
F017/1	1ltr
F017/2	10 x 5ml
F017/3	10 x 2ml



**Concentrations of 20%, 32% and 40% available on request**

### Formaldehyde/Zinc Ready to Use

A fixative designed for routine use, denaturing tissue specimens and achieving cellular rigidity without over hardening. Formalin/zinc retards protein crosslinking responsible for masking the immunocytochemistry antigenic binding sites. Will give excellent results with H & E, special stains and immunocytochemical reactions. Active ingredient 3.7% formaldehyde.



F019	500ml
F019/1	1 litre
F019/2	2.5 litre

### Formalin 10% v/v



A low phosphate 10% (v/v) formaldehyde solution phosphate buffered at pH 7.0± 0.1 ( 25°C). Offers easy handling, consistent tissue penetration and fixation and compliments our other low methanol and methanol free fixatives.

Available in easy-carry 20 litre packs.

F018

20ltr

## Glutaraldehyde

Introduced as a primary fixative, glutaraldehyde has been one of the more important technical advances made in the EM of biological materials. In some cases its use has led to images of structures that differ significantly from those obtained with osmium tetroxide fixation and accord better with the known physiology of the plant cell system studied.

TAAB offer 3 grades of material:

**Practical** grade for general fixation

**EM** grade for use in electron microscopy –with the following advantages:

- Actual glutaraldehyde content recorded on each bottle
- Stable for over 6 months
- pH 5 to 6
- Treatment with barium carbonate unnecessary
- Low buffer requirements
- Excellent fixative and is less inhibitory towards enzymes

**Vacuum distilled** grade is purified by vacuum glass distillation to remove all polymerised material – there is no UV absorption at 235nm. It is packed in neutral glass under nitrogen for best results with enzyme histochemistry. Any distilled glutaraldehyde is relatively unstable, in particular 70%, and it has a high risk of polymerising if it is not handled properly. It is therefore recommended that material is only purchased for use within a 3 to 4 week period and carefully stored at 4°C without continued defrosting and recapping.

Unless it is imperative that material without an absorption of 235nm is required, we strongly recommend the use of TAAB's very high quality EM grade material, eminently suitable for use in cross-linking techniques, which has a stability of over 6 months at a fraction of the cost of distilled

### Practical 25% Glutaraldehyde



This practical grade is suitable for general fixation, has a pH of approximately 3.5

G005	500ml
G005/1	2.5ltr.

### Practical 50% Glutaraldehyde



This practical grade is suitable for general fixation and has a pH of approximately 3.5



G006	500ml
G006/1	2.5ltr.

## EM 50% Glutaraldehyde



A new introduction into the TAAB range, this material has the same excellent properties as the highly renowned 25% strength material.



G044	500ml
G045	100ml

## EM 25% Glutaraldehyde



A high quality preparation specifically for use in electron microscopy.



G002	500ml
G002/1	2.5ltr.
G003	250ml
G004	100ml
G011	10 x 10ml
G011/1	5 x 10ml
G011/2	10 x 2ml
G011/3	10 x 5ml

## EM 8% Glutaraldehyde



Has the same excellent properties as the 25% EM grade.



G010	10 x 10ml
G010/1	5 x 10ml

## Distilled Glutaraldehyde

## Distilled 70% Glutaraldehyde



G012	10 x 10ml
G012/1	5 x 10ml
G013	10 x 2ml



## Distilled 50% Glutaraldehyde



G014	10 x 10ml
G014/1	5 x 10ml
G014/2	100ml
G014/3	500ml
G015	10 x 2ml



## Distilled 25% Glutaraldehyde



G016	100ml
G016/1	500ml
G017	10 x 10ml
G017/1	5 x 10ml



## Distilled 8% Glutaraldehyde



G018	10 x 10ml
G018/1	5 x 10ml
G018/2	10 x 2ml



## Osmium Tetroxide EM

TAAB's Osmium Tetroxide has a purity of at least 99.9%. M.W.254.20 Osmium tetroxide is a pale yellow solid with a characteristic pungent chlorine-like odour. The crystals melt at 40°C and have a solubility in cold water of 5.07%. Vapour pressure at room temperature is considerable and the vapour is extremely toxic.

To avoid exposure to osmium vapour it is *recommended* to use TAAB's ready prepared, filtered solution, available in 4%, 2% or 1% w/v solutions in either ampoules or the very convenient screw top bottles, ideal for dispensing "a drop at a time".

Osmium fixatives in any form must always be handled in a fume hood, and skin contact must be avoided at all times. The primary use of osmium tetroxide in EM is as a reliable fixative. It does however, stain membranous structures, the Golgi complex and multivesicular bodies, which is a major advantage over most other fixatives.

## Crystals



## Dispersed Osmium

Osmium tetroxide crystals specially prepared as a thin layer within the glass vial to increase surface area and thus speed considerably the dissolving process. A real time saver unique to TAAB and *at no extra cost*.

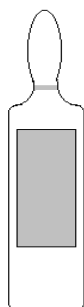
Please add suffix /D to existing product numbers



O001	1g
O001/10	10 x 1g
O002	500mg
O003	200mg
O004	100mg
O017	250mg

## Osmium Tetroxide EM Solution

### Ampoules



10ml

10ml

#### 4% Aqueous Solution

O014 5 x 5ml

O018 5 x 2ml

O020 5 x

O021 10 x

#### 2% Aqueous Solution

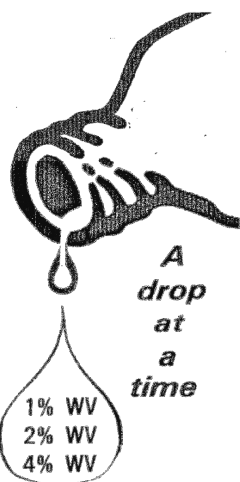
O015 5 x 5ml

O015/1 10 x 5ml

O018/1 5 x 2ml

#### 1% Aqueous Solution

### Bottles



#### 4% Aqueous Solution

O011 100ml

O012 50ml

O013 25ml

#### 2% Aqueous Solution

O005 100ml

O006 50ml

O007 25ml

#### 1% Aqueous Solution

O008 100ml

O009 50ml

O010 25ml

## Paraformaldehyde EM



A high quality product prepared for EM, it is supplied as a white free flowing solid prill with a Paraformaldehyde content **greater** than 96.5%. A fast penetrating EM fixative used in conjunction with Glutaraldehyde, Acrolein and Osmium Tetroxide.

Karnovsky, J. Cell Biol. 27 137A, (1965).

**P001 500g**

**P001/1 100g**

**P026 250g**

## Potassium Dichromate EM



Purity 99.9% minimum

Luft, J. Biophys. Biochem. Cytol., 2, 799 (1956)

Mollenhauer, J. Biophys. Biochem. Cytol., 6, 431 (1959)

**P023 500g**

## Potassium Permanganate



Metal stain.

J.Ultrastruct. Res. 21, 424 (1968)

Histochem 16, 45 (1968)

**P019 100g**

## Ruthenium Tetroxide



### 0.5% Stabilised Aqueous Solution

Ruthenium tetroxide is very similar to Osmium tetroxide and is used as an EM fixative giving excellent staining of saturated and unsaturated polymer materials with improved image contrast. RuO<sub>4</sub> also has a stabilising effect against electron beam damage of material films.

Note: Penetration of ruthenium tetroxide into tissue is poor

**R013 5 x 10ml**

**R013/1 1 x 10ml**

# 22 CHEMICALS resin kits

## Standard Resin Kits

### Clear Casting Resin C



An unsaturated polyester resin in styrene monomer. Ideal for clear casting of biological and medical specimens for display or, when mixed with styrene is an excellent embedding medium for undecalcified bones. Will section easily at 5µm.



**C032** Clear casting resin C 1 Kg kit      **C033** 2½Kg kit  
**C034** Additional catalyst 50ml      Data sheet no. 50



**General Note on epoxy resins:** We recommend that BDMA (benzyl dimethylamine) be used in place of DMP-30 (2,4,6-tri(dimethylaminomethyl)phenol) as the accelerator for epoxy systems. It has lower viscosity and improved shelf life over DMP-30 which tends to absorb moisture and carbon dioxide. All TAAB epoxy kits have DMP-30 as standard but for those wishing to follow the recommendations TAAB have introduced alternative kits replacing the DMP-30 with BDMA.

### Araldite CY212 Resin Kit

An epoxy resin also known as Araldite M based on the diglycidyl ether of bisphenol A. This routinely used epoxy resin was first reported as an embedding resin for EM in 1956 and since that time has been the model around which other modern epoxies have been developed

#### E009

Contents: 5 x 100g Araldite CY212 resin  
5 x 100g DDSA EM  
1 x 100g Dibutyl phthalate  
1 x 50g DMP-30



#### E009/1

Contents: 5 x 100g Araldite CY212 resin  
5 x 100g DDSA EM  
1 x 100g Dibutyl phthalate  
1 x 50g BDMA      Data sheet

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### Araldite 502 Resin Kit

This epoxy resin is the American equivalent of Araldite CY212. It has a viscosity twice that of CY212 and infiltration times should be extended. Polymerisation takes place overnight so blocks can be sectioned the next day. *J. Biochem. Biophys. Cytol.*, 9, 409 (1961)



#### E049

Contents: 5 x 100g Araldite 502 resin  
5 x 100g DDSA EM  
1 x 50g DMP-30

#### E049/1

Contents: 5 x 100g Araldite 502 resin  
5 x 100g DDSA EM  
1 x 50g BDMA

### Araldite/TAAB 812 Resin Kit

For hard blocks and high image contrast, blocks are easily sectioned. Mollenhauer Epon-Araldite formula.

#### E202

Contents: 3 x 100g Araldite 502 resin  
3 x 100g TAAB 812 resin  
5 x 100g DDSA EM  
1 x 50g DMP-30



#### E202/1

Contents: 3 x 100g Araldite 502 resin  
3 x 100g TAAB 812 resin  
5 x 100g DDSA EM  
1 x 50g BDMA

### Durcupan ACM Epoxy Kit

Embedding material based on Araldite, an aromatic polyepoxide. A colourless relatively low viscosity resin, with very low shrinkage.

#### D036

Contents: To make 1litre of embedding mixture



### Durcupan Water Soluble Kit

A water soluble resin for EM based on an aliphatic polyepoxide. Excellent results in the observation of enzymatic digestion processes and in histochemical studies where the use of solvents may deactivate the enzymes under study.

#### D033

Contents: 1 x 120g Durcupan A (resin)  
1 x 100g Durcupan B (DDSA)  
1 x 20g Durcupan C (DMP-30)  
1 x 20g Durcupan D (Dibutyl phthalate)



This resin is no longer available. We recommend **Lemix** to replace it our cat. no. **L029** page **22.7**

### Gach (Glutaraldehyde/Carbohydrazide) Kit

A water and lipid retaining embedding polymer for EM. Excellent preservation of lipids and ultrastructure  
Hechman, C.A. et al. (1973) *J. Ultrastruct. Res.* 42, 156



#### G047

Consists: 5 x 10ml Glutaraldehyde 50% Distilled  
5 x 1.5g Carbohydrazide

#### G048

Consists: 10 x 10ml Glutaraldehyde 50% Distilled  
10 x 1.5g Carbohydrazide

**HEMA (Glycol Methacrylate) Kit**

2, Hydroxyethyl methacrylate is in monomer form, the ethylene glycol monoester of methacrylic acid. An LM resin for 1-2µm sections using the Ruddell technique. Virtually all LM stains can be used although cationic dyes such as basic fuchsin and toluidine blue tend to stain the resin matrix. Not recommended for EM.

Leduc & Holt, J. Cell Biol., 26, 137 (1965)  
Ruddell, Stain Technology, 42, 253 (1967)

Green J. Clinical Pathology, 23, 640 (1970)

**H017**

Consists: 5 x 100ml HEMA  
1 x 100ml 2-Butoxyethanol  
1 x 100ml Carbowax 400  
1 x 25ml N,N-Dimethylaniline  
1 x 25g Benzoyl peroxide damped

Data Sheet No. 11

**Histocryl Kit**

An acrylic resin specially formulated for LM, it is water soluble and being hydrophilic permits the use of the most routine staining techniques without the prior removal or etching.

**H025**

Consists: 1 x 500ml Histocryl resin  
1 x 25g Benzoyl peroxide  
1 x 10ml Accelerator

**JB4 Embedding Kit**

A water soluble plastic embedding medium based on Glycol methacrylate. Cures at room temperature in less than 2 hours, and thin sections (1-2µm) are easily cut. Compared with wax JB4 preserves the ultrafine structure of tissue better. Removal of resin prior to staining is unnecessary and all aqueous histological stains may be used for staining. The use of clearing agents such as xylene and chloroform are not needed.

**J001**

Consists: 1 x 750ml JB4 Solution A  
1 x 50ml JB4 Solution B  
1 x 9g Catalyst (Benzoyl peroxide)

**LR Gold Resin**

An acrylic resin for the histochemist and immunocytochemist, working with fixed tissue. Cold cured in visible light (for example quartz halogen), LR Gold can infiltrate and be cured in unfixed tissue. This leaves very many fixation-sensitive systems active that can be demonstrated using standard histochemical techniques. Its' hydrophilic nature will facilitate the passage of substrates and antibodies during reactions ensuring that precise localisations and superb morphology are available from the same section. There are further advantages over frozen sections in that blocks may be stored at ambient temperature with biochemical activity remaining for many weeks. Semi-thin and ultrathin sections can be prepared and once stained, are permanent.

**LR Gold Resin Kit****L011/K**

Consists: 1 x 500g LR Gold resin  
1 x 50g Benzil activator  
1 x 50g Dibenzoyl peroxide  
1 x 100g Polyvinylpyrrolidone

**LR Gold Resin**

**L011** LR Gold resin 500g

**LR White Resin**

A very low viscosity (8cps), non-toxic resin suitable for LM and EM. LR White is a polar monomer, is electron beam stable and can be heat or UV light cured. With appropriate fixation the same specimen may be used for both LM and EM techniques. Immunocytochemical methods may be used without etching or any pre-treatment. The kits are supplied as a 2 component resin that is stable at ambient temperatures. The catalyst should be added to the monomer a minimum of 24 hours prior to use. Once mixed it should be used within a day, or refrigerated until required.

Newman G.R. (1987) Use and abuse of LR White. Histochem. J. 19, 118  
Data sheet No. 22

**L009**

Consists: 1 x 500g LR White Resin – **Hard**  
1 x 9.9g Catalyst (Dibenzoyl peroxide)

**L009/L**

Consists: 1 x 500g LR White Resin – **Hard**  
1 x 9.9g Catalyst (Dibenzoyl peroxide)  
1 x 10ml Accelerator

**L012**

Consists: 1 x 500g LR White Resin – **Medium**  
1 x 9.9g Catalyst (Dibenzoyl peroxide)

**L012/L**

Consists: 1 x 500g LR White Resin – **Medium**  
1 x 9.9g Catalyst (Dibenzoyl peroxide)  
1 x 10ml Accelerator

**L013**

Consists: 1 x 500g LR White Resin – **Soft**  
1 x 9.9g Catalyst (Dibenzoyl peroxide)

**L013/L**

Consists: 1 x 500g LR White Resin – **Soft**  
1 x 9.9g Catalyst (Dibenzoyl peroxide)  
1 x 10ml Accelerator

**L010** LR White accelerator 10ml

# 22 CHEMICALS resin kits

## Lowicryl Resin

Lowicryl resins are low temperature embedding media based on a highly crosslinked acrylic & methacrylate formula by Carlemalm et al.

Lowicryl K4M is a water compatible polar (hydrophilic) resin with moderate beam stability. Infiltration and curing can be undertaken at all temperatures down to  $-35^{\circ}\text{C}$  while the HM20 is non-polar (hydrophobic) and can be used down to  $-70^{\circ}\text{C}$ .

Lowicryl's K11M and HM23 have properties similar to K4M and HM20 but allow for use at  $20^{\circ}\text{C}$  lower temperatures (K4M  $-50^{\circ}\text{C}$  & HM23  $-80^{\circ}\text{C}$ ). All these resins are photopolymerised by indirect long wavelength (360nm) ultraviolet light. Chemical polymerisation is also possible at  $60^{\circ}\text{C}$ . All Lowicryl media exhibit low viscosity at temperatures as low as  $-35^{\circ}\text{C}$  and both the K4M and K11M may be polymerised with up to 5% (by weight) water in the block.

Secondly, K4M and K11M are particularly useful for immunolabelling of sections using specific antisera, lectins and colloidal gold particles

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## Lowicryl HM20 Kit – Non Polar



### L008

Consists: 3 x 250g Monomer B  
1 x 100g Crosslinker A  
1 x 5g Initiator C



## Lowicryl K4M Kit – Polar



### L007

Consists: 3 x 250g Monomer B  
1 x 100g Crosslinker A  
1 x 5g Initiator C



## Lowicryl HM23 Kit – Non Polar



### L017

Consists: 3 x 250g Monomer B  
1 x 100g Crosslinker A  
1 x 5g Initiator C



## Lowicryl K11M Kit – Polar



### L016

Consists: 3 x 250g Monomer B  
1 x 100g Crosslinker A  
1 x 5g Initiator C



## Methacrylate Embedding Kit

A low viscosity embedding medium, the final hardness of which is determined by the ratio of the two methacrylates. It produces blocks that are very easy to section. The resin can be removed with acetone before staining.

### M017

Consists: 1 x 100ml Methyl methacrylate  
10 x 100ml Butyl methacrylate  
1 x 50g Styrene monomer  
1 x 25g Benzoyl peroxide



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## Quetol 651 Resin Kit

A low viscosity water miscible resin for both LM and EM. The polymerised blocks section more easily than ordinary epoxy resin mixtures.

Kushida H et al. (1986) Pro. 11<sup>th</sup> Congress EM p.2177. Kyoto



### Q005

Consists: 1 x 125g Quetol 651  
1 x 250g NSA  
1 x 100g MNA

## TAAB Epocure Cold Curing Epoxy

Epocure is a two-component epoxy resin with minimum shrinkage and good mechanical properties when cured. Cures in around 2 hours and is suitable for paint, paper, silicon, ceramics, metals, wafers and chips. Miscible with 1, 2 Dichloroethane when liquid.

### E206

Consists: E204 Epocure casting resin (5 x 100ml)  
E205 Epocure hardener (1 x 125ml)  
M052/1 Mixing cups (10)  
S333/1 Stirring rods (10)  
Data Sheet

**Spurr Resin Kit - see note below**

The low viscosity component ERL 4206 is discontinued and is replaced by the more viscous ERL 4221D. See **TAAB TLV** as another alternative.

**S024/D**

Consists: 5 x 100g NSA  
2 x 100g ERL 4221D  
1 x 100g DER 736  
1 x 50g S-1

Some modifications may be needed to protocols to obtain best results, See E. Ann Ellis, Microscopy today, Vol No. 4, July 2006

**Unicryl Resin Kit**

A new Universal resin for:

- Light Microscopy
- Electron Microscopy
- Immunolabelling
- *In-situ* Hybridisation
- Histochemistry

Unicryl is a single component and easy to use resin which gives excellent structural preservation of tissues without chemically interacting or crosslinking with them. The resin exhibits a low viscosity even down to  $-50^{\circ}\text{C}$ . The resin can be polymerised by heat at  $50 - 60^{\circ}\text{C}$  or by UV irradiation at low temperatures of  $-10$  to  $-20^{\circ}\text{C}$ . The resin has a long shelf life when stored in the cold, however it deteriorates quickly above ambient and requires special packing for export shipping.

**U009**

Consists: 1 x 250ml Unicryl resin

**Unicryl LM Staining Kit****U010**

Consists: 6 x 100ml of stains.

Haematoxylin, Light Green, Safranin, Silver methenamine, Eosin and

**TAAB Low Viscosity Resin (TLV)  
The Replacement for Spurr**

This resin replaces Spurr, as ERL4206 and ERL4221D, the main component of Spurr is discontinued. TLV provides excellent penetration for embedding biological specimens and the hardness of the block can be adjusted by changing the ratios the two hardeners VH1 and VH2. The blocks section easily, stain well with heavy metals and are stable electron beam.

None of the components has the known carcinogenicity of ERL4206 but as with the laboratory use of all resins care should be taken at all stages of handling with the use of gloves and ensuring the area is well ventilated.

**T049**

Consists: 5 x 100g TLV resin  
2 x 100g TLV hardener VH1  
4 x 100g TLV hardener VH2  
1 x 50g Accelerator

**TAAB Emix Kits - see Kit Section Page 22.10**

This well known and popular resin is a low viscosity epoxy resin ( 0.7 to 1.1 Pa.s at  $25^{\circ}\text{C}$  ) and is available in kit form only as a **Premix**. It is ideally suited to routine diagnostic embedding for EM having been proved over many years in UK hospitals.

See **PREMIX Kit section**

**TAAB Lemix Kits for EM & LM**

This very useful resin rapidly penetrates blocks following conventional dehydration without the use of intermediate solvents such as propylene oxide. The **Monomer A** is fully miscible with water and can therefore be used to achieve water replacement without causing excessive shrinkage. Lipid loss is much less than with ethanol dehydration, typically 40% compared with 90%. When polymerised the resin remains hydrophilic, improving the use of aqueous stains. The resin produces excellent ultra and semi-thin sections. Ultrathin sections readily take up EM stains and have a high degree of beam stability at 100kV with only slight background granularity.

There are four kits available two each for LM and EM as water replacement using **Monomer A** or Ethanol/Acetone dehydration.

**L028 - Ethanol/Acetone dehydration EM**

Consists: 1 x 125g Lemix A - Monomer  
3 x 100g Lemix B - Hardener  
1 x 100g Lemix D - Hardener  
1 x 50ml Lemix C - Accelerator

**L029 - Water replacement using Monomer A**

Consists: 2 x 125g Lemix A - Monomer  
3 x 100g Lemix B - Hardener  
1 x 100g Lemix D - Hardener  
1 x 50ml Lemix C - Accelerator

**L030 - Ethanol/Acetone dehydration LM**

Consists: 2 x 125g Lemix A - Monomer  
5 x 100g Lemix B - Hardener  
1 x 50ml Lemix C - Accelerator

**L031 - Water replacement using Monomer A**

Consists: 4 x 125g Lemix A - Monomer  
5 x 100g Lemix B - Hardener  
1 x 50ml Lemix C - Accelerator



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**TAAB 812 Resin Kit**

A high quality resin produced in small batches to act as an exact equivalent to the Epon 812, but produced to a higher specification with a weight per epoxide of 148-150. It is a reliable, popular resin suitable for EM and giving very good results in LM but it still has quite a high viscosity. Whilst this is acceptable for EM it can restrict specimen size for LM.

**T024**

Contents: 5 x 100g TAAB 812 resin  
3 x 100g DDSA EM  
3 x 100g MNA  
1 x 50g DMP-30

**T024/1**

Contents: 5 x 100g TAAB 812 resin  
3 x 100g DDSA EM  
3 x 100g MNA  
1 x 50g BDMA

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**TAAB Embedding Resin Kit**

A relatively low viscosity epoxy resin developed by TAAB to counter some of the deficits of both Araldite and Epon 812. Developed for biological specimens for EM and LM it exhibits excellent cutting and staining qualities, with freedom from background 'grain'. A wide range of hardnesses can be obtained by varying the proportions of the hardeners DDSA and MNA.

**T004**

Contents: 5 x 100g TAAB Embedding resin  
4 x 100g DDSA EM  
2 x 100g MNA  
1 x 50g DMP-30

**T004/1**

Contents: 5 x 100g TAAB Embedding resin  
4 x 100g DDSA EM  
2 x 100g MNA  
1 x 50g BDMA

Data sheet No.3

**Transmit Resin**

A low viscosity epoxy resin with comparable performance to Spurr's except that a softer block is usually produced. It has good sectioning characteristics, electron beam stability and low background 'grain'. A good resin for LM use, easy to handle and much less toxic than Spurr's being comparable with Araldite. An exceptional advantage is that the monomer is water miscible and can be used to dehydrate specimens where alcohol and acetone should be avoided.

Two kits are available:

Transmit LM – designed for semi-thin sectioning for light microscopy.  
Transmit EM – designed for ultra-thin sectioning for electron microscopy.

**TAAB Transmit LM Resin****T043**

Consists: 3 x 100g Transmit LM resin  
8 x 100g Transmit hardener TH1  
1 x 25ml Accelerator

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**TAAB Transmit EM Resin****T044**

Consists: 3 x 100g Transmit EM resin  
5 x 100g Transmit Hardener TH1  
3 x 100g Transmit Hardener TH2  
1 x 25ml Accelerator

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**Technovit Kits**

Produced by Heraeus Kulzer in Germany, a range of embedding systems for the preparation of biological and material samples.

**Technovit Biological Resins****Technovit 7100**

For Morphology and Enzyme Histochemistry.

A specially formulated 3 component Glycol Methacrylate, developed to provide excellent structural detail and histochemistry without changing processing routines from wax histology.

**T218**

Consists: set to make 500ml of embedding mixture

**Technovit 8100**

For Morphology and Immunocytochemistry.

Retains all the benefits of Technovit 7100 with an almost odourless plasticiser and low polymerisation temperature ( can be polymerised at sub zero temperatures ). Achieves excellent results with immunoreactive tissues especially when used with Histoform Teflon embedding moulds.

**T220**

Consists: set to make 500ml of embedding mixture

**Technovit 9100**

For Dense and Mineralised Tissue.

An easy-to-handle Methyl Methacrylate 3 component kit giving short processing times and low polymerisation temperatures. Excellent preservation of morphology. Supports tinctorial and enzymatic stains if the resin is removed from the section with the solvent 2-Methoxyethanol. Can also be used for the preparation of thick sections of specimens by sawing and grinding.



Can be used stabilised or unstabilised depending on level immuno sensitivity required. Removal of stabiliser is undertaken using aluminium oxide in a chromatography column

**T223**

Consists: set to make 1000ml of embedding mixture

TAAB is the exclusive UK distributor for Technovit resins



**Technovit Material Science Resins****Technovit 4000**

A fast curing 3 Component polyester based white resin for gap-free embedding of difficult samples.. Abrasion resistant and giving good marginal definition. Remains mobile for approximately 4 minutes after mixing and cures in 7-8 minutes. Low shrinkage (0.1 to 0.2%) means etching and cleansing agents cannot penetrate between specimen and resin. **Insoluble.**



Available in three kit sizes

**T229**

Set to make 240ml of embedding mixture

**T230**

Set to make 1500ml of embedding mixture

**T231**

Set to make 3000ml of embedding mixture

**Technovit 4004**

A cold curing 2 Component (powder/liquid pack) methacrylate based resin which can be cured at room temperature and under pressure at 2 bar for crystal clear embedding. Suitable for specimens which require transparent low temperature embedding. Remains mobile for 3 minutes after mixing and cures in 4-6 minutes.

**T233**

100g/80ml to make 180ml of embedding mixture

**Technovit 4071**

For specimens where simple handling and speed of embedding are important and which cannot be exposed to high temperature. After mixing the 2 component resin remains mobile for approximately 2 minutes allowing dispersion into all crevices. Curing takes 3-5 minutes depending on mixing ratio and ambient temperature.

**T238**

Set to make up to 180g of embedding mixture

**Technovit 5071**

With the same characteristics as Technovit 4071 but can be **dissolved** in organic solvents such as trichloroethylene, acetone and dichloroethane.

**T246**

Set to make 180g of embedding mixture  
Kit no longer available. Buy components T247/T248 & T249/T250 listed in Embedding Chemicals Section

**Technovit 5000**

A **conducting** mounting medium with the same characteristics as Technovit 4071. A copper filled electrically conducting 2 component (160g/80ml) resin.

**T343**

Consists: set to make 240g of embedding mixture

**Technovit 2000LC**

The Technovit 2000 LC system consists of a light-curing embedding resin, a covering varnish, a fixing paste, the Technotray CU light curing device and the special embedding moulds. These components are designed to function together.

Technovit 2000 LC is a very tight-fitting embedding agent and has been specifically developed for testing and preparing sensitive materials and micro-components. Technovit 2000 LC is mainly used for semiconductor technology, microelectronics, medical technology, optoelectronics and microsystems technology. It is also suitable for embedding materials that are very temperature-sensitive.

<b>T251</b>	Set to make 1 litre of embedding mixture
<b>T400</b>	Technotray Blue Light Unit
<b>T251/P</b>	Fixing Paste
<b>T251/V</b>	2000LC Varnish
<b>T251/M15</b>	Embedding mould 15mm Ø
<b>T251/M30</b>	Embedding mould 30mm Ø
<b>T251/M40</b>	Embedding mould 40mm Ø
<b>T251/M50</b>	Embedding mould 50mm Ø



Please ask for Data Sheet

**Technovit 3040**

A fast cold curing resin, based on methacrylate, supplied as a 2 component (100g/80ml) resin that cures in 5-10 minutes depending on room temperature. Used to securely bond a Histobloc to the specimen in embedding systems or for impression making in material science.

**T224**

Consists: set to make 180g of embedding mixture

**Technovit Epox**

A Premium embedding medium for Porous Materials ensuring gap free embedding with low shrinkage, high transparency, strong adhesion and UV stability

A two component epoxy based kit. Regular or fast embedding can be selected with choice of hardener. An ideal choice where porous metallurgical samples may need to be embedded under vacuum.

<b>T277</b>	Epox resin	1Kg
<b>T278</b>	Epox Hardener <i>Regular</i>	500g
<b>T279</b>	Epox Hardener <i>Fast</i>	500g

**Technovit Provil Novo Silicone**

A soft and light surface impression silicone – easy to use and safe. Particularly suitable for casting complex geometric shapes or overhead castings. Can be removed without leaving a residue.

**T554** Provil Novo Putty regular (3 part)

**T555** Provil Novo Putty Soft (3 part)

**T556** Provil Novo Regular Light

Please ask for Data Sheet

### Vestopal 310(W) Resin Kits

A styrene-polyester based media which polymerises at 60°C to a light yellow resin. It has a fine grain and sections stain easily. It penetrates tissue rapidly, and does not show uneven polymerisation. The resin is stable under the electron beam.



Ryter, et al., J. Ultrastructure Res., 2,200 (1958)



#### V006

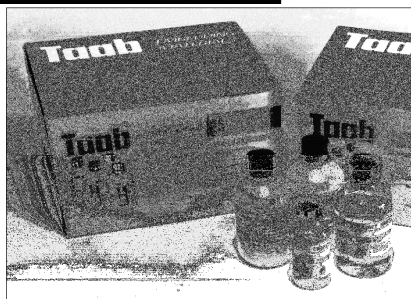
Consists: 1 x 500g Vestopal 310 resin  
1 x 25ml t-Butyl perbenzoate  
1 x 25ml Cobalt naphthenate 6%

#### V007

Consists: 2 x 500g Vestopal 310 resin  
1x 25ml t-Butyl perbenzoate  
1x 25ml Cobalt naphthenate 6%

Data Sheet No.64

### Premix Kit Section



With the ever increasing awareness of the hazards and safety when handling potentially harmful chemicals TAAB have available in PREMIX form the popular embedding resins with which the microscopist is already fully familiar and already obtain high quality results. There is of course, the added bonus of increased reproducibility of results as weighing of components is no longer necessary (this is controlled by TAAB). The procedure is very simple – **each kit consists of 5 sets of two components, plus 5 ampoules of accelerator**. One component is in a 125ml capacity bottle, the other ( the less viscous ) is in a 60ml capacity bottle. Simply empty the contents from the smaller bottle into the larger bottle, mix, then add the contents of one ampoule of accelerator, mix thoroughly again and approximately 100g of resin media is ready for use. No additional containers are required, and any unused resin can either be stored in a refrigerator or freezer for later use or left to set in the bottle before it is discarded.

### Araldite CY212 Resin

#### E028 Hard

Comprising: 5 x 52g Resin- hard  
5 x 48g Hardener  
5 x 2.5ml Accelerator



#### E029 Medium

Comprising: 5 x 52g Resin- medium  
5 x 48g Hardener  
5 x 2.5ml Accelerator



#### E030 Soft

Comprising: 5 x 52g Resin- soft  
5 x 48g Hardener  
5 x 2.5ml Accelerator

### Spurr Resin

Now no longer available

### TAAB Low Viscosity Resin (TLV) Our replacement for Spurr's

#### T261 Hard

Comprising: 5 x 48g Resin  
5 x 52g Hardener - hard  
5 x 2.5ml Accelerator

#### T262 Medium

Comprising: 5 x 48g Resin  
5 x 52g Hardener - medium  
5 x 2.5ml Accelerator

#### T263 Soft

Comprising: 5 x 48g Resin  
5 x 52g Hardener - soft  
5 x 2.5ml Accelerator



### TAAB Emix

#### E038 Hard

Comprising: 5 x 53g Resin  
5 x 47g Hardener-hard  
5 x 2.5ml Accelerator

#### E037 Medium

Comprising: 5 x 53g Resin  
5 x 47g Hardener-medium  
5 x 2.5ml Accelerator



#### E036 Soft

Comprising: 5 x 52g Resin-soft  
5 x 48g Hardener  
5 x 2.5ml Accelerator

### TAAB 812 Resin

#### T030 Hard

Comprising: 5 x 48g Resin  
5 x 52g Hardener-hard  
5 x 2.5ml Accelerator



#### T031 Medium

Comprising: 5 x 48g Resin  
5 x 52g Hardener-medium  
5 x 2.5ml Accelerator



#### T032 Soft

Comprising: 5 x 48g Resin  
5 x 52g Hardener-soft  
5 x 2.5ml Accelerator

## TAAB Embedding Resin

Following the demand for more reliable sectioning of tough tissues including skin, bone and keratinized tissue TAAB has introduced **Hard-Plus** into the range of premix kits. Sections show less distortion and retain integrity during subsequent staining procedures for light and electron microscopy.



### T027 Hard



Comprising: 5 x 50g Resin  
5 x 50g Hardener-hard  
5 x 2.5ml Accelerator

### T027/1 Hard-Plus

Comprising: 5 x 50g Resin  
5 x 50g Hardener-hard-plus  
5 x 2.5ml Accelerator

### T028 Medium

Comprising: 5 x 50g Resin  
5 x 50g Hardener-medium  
5 x 2.5ml Accelerator

### T029 Soft

Comprising: 5 x 50g Resin  
5 x 50g Hardener-soft  
5 x 2.5ml Accelerator

## Transmit LM Resin



### T045 LM



Comprising: 5 x 35g Resin  
5 x 69g Hardener  
5 x 2ml Accelerator

### All Premix Resin Types

For those wishing to make larger batches of resin mixture, each component is available in 500g weights with the accelerators in a 50g size. The ratio of mixing can be taken from the premix kits.

Ampouled Premix Kit accelerators are available separately to replace those in kits which have exceeded their shelf life.

Please see embedding chemicals for items above.

## Embedding Chemicals

### Araldite 502 Resin



This epoxy resin is the USA equivalent of Araldite CY212. It has a viscosity twice that of CY212 and infiltration times should be extended. Araldite 502 is often blended with TAAB 812, Epon 812 or its equivalents. Weight per epoxide 233-250



E021/1 2.5Kg  
E021 500g

Araldite kits – see Kit sections Page C4 to C10

### Araldite CY212 (M) Resin



Also generally referred to as Epoxy Resin, it is based on the diglycidyl ether of bisphenol A and is mixed with the reactive anhydride hardener DDSA in equal parts. The slow curing is speeded by the use of an amine accelerator DMP30 or BDMA. The hardness of the block is controlled by the addition of the plasticiser Dibutyl Phthalate.



E015/1 2.5Kg  
E015 1Kg  
E006 500g  
E007 250g  
E008 100g

### Araldite CY212 Premix Hardeners



E031 500g

### Araldite CY212 Premix Resin



**Hard**  
E032 500g

**Medium**  
E033 500g

**Soft**  
E034 500g

**Araldite CY212 Premix Accelerator**

**E035**      50g  
**B023**      5 x 2.5ml

**Azo-bis-iso Butyronitrile**

Thermal and photocalyst for polymerisation of methacrylates

Leduc & Holt, J. Cell Biol., 26, 137 (1965)

McLean & Singer, J. Cell Biol., 20, 518 (1964)



**A014**      100g  
**A015**      25g

**Benzil**

(Dibenzoyl), Blue light catalyst for LR Gold.

**B030**      50g

**Benzoin**

Photocalyst for polymerisation of methacrylates.

M.W. 212.25 M.P. 134-136°C

Charles & Sikorsky, Brit. J. Appl. Phys., 7, 152 (1956)

**B001**      25g

**Benzoyl Peroxide, damped**

This material is supplied damped with 25% water, and before adding to methacrylates as a polymerisation catalyst should be "damp dried" on blotting paper.

M.W. 242.22



**B002**      100g  
**B003**      25g

**Dibenzoyl Peroxide, 50% powder**

An alternative to benzoyl peroxide damped, reputed to be less hazardous and easier to use.

**B031**      50g

**Benzyl dimethylamine (BDMA)**

(N-Benzyl-N,N-Dimethylamine). M.W. 135.21 B.P. 177 – 180°C

An amine accelerator for polymerisation of epoxy resins.

A direct and preferred alternative to DMP-30.

**B006**      500ml  
**B007**      250ml  
**B008**      100ml  
**B036**      50ml  
**B037**      25ml  
**B022**      5 x 2ml

**2-Butoxyethanol**

(Ethylene Glycol Monobutyl Ether) M.W. 118.18  
Component of HEMA resin for 1-2µm sections for light microscopy using the Ruddell technique.

**B020**      1ltr  
**B020/1**      5ltr  
**B019**      500ml  
**B033**      100ml

**t-Butyl Perbenzoate**

Used as a catalyst in the Vestopal W resin media.  
M.W. 194.23



**B034**      100g  
**B035**      25g

**n-Butyl Methacrylate**

Stabilised with 60ppm hydroquinone M.W. 142.20

**B014**      500ml  
**B032**      100ml

**Carbohydrazide**

CO(NHNH<sub>2</sub>)<sub>2</sub> M.W. 90.08  
for GACH embedding kit

A water-miscible, lipid retaining, embedding polymer for EM

Heckman, et.al., Ultrastruct Res., 42, 156 (1973)

**C044**      25g

## Carbowax 400

(Polyethylene Glycol), component of HEMA resin.

**C029 100ml**

## Clear Casting Resin C



An unsaturated polyester resin in styrene monomer. Ideal for clear casting of biological & medical specimens and when mixed with styrene is an excellent embedding resin for undecalcified bones, sections are easily cut to 5µm

**C032 1Kg**  
**C033 5Kg**  
**C034 50g**

## Clear Casting Resin C – Catalyst



Used 1% concentration i.e. 10ml to 1Kg of resin

**C034 10ml**

## Cobalt Naphthenate 6%



Used as an activator for the Vestopal embedding resin.

**C030 250ml**  
**C031 25ml**



## Cryo-M-Bed

Embedding compound for frozen tissue specimens, leaves no residue to discolour slide or section

**C028 100ml**

## DER 736



(Diglycidyl Ether of Polypropylene Glycol). Weight per epoxide 175 – 205. Used as a component of Spurr's resin. Can also be used to simplify infiltration in combination with TAAB 812 (Epon 812)

Kushida, J. Electron micro., 16, 278 ( 1964 )

**D003 500g**  
**D004 250g**  
**D005 100g**

## Dibutyl Phthalate



A plasticiser for epoxy resins. M.W. 278.35

**D010 500g**  
**D011 100g**

## 2-Dimethylaminoethyl Methacrylate



Stabilised with 800ppm hydroquinone, a water soluble monomer M.W.175.21

**D034 500g**



## n-n-Dimethylaniline



Component of HEMA resin M.W. 121.18

**D029 100g**

## Divinylbenzine



55% solution in Ethylvinylbenzene. A cross-linking agent for methacrylates to produce solvent-resistant and thermostable polymers. M.W.130.19

**D021 100g**

## D.D.S.A. EM – Distilled



C<sub>16</sub>H<sub>26</sub>O<sub>3</sub> M.W. 266.38 Specific gravity 1.005 (Dodecyl Succinic Anhydride), an **ultra pure** grade DDSA produced by distillation to control colour variations of embedding resins and offers complete infiltration of tissue. Specially prepared for EM as an epoxide hardener.

**D031 1Kg**  
**D025 500g**  
**D026 250g**  
**D027 100g**

## D.D.S.A. Practical



When the need for the ultra pure distilled grade is not necessary TAAB have reintroduced a practical grade for general use, this will however give darker blocks.

D012	1Kg
D013	500g
D014	250g
D015	100g

## DMP-30



(2,4,6- Tri(Dimethylaminomethyl) Phenol) used as an accelerator for epoxides. Although more viscous than other accelerators DMP-30 is one of the most popular accelerators in use. Absorbs moisture and carbon dioxide – keep dry and container tightly closed. M.W. 265.00



D022	500g
D023	250g
D024	100g
D032	50g
D035	25g

## Dow Corning Silicone Fluid 200



Used with epoxy resin to reduce diffusion of water soluble radioactive substance from frozen dried tissue Stirling & Kinter, J. Cell Biol., 35, 585 (1967)

D028	100g
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Durcupan Kits – see Kit section page 22.4

## Durcupan Components



– *Water soluble*

Durcupan component A ( Monomer )	
D033/A	100ml
Durcupan component B ( Hardener )	
D033/B	100ml

## Durcupan Components



*ACM Epoxy*



Durcupan component A/M (Epoxy resin)

D036/A 100ml

Durcupan component B ( Hardener)

D036/B 100ml

Emix resin kits – see Kit section page 22.10

## Emix Premix Resin



A low viscosity epoxy resin ( 0.7 to 1.1 Pa.s at 25°C ) ideally suited to routine embedding for EM

E039 500g



## Emix Premix Hardeners



Hard  
E040 500g

Medium  
E041 500g

Soft  
E042 500g

## Emix Premix Accelerator



B023 5 x 2.5ml

E044 5 x 4ml

## E.R.L 4221D



E208/100 100ml

E208/1L 1 litre

E208/250 250ml

E208/500 500ml



## Hexahydrophthalic Anhydride



(An epoxide hardener)

**H003 500g**

HEMA Kit – see Kit section page 22.5

## 2-Hydroxyethyl Methacrylate EM



GMA (Glycol Methacrylate) is a water soluble embedding medium for which an improved technique has been described. Stabilised with 200ppm hydroquinone. M.W. 130.14

Leduc & Holt, J. Cell Biol., 26, 137 (1965)

Ruddell, Stain Technology, 42, 253 (1967)

Green J. Clinical Pathology, 23, 640 (1970)

Sims, J. Microscopy, 101, 223 (1974)

Spaur, R.C. & Moriatry, G. J. Histochem. Cytochem., 23, 163 (1977)

**H008 500ml**

**H009 250ml**

**H010 100ml**

## 2-Hydroxyethyl Methacrylate – Low Acid



For critical applications TAAB offers a low acid HEMA (less than 1% methacrylic acid)

**H020 500ml**

**H021 100ml**

## 2-Hydroxypropyl Methacrylate EM



HPMA – A water soluble embedding medium, stabilised with hydroquinone. Infiltration follows the fixation of tissue and there is no extraction of material caused by any dehydration protocol. M.W. 144.17

**H011 500ml**

**H012 250ml**

**H013 100ml**

## Lemix A – Monomer



Fully miscible with water and can therefore be used to achieve water replacement without causing excessive shrinkage. Lipid loss is much less than with ethanol dehydration, typically 40% compared with 95%. When cured the resin remains hydrophilic, improving the use of water based stains. Does not require the use of an intermediate solvent such as propylene oxide.

**L024 125g**

## Lemix B – Hardener



Epoxide hardener

**L025 500g**

## Lemix C – Accelerator



**L026 100ml**



## Lemix D – Hardener



**L027 100g**

LR White & Gold Resins - see Kit section page 22.5

## Methacrylic Acid



(2-Methacrylic Acid) M.W. 86.09

**M021 500g**

Methacrylate Kit – see Kit section page 22.6

## Methyl Methacrylate



Stabilised with 60ppm hydroquinone. M.W. 100.12

**M008 500ml**

**M022 100ml**



## M.N.A



(Methyl Nadic Anhydride). A hardener for epoxides. M.W. 178.19

**M013 1Kg**

**M010 500g**

**M011 250g**

**M012 100g**



**N.S.A EM - Distilled**

(Nonenyl succinic Anhydride). A distilled grade specially prepared for use as a hardener for epoxides giving clearer blocks than the standard NSA. M.W. 227.0

<b>N010</b>	<b>1Kg</b>
<b>N007</b>	<b>500g</b>
<b>N008</b>	<b>250g</b>
<b>N009</b>	<b>100g</b>

**N.S.A Practical**

A practical grade for general use when it is not necessary to use the ultra pure distilled grade. This material will give darker blocks.

<b>N017</b>	<b>1Kg</b>
<b>N018</b>	<b>500g</b>
<b>N019</b>	<b>250g</b>
<b>N020</b>	<b>100g</b>

**O.S.A**

(n-Octenyl Succinic Anhydride) The replacement for Hexenyl Succinic Anhydride which is no longer available. A component of the Ultra-low viscosity resin.

**Polyvinyl Pyrrolidone**

Osmotic adjuster used in LR Gold resin

<b>P016</b>	<b>100g</b>
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**Propylene Oxide**

(Epoxypropane) M.W. 58.08 Solvent for epoxy resins. Used in final dehydration of tissue following alcohol as a transitional agent prior to resin infiltration. F.P. -37°C



<b>P021</b>	<b>500ml</b>
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**Quetol 523/HEMA**

Water soluble methacrylate used with 2-hydroxyethyl Methacrylate to give a low viscosity medium for ease of infiltration, sectioning and staining. This blended system results in much higher beam stability. Supplied as a 80:20 blend of HEMA:Quetol 523. Kushida, Hiroshi., J.Elec. Micro 2655, N4 351-353 (1977)

<b>Q003</b>	<b>500g</b>
<b>Q004</b>	<b>100g</b>

**Quetol 651**

A low viscosity resin miscible with water, alcohol, acetone and 2,3-epoxypropyl butyl ether. The polymerised blocks section easier than ordinary epoxy resin mixtures. M.W.174.20

<b>Q001</b>	<b>500g</b>
<b>Q002</b>	<b>100g</b>

**Quetol 651 Kit – see Kit section page 22.6****RD2**

(1,4-Butanediol Diglycidyl Ether). Component of Ultra Low Viscosity resin. M.W. 202.2

<b>R007</b>	<b>500ml</b>
<b>R008</b>	<b>250ml</b>
<b>R009</b>	<b>100ml</b>

**S-1**

(2-Dimethylaminoethanol), curing agent for epoxides. M.W. 89.14

<b>S001</b>	<b>500ml</b>
<b>S458</b>	<b>250ml</b>
<b>S002</b>	<b>100ml</b>
<b>S453</b>	<b>25ml</b>
<b>S049</b>	<b>50ml</b>
<b>S039</b>	<b>5 x 2ml</b>
<b>S454</b>	<b>5 x 1ml</b>

**Spurr Kit – See now TAAB Low Viscosity Resin (TLV)****TAAB Low Viscosity Resin (TLV)**

<b>T264</b> TLV resin	<b>500g</b>
<b>T265</b> TLV resin	<b>250g</b>
<b>T266</b> TLV resin	<b>100g</b>

**TLV Premix Hardener VH1**

<b>T267</b>	<b>500g</b>
<b>T268</b>	<b>250g</b>
<b>T269</b>	<b>100g</b>



## TLV Premix Hardener VH2



T270	500g
T271	250g
T272	100g

## TLV Premix Accelerator



T273	100ml
T274	50ml
T275	5 x 2.5ml



## Styrene



A component of some methacrylate resin media for ultramicrotomy. M.W. 104.15  
Kushida, H., J. Electron Micro., 10, 15 (1961)



S451	500g
S452	50g

## TAAB Embedding Resin



A resin which has been developed by TAAB for embedding biological specimens for EM and LM. A relatively low viscosity resin exhibiting very good cutting and staining qualities, with freedom from background 'grain'. Stability under the electron beam is good and the resin readily accepts heavy metal stains. A wide range of hardnesses can be obtained by varying the proportions of the hardeners DDSA and MNA.



T025	1Kg
T001	500g



T002	250g
T003	100g

TER kits – see Kit sections page 22.4 to 22.11

## T.E.R Premix Resin



T033	500g
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## T.E.R. Premix Hardeners



<b>Hard</b>	
T034	500g

<b>Medium</b>	
T035	500g

<b>Soft</b>	
T036	500g

## T.E.R. Premix Accelerator



T037	50ml
B023	5 x 2.5ml

## TAAB Transmit Resin

A resin developed by TAAB which is a low viscosity aliphatic epoxy resin plus reactive anhydride which allows the production of both high quality semi-thin and ultra-thin sections. Transmit possesses very similar characteristics to Spurr's resin without the attendant carcinogenic risk.

## Transmit Resin LM



T200	500g
T201	250g
T202	100g

## Transmit Resin EM



T203	500g
T204	250g
T205	100g

## Transmit Resin EM



T203	500g
T204	250g
T205	100g

## Transmit Hardener TH1



T206	500g
T207	250g
T208	100g

## Transmit Hardener TH2



T209	500g
T210	250g
T211	100g



## Transmit Accelerator



T212	10 x 2ml
T213	100ml
Premix	
T259	5 x 2ml
T213K	25ml



## TAAB 812 Resin



A high quality resin produced in small batches to act as an exact equivalent to Epon 812 which is no longer commercially available. The triglycidyl ether of glycerol, it is a reliable, popular epoxy resin suitable for EM and can give very good results in LM but the viscosity can restrict specimen size in LM. Sensitive to atmospheric moisture. Weight per epoxide 148- 150

T021	1Kg
T022	500g
T023	250g
T026	100g

TAAB 812 kits – see pages 22.4 to 22.11

## TAAB 812 Premix Resin



T038	500g
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## TAAB 812 Premix Hardeners



<b>Hard</b>	
T039	500g

<b>Medium</b>	
T040	500g

<b>Soft</b>	
T041	500g

## TAAB 812 Premix Accelerator



T042	50g
B023	2.5ml

## Technovit Components

## Technovit 3040



T225	Powder	1kg
T226	Powder	2Kg
T227	Liquid	500ml
T228	Liquid	1ltr

## Technovit 4000



T232	Powder	1kg
T253	Liquid	500ml

## Technovit 4004



T234	Powder	1kg
T235	Powder	2Kg
T236	Liquid	500ml
T237	Liquid	1ltr

## Technovit 4071



T239	Powder	1kg
T240	Powder	2Kg
T241	Liquid	500ml
T242	Liquid	1ltr

## Technovit 5071



T247	Powder	1kg
T248	Powder	2Kg
T249	Liquid	500ml
T250	Liquid	1ltr

## Vestopal 310 (W) Resin



A styrene-polyester based embedding medium which polymerises at room temperature to a light yellow resin. It has a fine grain and sections stain easily. It penetrates tissue rapidly, and does not show uneven polymerisation, the resin is stable under the electron beam.



V008 500g

Vestopal kits – see Kit section page 22.9

## WAXES FOR HISTOLOGY

### Fibrowax

A mixture of pure paraffin wax and plastic polymers, and a valuable aid to section cutting both for difficult tissues and routine histology. Melts at 57-58°C and Sections of hard or fibrous tissue ribbon easily at 4µm. Tissue compression is reduced to a minimum with no cracking or crumbling of ribbons.

W001 1Kg  
W002 10Kg

### Low Melting Point Wax

Applications – for use where enzyme histochemistry is required in paraffin sections. Melting point 45°C. Supplied in 500g tablet

W003 500g

### Paraplast Plus

Cuts to 2µm with excellent ribbon continuity and melts rapidly at 56-57°C. Double filtered paraffin containing plastic polymers of regulated molecular weights and small per cent of dimethyl sulphoxide (DMSO) for faster tissue penetration. Supplied in pellet form.

W006 1Kg

### Paraplast X-tra

Cuts to 2µm with exceptional ribbon continuity and melts rapidly at 50-54°C. Lower temperature infiltration eliminates tissue “cooking” which can cause distortion. Extra compression resistance provides total support of tissue and morphology is preserved. A unique blend of low molecular weight polymers and highly purified paraffins for exceptional compression resistance and ribbon continuity. Supplied in pellet form.

W007 1Kg

### Polyester Wax

A ribboning embedding medium with a melting point of 37°C, reducing tissue hardening and shrinkage. Soluble in most organic solvents, including alcohols, ethers, esters, ketones and hydrocarbons, it also has good water tolerance. Almost opaque in appearance and sections easily, 2µm and above may be cut at room temperature.

W005 500g

### Paraffin Wax

Pure paraffin wax, pelletized. Melting point 56°C

W008 5Kg  
W009 10Kg

## BUFFERS

## Borax



(Sodium tetraborate)  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$  . Purity 99.9% . M.W. 381.37

**B021 500g**

## Boric Acid



$\text{H}_3\text{BO}_3$  M.W. 61.83 Purity >99.5%  
Used in silver methenamine buffer and as a component in Tris EDTA borate buffer.

**B038 500g**

## Buffer Solution Concentrates



To make 5 litres of solution

**Acetate pH 5.2**

**B410 1**

**Sorenson's pH 6.4**

**B411 1**

**Sorenson's pH 6.8**

**B412 1**

**Sorenson's pH 7.0**

**B413 1**

**Sorenson's pH 7.2**

**B414 1**

**Tris-HCl pH 7.2**

**B415 1**

**Tris-HCl saline**

**B416 1**

For pH buffer solutions -

see Specimen Preparation Section Page 5.16

## Citric Acid EM



$\text{C}_6\text{H}_8\text{O}_7$  M.W. 192.13 Purity >99.7%

**C021 500g**

## s-Collidine EM



(2,4,6-Collidine. 2,4,6-Trimethylpyridine). M.W. 121.18

Prepared by the method of Bennet & Luft and recommended as a buffer for osmium fixatives.

**C012 100ml**

**C013 25ml**

## s-Collidine buffer kit



When used with Osmium Tetroxide provides excellent fixation, high stability and buffering capacity. The pH can be adjusted by varying the amount of hydrochloric acid in the final volume of 200ml.

Consists of: 5 x 5.34ml s-Collidine EM

5 x 9.00ml 2.0N HCl

this makes 5 x 200ml of buffer pH7.4 – 7.7

## Hepes

(N-2-Hydroxyethylpiperazine-N'-Ethanesulphonic acid). M.W. 238.31

**H001 25g**

**H002 10g**

## Hydrochloric Acid 0.1N



Used to adjust the pH of buffers and fixative solutions.

**H038 100ml**

## Hydrochloric Acid 1.0N



Used to adjust the pH of buffers and fixative solutions.

**H039 100ml**

## n-Ethylmorpholine



Purity > 99.5%

**E016 250g**

## Maleic Acid EM



Purity >99.5% M.W. 116.08

**M002 500g**

**M003 100g**

## Pipes

(Piperazine-1,4-bis (2-ethanesulfonic acid) M.W. 302.37

**P032 25g**

## Pipes Buffer Solution 0.3M

Aqueous PIPES solution adjusted by 0.1N Sodium Chloride to pH 5.5-6.0

**P033 500ml**

## Potassium Phosphate – Monobasic

(Potassium dihydrogen orthophosphate),  $\text{KH}_2\text{PO}_4$   
M.W. 136.09

**P024 500g**

## Potassium Phosphate – Dibasic

(Di-potassium hydrogen orthophosphate). Purity >99%

**P025 500g**

## Sodium Acetate, Trihydrate EM



Purity >99%. M.W. 136.08

**S027 500g**

## Sodium Cacodylate EM



(Sodium dimethyl arsenate)( Cacodylic acid).

M.W. 214.02  $\text{C}_2\text{H}_6\text{AsNaO}_2 \cdot 3\text{H}_2\text{O}$

Sabatini, et al., J. Cell Biol., 17, 19 (1963)

**S030 1Kg**

**S006 500g**

**S007 250g**

**S008 100g**

**S009 25g**

## Sodium Carbonate Anhydrous



$\text{Na}_2\text{CO}_3$  M.W. 105.99

**S466 500g**

## Sodium Citrate EM (tri-sodium)

Purity > 99% minimum. M.W. 294.11

**S010 500g**

**S011 100g**

## Sodium Hydrogen Carbonate EM

(Sodium bicarbonate), Purity 99.8% minimum,

M.W. 84.01

**S028 500g**

## Sodium Phosphate, Dibasic

(Di-sodium hydrogen orthophosphate),  $\text{Na}_2\text{HPO}_4$ .

M.W. 358.14

**S029 500g**

**BUFFERS** continued**Sodium Phosphate, Monobasic**

(Sodium dihydrogen orthophosphate),  $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$   
M.W. 156.01

**S043 500g**

**Tri-Sodium Orthophosphate**

Purity > 98%. M.W. 380.12

**S044 500g**

**Tannic Acid EM**

(Gallotannin).  $\text{C}_{76}\text{H}_{52}\text{O}_{46}$  M.W. 1701.23

**T046 100g**

**Tris Buffer EM**

(Tris (hydroxymethyl) aminomethane)  $\text{C}_4\text{H}_{11}\text{NO}_3$   
M.W. 121.14. Fine white crystals. May be used with  
metal-sensitive enzyme systems. Total heavy-metal  
content 2ppm maximum.

**T013 500g**  
**T014 250g**  
**T015 100g**

**Tris-Maleate**

(Tris (hydroxymethyl) aminomethane)  
 $\text{C}_4\text{H}_{11}\text{NO}_3 \cdot \text{C}_4\text{H}_4\text{O}_4$  M.W. 237.21

**T016 100g**  
**T017 25g**

**Veronal Sodium**

(Barbitone sodium).  $\text{C}_8\text{H}_{11}\text{O}_3\text{N}_2\text{Na}$  M.W. 206.18  
*A drug license is required for this product*

**V005 1Kg**  
**V002 500g**  
**V003 250g**  
**V004 100g**

**SOLVENTS****Acetone**

EM grade suitable for dehydration and the cleaning of  
microscope parts. A solvent for critical point drying.

M.W. 58.08  $\text{CH}_3\text{COCH}_3$  Boiling point : 56.2°C



**A018 500ml**

**Acetonitrile**

(Methyl cyanide). M.W. 41.05  $\text{CH}_3\text{CN}$  Boiling  
point : 80-81°C

A non-carcinogenic substitute for ethanol and  
propylene oxide in TEM tissue dehydration. Does not  
interfere with epoxy polymerisation and permits shorter  
dehydration times.



**A029 500ml**

**n, Amyl Acetate**

A solvent for critical point drying and also a solvent  
for Collodion.

M.W. 130.19  $\text{CH}_3\text{COOC}_5\text{H}_{11}$  Boiling point :  
142°C



**A019 500ml**

**Chloroform EM**

(Trichloromethane), M.W. 119.38  $\text{CHCl}_3$   
Boiling point : 61°C



**C007 500g**

**2,2-Dimethoxypropane**

(Acetone dimethyl acetal). M.W. 104.15  $(\text{CH}_3)_2\text{C}(\text{OCH}_3)_2$   
Boiling point : 79-81°C

A rapid dehydration agent.  
J.Histochem, Cytochem., 25, 247 (1977)  
Stain Technology, 54, 29 (1979)



**D030 500ml**

**SOLVENTS - continued****Dimethylsulphoxide**

(Methyl sulphoxide).(DMSO) M.W. 78.13 (CH<sub>3</sub>)<sub>2</sub>SO  
Protects fine structure of frozen sections cut in the cryostat.  
Zagury et al. J.Histochem., 16, 40 (1968)  
**D018 500ml**

**Dioxane EM**

(Diethylene oxide). M.W. 88.11 C<sub>4</sub>H<sub>8</sub>O<sub>2</sub>  
**D019 500ml**  
**D020 100ml**

**Ethanol, absolute**

**Duty paid**  
C<sub>2</sub>H<sub>5</sub>OH M.W. 46.07 Assay>99.8%. Water<0.2%  
**E022 500ml**  
**E047 2.5Ltr.**  
**E048 1Ltr.**

**Ethanol, denatured**

C<sub>2</sub>H<sub>5</sub>OH M.W. 46.07 Assay>99.8%. Water<0.2%  
**E203 500ml**

**Ethylene Dichloride EM**

(1,2-Dichloroethane). M.W. 98.96 Boiling P: 82-84°C  
Stabilised with alumina. Solvent for formvar.  
**E013 500ml**

**Ethylene Glycol**

(1,2-Ethanediol Glycol). M.W. 62.07  
**E023 500ml**

**Freon 113**

(1,1,2-Trichlorotrifluoroethane). B.P. 117.6°C  
**F012 500ml**  
**F012/1 1ltr**

**Glycerol**

M.W. 92.10  
**G041 250ml**

**Hexamethyldisilazane**

(HMDS) M.W. 161.40 C<sub>6</sub>H<sub>19</sub>Ns Si As an alternative to critical point drying for biological specimens. Hexamethyldisilazane has reported advantaged of speed, preservation of surface detail as well as reduced thermal and pressure stresses. HMDS may also reduce the extraction of cellular components compared with CPD.  
HMDS can be used to dry specimens on polycarbonate filters e.g. bacteria.  
Gives fast, less damaging preparation of soft insect tissue for SEM.  
Stain Tech., 58(6), 347 (1983)

**H028 500ml**

**Industrial Methylated Spirits 740P**

IMS 95% for dehydration and clearing is now available through TAAB in the following sizes:



**I013 IMS 2.5 litres**  
**I014 IMS 5 litres**

**Inhibisol**

**No longer available. Please contact us for possible replacement.**

**D054 5ltr.**  
**D075 1ltr.**  
**D074 500ml**

**Solvent CNP30**

**No longer available.**

**C024 5ltr.**  
**C023 1ltr.**  
**C022 500ml**

(Inhibisol and CNP30 are registered trade marks of Bestobell Paints & Chemicals)

**Methanol**

(Methyl alcohol). CH<sub>3</sub>OH M.W. 32.04 Purity> 99.8% free of acetone  
**M023 1ltr.**

SOLVENTS continued

## Methylene



(Dichloromethane). M.W. 84.93  $\text{CH}_2\text{Cl}_2$  Purity > 98%

Solvent for epoxy and polyester resin. Removes cured or uncured resin easily.

## Methyl Ethyl Ketone



(2-Butanone)  $\text{CH}_3\text{COCH}_2\text{CH}_3$  M.W. 72.11 Assay > 98%



M028 500ml

MountingClear Clearing Agent  
Xylene Substitute

The use of xylene in the clearing process of histological mounting is recognised as a hazard that should be avoided. This can be achieved by using **MountingClear** as the intermediate reagent between alcohol and the mounting medium. **MountingClear** is a fast evaporating non-hazardous isoalkane containing solvent which allows the use of regular mounting media.

## Iso-Pentane



(Methylbutane). M.W. 72.15

I010 500ml

## Iso-Propanol



(Isopropyl alcohol) (2-Propanol)  $\text{CH}_2\text{:CHC}(\text{CH}_3)\text{:CH}_2$   
M.W. 60.10

I012 1Ltr

## Propylene Oxide

See Page 22.16

## TAAB Resolve



An active solvent for polymerised resins.

R010 50ml

## TAAB Resin Solvent



A solvent for unpolymerised or partially polymerised resins and their components. Clean the glassware etc. with Resin Solvent and then wash with water. The solvent is water miscible.

R011 2.5ltr.  
R011/1 500ml

## Toluene



$\text{C}_6\text{H}_5\text{CH}_3$  M.W. 92.14



T252 1Ltr.

## UltraClear Xylene Substitute

UltraClear is a direct replacement for xylene in **Histological processing** and is human and environment friendly. It is a purified and balanced Isoparaffin mixture especially formulated to **replace xylene, Toluene and Limonene**. It may be used as an intermediate between alcohols and paraffin during tissue embedding.

Non Toxic • Odourless • Non Flammable • Non Carcinogenic • Dermatologically inert

M024 1ltr.  
M025 10 ltr.  
M026 200 ltr.

## Xylene



A substitute for propylene oxide as an intermediate liquid.

A.M.Glauert (1974) Practical methods in EM Vol.3 (North Holland) p.113



X001 500ml  
X002 5ltr.

## Cryoprotectants

## Dextran C

M.W. 60,000-80,000

D007 25g

## Hydroxyethyl Starch

H026 250g

## Polyvinyl Pyrrolidone

P016 100g



**EM Stains****Ammonium Molybdate EM**

(Molybdic acid, ammonium salt). M.W. 1235.86  
 $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}$   
 Negative stain  
 J. Cell Biol. 20, 350 (1964)  
 Muscatello, U., et al, J. Ultrastruct., Res, 52, 2 (1975)

**A013 100g**  
**A013/1 25g**

**Bismuth Metal, granulated**

Used to prepare an EM stain for nucleic acids.  
 Albersheim & Killias, J. Cell Biol., 17, 93 (1963)  
 M.A. Hayat, "Basic Techniques for TEM" p. 184 (1986)

**B009 100g**  
**B010 25g**

**Bromophenol Blue**

(3',3'',5',5''-Tetrabromophenolsulfonphthalein).  
 M.W.669.99  $\text{C}_{19}\text{H}_{10}\text{Br}_4\text{O}_5\text{S}$   
 Used to prepare mercuric bromphenol blue, a protein  
 stain for EM.

**B013 10g**

**Cadmium Iodide**

M.W. 366.21  $\text{CdI}_2$   
 Used for negative staining.

**C001 50g**

**Ferric Chloride EM - hexahydrate**

$\text{FeCl}_3\cdot 6\text{H}_2\text{O}$  M.W. 270.30  
 Used to prepare positive and negative colloidal  
 iron solutions as cell surface stains for EM.  
 Gasic et al., Lab invest., 18, 63 (1968)  
 Blanquet, P.R. and Loiez, A. J. Histochem.  
 Cytochem., 22, 368 (1974)

**F001 100g**

**Indium Trichloride EM – anhydrous**

$\text{InCl}_3$  M.W. 221.18  
 A metal stain for nucleic acids.  
 Watson & Aldridge J. biophys. Biochem. Cytol., 11,  
 257 (1961)

**I001 10g**

**Lanthanum Nitrate EM**

$\text{La}(\text{NO}_3)_3\cdot 6\text{H}_2\text{O}$  M.W. 433.03 Purity > 99%  
 Used to prepare colloidal lanthanum hydroxide-  
 containing fixatives for the demonstration of  
 intercellular spaces.  
 Revel & Karnovsky, J. Cell Biol., 33, C7 (1967)  
 Goodenough & Revel, J. Cell biol., 45, 272 (1970)  
 Stain Tech. (USA) 50, 171 (1975)  
 J.Ultrastruct., 60, 348: 59, 126 (1966)

**L023 50g**  
**L001 25g**

**Lead Acetate EM**

$\text{Pb}(\text{CH}_3\text{COO})_2\cdot 3\text{H}_2\text{O}$  M.W. 379.33  
 Metal stain for TEM. Used for in-block and thin  
 sections staining.  
 Stain Technology 40, 69 (1965)  
 Kushida, H., J. Electron Micro., 15, 93 (1966)

**L002 250g**  
**L020 100g**  
**L021 25g**

**Lead Citrate**

$\text{Pb}(\text{C}_6\text{H}_5\text{O}_7)_2\cdot 3\text{H}_2\text{O}$  M.W. 1053.82 Purity > 99%  
 For the preparation of a simplified lead stain. The  
 most widely used metal stain for ultra thin sections.  
 Reynolds, E. S., J. Cell biol., 17, 208 (1963)  
 Venable, J.H. and Coggeshall, R., J. Cell Biol., 25,  
 407 (1965)  
 J. Ultrastruct Res., 52, 120 (1975)

**L003 50g**  
**L018 25g**  
**L036 100g**

**Lead Nitrate EM**

Pb(NO<sub>3</sub>)<sub>2</sub> M.W. 331.20 Purity > 99%  
Metal stain for ultra thin sections.  
J. Histochem., Cytochem., 11, 2, (1963)  
Sato, T., J. Electron Micro., 16, 733 (1976)

**L004**      **500g**  
**L005**      **100g**  
**L019**      **25g**

**Lead Tartrate**

(Tartaric acid Lead (11) salt), C<sub>6</sub>H<sub>4</sub>O<sub>6</sub>Pb, M.W. 355.26

**L006**      **50g**  
**L022**      **25g**

**Methenamine**

(Hexamethylenetetramine). (Hexamine) C<sub>6</sub>H<sub>12</sub>N<sub>4</sub>  
M.W. 140.19

Used in conjunction with silver nitrate for staining carbohydrates



**M006**      **100g**  
**M006/1**      **50g**

**Methylamine Tungstate**

An excellent negative stain. Unlike phosphotungstic acid it does not damage virus particles and it is consequently valuable for staining delicate viruses. The material wets grid films and specimens very well.

Faberge A.C. and Oliver R.M. (1974) Microscopie 20, 242 for application to plant viruses.

**M019**      **1g**

**Phosphomolybdic Acid EM**

(dodeca-Molybdophosphoric acid).  
H<sub>3</sub>PO<sub>4</sub>.12MoO<sub>3</sub>.24H<sub>2</sub>O M.W. 2257.62  
Positive and negative stain.

**P010**      **100g**  
**P011**      **25g**

**Phosphotungstic Acid EM**

(Tungstophosphoric acid). H<sub>3</sub>PO<sub>4</sub>.12WO<sub>3</sub>.H<sub>2</sub>O  
M.W. 2880.17

Positive and negative stain  
Holt, J. Ultrastruct. Res., 68, 58 (1979)  
J. Ultrastruct Res., 45, 183 (1973)

Farragiana, T. and Marinozzi, V. J. Cell Biol., 50, 550 (1979)

Used as a fixative  
Issidorides, M. R., and Kasorchis, T. J. Histochem., 73, 21 (1981)

**P012**      **100g**  
**P013**      **25g**

**Potassium Dichromate**

K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> M.W. 294.18  
Metal stain

**P023**      **500g**

**Platinum Blue TEM Stain**  
**An Alternative to Uranyl Acetate**  
(see also TAAB EM Stain 336)

TOXIC

TAAB Platinum Blue EM Stain can be used as an alternative to Uranyl acetate in thin section post-staining whenever UA is not available. Good results can be achieved with double staining with Pb in many instances. Whilst not radioactive and supplied as a solution to minimise handling, there are toxicity issues to be aware of. Used with dilutions of 25:1 and as high as 100:1.



Please ask for our data sheet.

**S473 1ml ampoule**

**Ruthenium Red EM**

Positive staining for EM, see also marker section  
Van Norstrand Reinhold Co., New York (1975) pp 163-165

Luft, J.H. J. Cell Biol., 23, 54A (1964)

Zacks et al., J. Histochem. Cytochem., 21, 703 (1973)

Kadar et al., J. Pathol., 108, 275 (1973)

**R003**      **1g**  
**R004**      **100mg**

**TAAB EM Stain 336  
Uranyl Acetate Alternative**

A new, non hazardous, non radioactive stain to replace Uranyl acetate. TAAB EM Stain 336 is a mixture of lanthanum salts, samarium triacetate ( $\text{Sm}(\text{CH}_3\text{COO})_3$ ) and gadolinium triacetate ( $\text{Gd}(\text{CH}_3\text{COO})_3$ ). Dilute the original TAAB EM Stain 336 4x with distilled water.

*Please ask for data sheet*

New versatile staining reagents for biological TEM that substitute for Uranyl acetate Nakakoshi M, Nishioka H and Katayama E, J of Electron Microscopy 60(6), 401-407 (2011).

**S472 25ml Concentrate**

**Silver Nitrate EM**

$\text{AgNO}_3$  M.W. 169.89 Store away from light  
Swift, J. A. J.R. Microsc. Soc., 88, 449 (1968)  
Rambourg, A. J. Histochem. Cytochem., 15, 409 (1967)  
Ribi, W.A., Stain Technol., 51, 13 (1976)

**S004 25g**

**Sodium Silicotungstate EM**

Negative stain.

Valentine & Pereira, J. Molec. Biol., 13, 13 (1965)  
Wilcox, Ginsberg & Anderson, J. Exp. Med., 118, 307 (1963)

**S019 100g**  
**S020 25g**

**Sodium Tungstate EM**

$\text{Na}_2\text{WO}_4 \cdot 2\text{H}_2\text{O}$  M.W. 329.86 Assay: > 99%  
Negative stain  
Stockert, J.C. Biol. Cellul., 29, 211 (1977)  
Takeuchi, I.K. J. Electron Micro., 30, 150 (1981)

**S023 50g**

**Thiocarbohydrazide EM**

$(\text{NH}_2\text{NH})_2\text{CS}$  M.W. 106.15 Purity >99%  
Used in techniques for demonstration of polysaccharides, and for the staining of membranes.

Seligman et al., J. Cell Biol., 30, 424 (1966)  
Seligman et al., J. Histochem. Cytochem., 13, 629 (1965)  
Thiery, J.P. J. Microscopie., 6, 987 (1967)  
Lo, H.K. et al., J. Histochem. Cytochem., 35, 393 (1987)

**T009 1g**

**Thiosemicarbazide EM**

$\text{NH}_2\text{CSNHNH}_2$  M.W. 91.14 Purity >98%  
References see Thiocarbohydrazide

**T010 25g**

**Uranyl Acetate EM Powder**

Produced from depleted uranium Activity <.078Gbg  
 $\text{UO}_2(\text{OCOCH}_3)_2 \cdot 2\text{H}_2\text{O}$  M.W. 424.15

A universal EM stain for thin sections, en-block staining and negative staining.

Stain Technology 49, 305 (1974)  
J. Ultrastruct. Res., 61, 21 (1977)

**U001 50g**  
**U006 500g**  
**U007 25g**  
**U008 10g**

**Uranyl Acetate EM Solution**

A solution of Uranyl Acetate EM Powder in distilled water suitable for negative staining of virus, particles etc, en-block staining and for positive staining of sections.

**U001/S/1/10** Uranyl acetate 1% 10ml  
**U001/S/1/25** Uranyl acetate 1% 25ml  
**U002/S/2/10** Uranyl acetate 2% 10ml  
**U002/S/2/25** Uranyl acetate 2% 25ml

**Uranyl Zinc Acetate**

Used as a Laboratory reagent in the determination of sodium concentrations in solutions

**U013** Uranyl zinc acetate 5gm

**Uranyl Magnesium Acetate**

M.W. 502.13 A clean-working uranyl stain  
Frasca & Parks, J. Cell. Biol., 25, 157 (1965)

**U003 50g**  
**U011 10g**

**Uranyl Nitrate EM**

M.W. 502.13 Used as a negative stain.  
Valentine & Home in the Interpretation of Ultrastruct. Academic Press, New York p263, (1962)  
In tissue samples it stabilises nucleic acid and cell membrane. Solutions are more stable than uranyl acetate and react primarily with negatively charged groups in the absence of phosphate ions. Also used in the manufacture of generator protactinium.

**U004 25g**

**Vanadyl Sulphate**

(Vanadium (IV) oxide sulphate).  $\text{VOSO}_4 \cdot 5\text{H}_2\text{O}$   
M.W. 253.08

Used with ammonium molybdate for the preparation of vanadomolybdate stain.

Callahan & Homer, J. Cell Biol., 20, 350 (1964)

**V001 25g**

## Light Microscopy Stains

TAAB has considerably extended its' range of dry and wet Light Microscopy Stains, but if what you require is not listed please contact the TAAB sales team with your requirement and every effort will be made to source the material at a very competitive price. Most stains should not present a hazard in use or transit, however dry stains should be considered as an irritant and breathing the powder should be avoided. Wet stains have their individual hazard listed where applicable.

### How to order:

The stains are listed by their prime catalogue number e.g. **SD035 Brilliant Green**. To this is added the quantity required (weight or volume), so to Order 25g of Brilliant Green the code is **SD035/25**. To order 500ml of **Feulgen Stain(Schiff)** for example, the code is **SW050/500**

### LM DRY STAINS

Cat. No.	Description	CI No.	10g	25g	100g
SD 001	Acid Violet	16580	*	*	
SD 002	Acridine Orange	46005	*	*	
SD 005	Acriflavin	46000	*	*	*
SD 006	Alcian Blue 8GX	74240	*	*	
SD 007	Alcian Yellow	12840	*	*	
SD 008	Alizarin Red S	58005	*	*	
SD 011	Alkaki Blue 5B	42750	*	*	
SD 014	Amarinith	16185	*	*	
SD 015	Aniline Blue Water Sol	42755	*	*	*
SD 016	Auramine O	41000	*	*	*
SD 017	Azo Black	30235	*	*	*
SD 018	Azo Phloxine	18050	*		
SD 019	Azur 1		*	*	
SD 020	Azur 11		*	*	
SD 021	Azur 11 Eosin		*	*	
SD 022	Azur A	52005	*	*	
SD 023	Azur B	52010	*	*	
SD 024	Azur A Eosinate		*	*	
SD 025	Azur B Eosinate		*	*	
SD 030	Biebrich Scarlet	26905	*	*	
SD 031	Bismark Brown R	21010	*	*	
SD 032	Bismark Brown Y	21000	*	*	*
SD 033	Brilliant Cresyl Blue	51010	*	*	
SD 034	Brilliant Crocein	27290	*	*	
SD 035	Brilliant Green	42040	*	*	*
SD 040	Carbol Fuchsin(Powder)		*	*	
SD 042	Carmine	75470	*	*	
SD 043	Celestine Blue	51050	*	*	
SD 044	Chlorantine Fast Red	28160	*	*	
SD 046	Chromotrope 2R	16570	*	*	
SD 047	Chrysoidin Y	11270	*	*	
SD 049	Congo Red	22120	*	*	
SD 050	Coomassie Brilliant Blue G250	42655	*	*	

Cat. No.	Description	CI No.	10g	25g	100g
SD 051	Coomassie Brilliant Blue R250	42660	*	*	
SD 052	Cresyl Fast Violet		*	*	
SD 053	Crystal Ponceau	16250	*	*	
SD 054	Crystal Violet	42555	*	*	*
SD 060	Eosin Ethyl	45386	*	*	
SD 061	Eosin Yellowish	45380	*	*	
SD 062	Eosin BA	45400	*	*	
SD 063	Erioglaucine	42090	*	*	
SD 064	Erythrocin B	45430	*	*	
SD 065	Ethyl Violet	42600	*	*	
SD 067	Evans Blue	23860	*	*	
SD 071	Fast Blue BB Salt	37175	*	*	
SD 072	Fast Blue RR Salt	37155	*	*	
SD 073	Fast Garnet GBC Salt	37210	*	*	
SD 074	Fast Green FCF	42053	*	*	
SD 076	Fast Red 7B	26050		*	
SD 078	Fast Violet B Salt	37165	*	*	
SD 079	Fields Stain A (Compound)			*	*
SD 080	Fields Stain B (Compound)			*	*
SD 081	Fluorescein	45350	*	*	
SD 082	Fuchsin Acid	42685	*	*	
SD 083	Fuchsin Basic for ZN	42510	*	*	*
SD 084	Fuchsin Basic for Schiff	42510	*	*	*
SD 090	Gallocyanin	51030	*	*	
SD 091	Giemsa Stain		*	*	*
SD 092	Grams Iodine (Compound)			*	*
SD 095	Haemalum Mayer (Compound)	75290	*	*	
SD 096	Haematein	75290	*	*	*
SD 097	Haematoxylin	75290	*	*	*
SD 098	Haematoxylin (Harris)		*	*	*
SD 107	Jenner Stain		*	*	*
SD 110	Leishman Stain		*	*	*
SD 112	Light Green SF	42095	*	*	*
SD 113	Lissamine Fast Red B	17045		*	
SD 114	Lissamine Fast Yellow	18965		*	
SD 115	Lissamine Green B	44090		*	

Cat. No.	Description	CI No.	10g	25g	100g
SD 117	Litmus (pH Indicator)		*		
SD 118	Lugols Iodine (Compound)			*	*
SD 119	Luxol Fast Blue MBS		*	*	
SD 125	Malachite Green	42500	*	*	*
SD 126	Martius Yellow	10315	*	*	
SD 127	May Grunwald Stain		*	*	*
SD 128	Metanil Yellow	13065	*	*	
SD 129	Methyl Blue	42780	*	*	
SD 130	Methyl Green	42585	*	*	
SD 131	Methyl Orange	13025	*	*	
SD 132	Methyl Red	13020	*	*	
SD 133	Methyl Violet 2B	42535		*	*
SD 134	Methyl Violet 6B	42555	*	*	
SD 135	Methylene Blue (Chloride)	52015	*	*	*
SD 136	Methylene Blue Alkaline (Loeffler)		*	*	
SD 137	Methylene Blue (Unna)		*	*	
SD 138	Milling Yellow	18950	*	*	
SD 144	Naphthalene Black 10B	20470	*	*	
SD 145	Naphthalene Green B	10020	*	*	
SD 148	Neutral Red	50040	*	*	
SD 149	New Fuchsin	42520	*	*	
SD 150	New Methylene Blue	52030	*	*	
SD 151	Nigrosin (Alcohol Soluble)	50415	*	*	*
SD 152	Nigrosin (Water Soluble)	50420	*	*	*
SD 153	Nile Blue	51180	*	*	
SD 154	Nuclear Fast Red	60760	*	*	
SD 158	Oil Red O	26125	*	*	
SD 159	Orange G	16230	*	*	
SD 160	Orcein ( Synthetic)		*		
SD 163	Pararosaniline HCl	42500	*	*	
SD 164	Phloxine B	45410	*	*	
SD 165	Ponceau Fuchsin (Masson)			*	
SD 167	Ponceau S	27195	*	*	
SD 168	Ponceau de Xylidine	16150	*	*	
SD 169	Pontamine Sky Blue 6BX	24410	*	*	
SD 170	Pyronin Y	45005	*		
SD 175	Rhodamine B	45170	*	*	*
SD 176	Rhodamine 6G	45160	*		

Cat. No.	Description	CI No.	10g	25g	100g
SD 177	Rosaniline HCl	42510		*	*
SD 178	Rose Bengal	45440	*	*	
SD 179	Rosolic Acid		*	*	
SD 184	Safranin O		*	*	
SD 185	Scarlet R		*	*	
SD 189	Sirius Red F3B		*	*	
SD 193	Sudan III		*	*	
SD 194	Sudan IV		*		
SD 195	Sudan Black B		*	*	
SD 196	Sudan Yellow		*	*	
SD 197	Sulpho Naphthyl Red		*	*	
SD 198	Sun Yellow		*	*	
SD 205	Tartrazine		*	*	
SD 207	Thiazine Red			*	
SD 208	Thioflavin T		*	*	
SD 209	Thionin		*	*	
SD 210	Titan Yellow			*	*
SD 211	Toluidine Blue O			*	*
SD 212	Tropaeolin O		*	*	
SD 213	Trypan Blue		*	*	
SD 219	Victoria Blue B		*	*	*
SD 223	Water Blue 6B Extra P		*	*	
SD 224	Wrights Stain		*	*	*
SD 225	Xylene Cyanol			*	*

## LM WET STAINS

Catalogue No	Description	100ml	250ml	500ml	1litre	Hazard
SW 001	Acridine Orange 1% in Acetate Buffer				*	
SW 002	Alberts Stain - Soln 1		*	*		
SW 003	Alberts Stain - Soln 2		*	*		
SW 004	Alcian Blue 8GX	*		*		
SW 005	Aniline Blue (1% Aqueous)	*	*			
SW 006	Aniline Blue (Masson)	*	*			
SW 008	Armand Stain			*	*	Toxic/Flammable
SW 009	Auramine/Rhodamine/Phenol		*	*		
SW 010	Auramine/Phenol (Lampert)		*	*	*	
SW 011	Auramine/Phenol 10x conc.	*				Toxic/Flammable
SW 012	Auramine Decolouriser (Lampert)		*	*	*	Toxic/Flammable
SW 020	Carbol Fuchsin (Gram)		*	*		
SW 021	Carbol Fuchsin (Gram) 10x conc.	*				
SW 022	Carbol Fuchsin (Ziehl-Neelson)		*	*	*	
SW 023	Carbol Fuchsin (ZN) -150ml makes 1L	150ml				Toxic/Flammable
SW 024	Carbol Fuchsin (Kinyoun)		*	*		
SW 026	Carbol Methyl Green Pyronin (Unna Papp)	*		*		
SW 027	Carmine (Best) Stock Soln.	*				
SW 029	Congo Red (for Amyloid) Stock Soln.	*		*		
SW 030	Cotton Blue - Lactophenol (Amann)	*		*		
SW 031	Crystal Violet 0.5% (Aqueous)		*	*	*	
SW 032	Crystal Violet 5% (Aqueous)	*		*		
SW 033	Crystal Violet 10x conc.	*				
SW 034	Crystal Violet 5% (Alcoholic)	*		*		Flammable
SW 035	Crystal Violet (for Gram Stain)		*	*	*	
SW 036	Crystal Violet Oxalate (Gram)		*	*	*	
SW 040	Elastin Stain (Miller)	*		*		Flammable
SW 041	Elastin Stain (Weigert)	*		*		
SW 043	Eosin Y (1% Aqueous)			*	*	
SW 044	Eosin Y (5% Aqueous)	*		*		
SW 045	Eosin Y (1% Alcoholic)			*	*	Flammable
SW 050	Feulgen Stain (Schiff)	*		*		
SW 051	Field Stain (Solution A)	*		*	*	
SW 052	Field Stain (Solution B)	*		*	*	
SW 053	Fuchsin Basic Salt (Sat. Alcoholic Soln.)				*	Flammable
SW 059	Giemsa Stain (Modified-Glycerol/Methanol)			*	*	Toxic/Flammable
SW 060	Giemsa Stain Rapid			*	*	
SW 061	Grams Iodine		*	*	*	
SW 063	Grams Decolouriser		*			Toxic/Flammable
SW 068	Haemalum Mayer	*		*	*	
SW 069	Haematoxylin (10% Alcoholic)	*				Flammable

Catalogue No	Description	100ml	250ml	500ml	1litre	Hazard
SW 070	Haematoxylin Delafield	*		*		
SW 072	Haematoxylin Ehrlich	*		*	*	
SW 073	Haematoxylin Gill 1	*		*	*	
SW 074	Haematoxylin Gill 2	*		*	*	
SW 075	Haematoxylin Gill 3	*		*	*	
SW 076	Haematoxylin Harris (no Acetic Acid)	*		*	*	
SW 077	Haematoxylin (with Acetic Acid)	*		*	*	
SW 078	Haematoxylin Heidenhains Solution 1	*		*	*	
SW 079	Haematoxylin Heidenhains Solution 2	*		*		
SW 081	Haematoxylin Weigert Solution A	*	*	*		
SW 082	Haematoxylin Weigert Solution B	*	*	*		
SW 085	Jenner Stain (Modified)			*	*	Toxic/Flammable
SW 089	Leishman Stain		*	*	*	Toxic/Flammable
SW 090	Light Green (Masson)	*		*		
SW 091	Light Green (1% Alcoholic)	*		*		Flammable
SW 094	Lugols Iodine		*	*	*	
SW 095	Lugols Iodine 10x conc.	*				
SW 100	Malachite Green (Aqueous)		*	*		
SW 101	Malachite Green 10x conc.	*				
SW 102	May Grunwald Stain (Modified)			*	*	Toxic/Flammable
SW 103	Methyl Blue (1% Aqueous)	*	*			
SW 105	Methyl Green - Pyronin (Unna Papp.)	*		*		
SW 108	Methyl Violet 6B 10x conc.	*				
SW 111	Methylene Blue 1% in 20% IMS		*	*		Flammable
SW 112	Methylene Blue 1% Alcoholic		*	*		Flammable
SW 113	Methylene Blue 10x conc.	*				
SW 115	Methylene Blue Polychrome (Loeffler)	*		*		
SW 116	Methylene Blue Polychrome (McFadyean)	*				
SW 118	Mucicarmine (Mayer)	*		*		
SW 123	Neissers Stain A Methylene Blue	*	*	*		
SW 124	Neissers Stain B Crystal Violet	*	*	*		
SW 125	Neissers Stain C Bismark Brown	*	*	*		
SW 126	Neissers Stain D Chrysoidin	*	*	*		
SW 127	Neutral Red (1% Aqueous)		*	*		
SW 129	Neutral Red (Jensen) 10x conc.	*		*		
SW 130	Neutral Red (Jensen)		*	*	*	
SW 131	New Methylene Blue for Reticulocytes	*				
SW 136	Nigrosin (5% Aqueous)	*		*		

Catalogue No	Description	100ml	250ml	500ml	1litre	Hazard
SW 137	Nile Blue (Fat Stain)	*		*		
SW 140	Orange G (5% Aqueous)	*		*		
SW 141	Orcein Acetic (La Cour)	*		*		Corrosive
SW 146	Papanicolaou Stain EA36			*	*	Flammable
SW 147	Papanicolaou Stain EA65			*	*	Flammable
SW 149	Papanicolaou Stain EA50 Traditional			*	*	Flammable
SW 150	Papanicolaou Stain OG6			*	*	Flammable
SW 153	Perls Stain Solns. 1 & 2 (Twin Pack)	*	*			
SW 154	Picric Acid (Sat. Aqueous)			*		
SW 155	Picric Acid (Sat. Alcoholic)			*		Flammable
SW 157	Ponceau Fuchsin (Masson)	*		*		
SW 158	Potassium Permanganate 1% Aqueous			*		
SW 171	Saffranin (1% Alcoholic)	*		*		Flammable
SW 172	Saffranin (1% Aqueous)	*	*	*		
SW 173	Saffranin conc. 200ml makes 1 litre	200ml				
SW 184	Thiazine Red 10x conc.	*				
SW 189	Thiazine Red	*		*	*	
SW 190	Toluidine Blue (1% Aqueous)	*		*		
SW 195	Van Gieson Stain	*		*		Flammable
SW 198	Wrights Stain (Modified)	*	*	*	*	Toxic/Flam
SW 200	ZN Decolouriser		*			

#### CONCENTRATES FOR BACTERIOLOGY


Catalogue No.	Description	Hazard
SB001	Auramine Phenol	Toxic/Flammable
SB002	Carbol Fuchsin (Gram)	
SB003	Carbol Fuchsin (ZN)	Toxic/Flammable
SB004	Crystal Violet (Gram)	
SB005	Grams Iodine	
SB006	Lugols Iodine (Gram)	

Catalogue No.	Description	Hazard
SB007	Malachite Green (ZN)	
SB008	Methylene Blue (ZN)	
SB009	Methyl Violet 6B (Gram)	
SB010	Neutral Red (Gram)	
SB011	Safranin (Gram)	
SB012	Thiazine Red	

Each of the above concentrates is sufficient to make 1 litre of stain solution.




## Amyloid Stain Kit

	Consists: Alcoholic Sodium Chloride solution	500ml
	Sodium Hydroxide solution	25ml
	Congo Red stain	500ml

**SW407** 1Kit


## Gram Stain Kit

Used to demonstrate Gram positive and gram negative micro-organisms in tissue sections etc.

	Consists: Crystal Violet Oxalate	250ml
	Gram's Iodine Diluent	250ml
	Gram's Iodine Concentrate	10ml
	Gram's Decolouriser	250ml
	Counterstain – see below	250ml
	<i>Counterstains:</i>	
	Gram Fuchsin	250ml
	Neutral Red	250ml
	Safranin	250ml


**SW400** 1 kit

## Elastin Stain Kit (Miller)

	Consists: Potassium Permanganate solution	250ml
	Oxalic Acid solution	250ml
	Elastin Stain Miller	250ml
	Van Gieson stain	250ml


**SW405** 1Kit

## Elastin Stain Kit (Weigert)

	Consists: Alcoholic Haematoxylin stain	2 x 200ml
	Ferric Chloride solution	125ml
	Weigerts Iodine	180ml
	Van Gieson stain	250ml


**SW406** 1Kit

## Periodic Acid Schiff Stain Kit

	Consists: Feulgen Stain Schiff	100ml
	Periodic Acid	100ml
	Haematoxylin Gill 3	100ml


**SW403** 1 kit

## Perl's Stain Kit (iron stain)

	Consists: Perl's Stain solution 1	100ml
	Aqueous Potassium Ferrocyanide	
	Perl's Stain solution 2	100ml
	Hydrochloric Acid	
	<i>Counterstain:</i>	
	Neutral Red	100ml


**SW409** 1Kit

## Sudan Black Stain Kit (Puchtlers)

	Consists: Sudan Black solution	250ml
	Buffer Solution	100ml
	Haematoxylin Gill 3	100ml


**SW404** 1 kit

## Trichrome Stain Kit (Masson)

	Consists: Biebrich Scarlet/Acid Fuchsin stain	250ml
	Phosphotungstic Acid solution	250ml
	Phosphomolybdic Acid solution	250ml
	Aniline Blue stain	250ml


**SW408** 1Kit

## Cold ZN Kinyoun Stain Kit

	(Cold Ziehl-Nielsen stain) acid fast staining kit	
	Consists: Carbol Fuchsin –Kinyoun	250ml
	Decolouriser	250ml
	Counterstain – see below	250ml
	<i>Counterstains:</i>	
	Malachite Green	250ml
	Methylene Blue	250ml

**SW401** 1 kit

## ZN Stain Kit

	Ziehl-Nielsen acid fast staining kit	
	Consists: Carbol Fuchsin	250ml
	TB Differentiator	250ml
	Counterstain – see below	250ml
	<i>Counterstains:</i>	
	Malachite green	250ml
	Methylene Blue	250ml

**SW402** 1 kit

## Mountants

### Canada Balsam (Dried)

C402 25g

### Canada Balsam in Xylene



Refractive Index 1.522  
Wt. per ml @ 20°C is about 0.98g



C403 100ml

### Citifluor Mountants

Antifadent mountant solutions, The photofading of fluorescein-labelled materials can be retarded by the use of the Citifluor mountants.



AF1 - Glycerol-phosphate buffered solution containing additives for use with labelled tissue sections. RI 1.4609

AF2 - Glycerol solution containing additives for use with labelled tissue sections. RI 1.46

AF3 - Phosphate-buffered saline solution containing additives for examination of whole cells. RI 1.338

<b>M183</b> Type AF1	<b>25ml</b>
<b>M215</b> Type AF2	<b>25ml</b>
<b>M216</b> Type AF3	<b>25ml</b>

### DPX Mountants

A mixture of distyrene, a plastiser and xylene. Perhaps the most well known of all mountants replacing xylene-balsam. A colourless synthetic mountant preserving the stain and drying quickly.



#### Low viscosity

**M192/L** 500ml



#### Standard viscosity

**M192** 500ml

#### Thick viscosity (Specially for Cytology)

**M192/T** 500ml

#### Braidwood DPX

Non toxic, fast mounting medium (formulated with non-toxic phthalates) compatible with aromatic clearing agents and automatic coverslippers. Optically clear and does not cause fading of stains.

<b>M192/D/100</b>	<b>100ml</b>
<b>M192/D/500</b>	<b>500ml</b>

### Eukitt



This is a quick hardening (20 minutes) mounting medium, it is neutral and colourless having the same refractive index as glass. It spreads quickly and evenly without forming air bubbles and does not discolour with age. Useful for sealing coverslips over wet preparations.

**M233** 100ml

### Gum Arabic

**G008** 250g

### Hystomount

A polystyrene resin mountant for stained dehydrated specimens. It is easy to use, mobile, crystal clear, rapid drying, non-shrinking and stable with a pH of 6.6 - 7.1. No fluorescence under UV and a RI of 1.50



**M124** 100ml

### Meltmounts

A series of PCB Free mounting media of specially formulated optical quality thermoplastics for use in slide mounting and other optical coupling applications. Meltmounts™ are instant requiring no 'oven' time, contain no solvents, are less expensive per slide, reversible thermally for sample retrieval or re-orientation and soluble in toluene for special techniques or clean-up.

Meltmounts™ become fluid at 65°C a temperature chosen as it is harmless to the majority of specimens. When returned to room temperature it forms a resilient bond which can be re-melted if needed. Meltmount is also available in a Quick-Stick™ form which can be used to make permanent microscope mounts quickly.

<b>M184</b> Meltmount 1.539	30ml
<b>M185</b> Meltmount for Chrysotile Asbestos	30ml
<b>M186</b> Meltmount 1.582	30ml
<b>M187</b> Meltmount 1.605	30ml
<b>M188</b> Meltmount 1.662	30ml
<b>M189</b> Meltmount 1.680	30ml

## Mountex



A specially formulated acrylic resin to enable slides to be coverslipped from absolute alcohol thus eliminating the final xylene stages. Low viscosity, soluble in xylene and alcohol, rapid drying, neutral and colourless. RI 1.488



**M199 1ltr**

## Paraseal

(For sealing fluid mounts)



**M232 100ml**

## Permout



A toluene-based synthetic resin mounting medium, for rapid mounting and long term storage of slides. Permout has a low viscosity for a thinner mounting layer with better optical quality and bubble-free preparations. It has a refractive index near that of a fixed protein which helps to keep images free of distortion. Ideal for mounting coverslips to slides with thick or thin specimens Permout preserves most biological stains with little or no fading when the slides are stored in darkness. It contains an anti-oxidant to prevent the formation of annular rings and its high softening point (155°C/311°F) makes it suitable for microprojection

**M201 500ml**

## Pertex



Manufactured from a resin based on butyl acrylic polymers dissolved in xylene. Hardens rapidly without drying back, has a neutral pH and resists discolouring. Low viscosity reduces bubble formation and can be used in automatic coverslipping machines. RI 1.492

**M191 1ltr**

## Ultrakitt Xylene-free Mountant



UltraKitt is a mounting medium that is miscible with UltraClear, Xylene, Toluene and Iso-propylalcohol (IPA). UltraKitt is unique, with a granted and filed patent for Europe and the USA. UltraKitt is safe as it does not contain dangerous aromatic solvents like Xylene or Toluene.

**M540 Ultrakitt Mountant 100ml**

## UV Free Mountant (Aqueous)

**M202 100ml**

## Watermount (Aqueous)

Watermount M204 is a mixture of water soluble plant resins and is particularly suitable for fat stains or any application where a xylene or organic solvent base is best avoided. It will yellow and crack slightly with age as it is made from natural substances that will biodegrade, but this is only after many years. The RI is 1.4045

**M204 100ml**

## Immersion Oils

### Cedarwood Oil

Clearing agent

**C042 100ml**  
**C043 500ml**

### Cedarwood Oil – Thick

**C045 100ml**  
**C046 500ml**

### Fractoil Immersion Oil

Non- fluorescent immersion oil

**F178 100ml**

### Panscan Immersion Oils

*Panscan* and *Panscan Xtra* are two high-quality synthetic immersion oils designed to meet a wide range of conditions and uses. Both oils share similar properties being negative to fluorescence (254nm – 400nm), toxicity, absorbance (380nm – 780nm) air entrainment, drying and of course flammability.

*Panscan Xtra* has been developed to meet the higher criteria imposed by certain research workers and photomicroscopists and has a Refractive Index of 1.518 as compared with *Panscan* at slightly less than 1.480

**O082 Panscan Immersion oil 500ml**

**O083 Panscan Xtra Immersion oil 500ml**

**O083/1 Panscan Xtra Immersion oil 100ml**

**Cryo-M-Bed**

An embedding compound for **frozen** tissue specimens, it leaves no residue to discolour slide or section. Strong adhesion between tissue and object holder and high viscosity holds specimen in correct orientation while medium is undergoing freezing.

Miscible with water allowing easy removal.

**C028**      **100ml**  
**C028/1**    **10 x 100ml**

**O.C.T. Compound**

Embedding medium for frozen tissue specimens.

**O023**      **125ml**

**Cryo Freeze Aerosol**

Instant freezing to  $-71^{\circ}\text{C}$ , suitable for freezing tissue and paraffin blocks, recommended as the ideal freezing medium for Cryo-M-Bed specimen embedding compound.

**C404**      **350g**

**Colloids & Proteins****Agar powder**

For microbiology.  
pH (1.5% in  $\text{H}_2\text{O}$ ,  $37^{\circ}\text{C}$ ) is 5-7.  
Gel strength (1.5% gel) > 300g/cm<sup>2</sup>

**A010**      **250g**  
**A011**      **100g**

**Bovine Plasma Albumin**

30% solution.

**B011**      **20ml**

**Bovine Plasma Albumin**

Cryst. Purity 99% minimum  
Has also been used for embedding tissues for immunocytochemical purposes.  
McLean & Singer, Proc. Natn. Acad. Sci. U.S.A. 65, 122 (1970)

**B012**      **1g**

**Butvar B98**

Polyvinyl butyl resin, also used for thin film support, soluble in chloroform.

Handley & Olsen, Ultramicroscopy, 4, 479 (1979)  
Baumeister, Cytobiology, 17, 246 (1978)

**B026**      **100g**

**Carbowax****Polyethylene glycol**

Also an embedding medium for microscopy and histochemistry.

**PEG 200** viscous liquid. M.W. 190-210  
**C002**      **500g**

**PEG 400** viscous liquid. M.W. 380-420  
**C003**      **500g**  
**C029**      **100g**

**PEG 1000** waxy. M.W. 950-1050  
**C004**      **500g**

**PEG 4000** waxy. M.W. 3500-4500  
**C005**      **500g**

**Dextran**

Pharmaceutical grade, M.W. 60,000 to 90,000

**D007**      **25g**

**Formvar**

Polyvinyl formvar

**F004**      **100g**  
**F005**      **25g**

**Gelatin, powder**

From porcine skin

**G001**      **250g**

**Hydroxyethylcellulose**

H007 100g

**Polyvinyl Alcohol**

M.W. 30,000 to 50,000. 87-89% hydrolysed

P014 500g  
P015 100g**Polyvinyl Pyrrolidone**

Pharmaceutical grade. M.W.40,000

P016 100g

**Enzymes****Collagenase**

Store below -20°C Salt-free, lyophilised.  
Used in conjunction with hyaluronidase for the dissociation of tissues into individual cells for EM and biochemical studies.  
Berry & Friend, J. Cell Biol., 43, 506 (1969)

C011 50mg

**Deoxyribonuclease - 1**

Store 0°C (Bovine pancreas) Salt-free, lyophilised. Digestive enzyme forming 5'nucleotides from DNA. Contains a small amount of glycine stabiliser. Activity 2000-2600 kunitz units/mg.

D001 100mg

**Deoxyribonuclease - 11**

Store 0°C (Bovine spleen) Essentially salt-free, lyophilised. Digestive enzyme forming 3'nucleotides from DNA. Activity >250 Kunitz units/mg.

D002 100mg

**Hyaluronidase**

Store below -20°C (Ovine testes) Salt-free, lyophilised. Used in conjunction with collagenase.  
Activity 0.02U/mg.  
Berry & Friend, J. Cell Biol., 43, 506 (1969)

H004 1g

**Neuraminidase**

Store 4°C (Vibrio cholerae) Used to remove sialic acid from cell surface membranes.  
Activity 500 units/mg.  
Gasic & Berwick, J. Cell Biol., 19, 223 (1963)  
Benedetti & Emmelot, J. Cell Biol., 2, 499 (1967)

N001 1ml

**Pepsin**

Store 4°C Proteolytic enzyme.

P004 25g

**Peroxidase**

Store at 2° - 8°C (Horseradish) Salt-free, lyophilised.  
**Grade 1:** Activity 250-330 purpurogallin units/mg. RZ value 3.0  
**Grade 11:** Activity 150-200 purpurogallin units/mg. RZ value 2.0  
Used as a tracer for intercellular spaces and for pinocytosis.  
Used as a stainable antibody label for localisation of antigens by EM.

**Grade 1**  
P006 10mg

**Grade 11**  
P007 100mg  
P008 10mg

**Phospholipase C**

Store below -20°C Has been found to strip lanthanum staining material from cell surfaces.  
Lesseps, J. cell Biol., 34, 173 (1967)

P009 10mg

**Pronase**

Store @ 4°C (Streptomyces griseus) A wide spectrum proteolytic enzyme which has been used for the digestion of protein from ultrathin GMA or TAAB 812 resin sections.  
Activity 47000 PUK units/g.

P020 1g

**Ribonuclease 1**

Store -18°C (Bovine pancreas) 4 x cryst. Salt-free, specific digestive enzyme for RNA.  
Activity 40 Kunitz units/mg.

R001 500mg  
R002 100mg

**Trypsin**

Store @ 4°C (Beef pancreas) Salt-free, freeze dried powder from 1x cryst. Trypsin, Proteolytic enzyme.  
Activity not less than 2500 NF units/mg.

T020 1g

**Enzyme Activators****Cobalt Chloride**

C010 100g

**Magnesium Chloride EM**

M001 100g

**Manganese Chloride EM**

M004 100g

**Enzyme Substrates for EM Staining****s-Acetyl Coenzyme A**

Store below -20°C (Acetyl CoA) Used as a substrate for ultrastructural localisation of carnitine acetyltransferase.  
Higgins & Barnett, J. Cell Sci., 6, 29 (1970)

**Acetylthiocholine Iodine**

Store below -4°C Substrate for cholinesterase.  
Karnovsky, J. Cell Biol., 23, 217 (1964)  
Koelle & Gromadski, J. Histochem, Cytochem., 14, 443 (1966)  
Eranko et al., J. Histochem, Cytochem., 15, 674 (1967)  
Davis & Koelle, J. Cell Biol., 34, 157 (1967)

A004 5g  
A005 1g

**Adenosine-5'-Monophosphate**

Disodium salt, purity 98%. Substrate for 5'nucleotides.

A008 1g

**Adenosine-5'-Triphosphate**

Store below -20°C Disodium salt, purity 98%. Substrate for adenosine triphosphate.

A009 1g

**Butyrylthiocholine Iodine**

Substrate for cholinesterase

<b>B017</b>	<b>5g</b>
<b>B018</b>	<b>1g</b>

**Cytidine-5'-Monophosphate**Disodium salt, purity 100% approx.  
Substrate for acid phosphatase and 5'-nucleotidase.

<b>C018</b>	<b>1g</b>
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**Glucose-6'-Phosphate**

Store 4°C Disodium salt, purity 98%.  
Used for the EM localisation of glucose-6-phosphatases in glutaraldehyde fixed tissues.  
Tice & Barnett, J. Histochem. Cytochem., 10, 754 (1962)

<b>G007</b>	<b>1g</b>
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**Indoxyl Acetate**Used in an EM staining method in conjunction with pararosaniline HCl for esterase localisation.  
Holt & Hicks, J. Cell Biol., 29, 361 (1966)

<b>I002</b>	<b>5g</b>
<b>I003</b>	<b>1g</b>

**Inosine-5'-Diphosphate**

Store @4°C Disodium salt, purity 98% minimum. Substrate for inosine diphosphatase.

<b>I004</b>	<b>100mg</b>
<b>I005</b>	<b>25mg</b>

**Nitrocatechol Sulphate**Store @ 4°C Dipotassium salt. Used for the EM localisation of aryl sulphatase activity.  
Goldfischer, J. Histochem., 13, 520 (1965)

<b>N003</b>	<b>1g</b>
<b>N004</b>	<b>100mg</b>

**Nitrophenyl Sulphate**

Store 4°C Potassium salt, substrate for sulphatase.

<b>N005</b>	<b>1g</b>
<b>N006</b>	<b>100mg</b>

**Sodium Glutamate**

Substrate for glutamic dehydrogenase.

<b>S013</b>	<b>100g</b>
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**Sodium β Glycerophosphate EM**

Used for the EM localisation of acid and alkaline phosphatases. High purity with an alpha isomer content of less than 0.1%.

Essner &amp; Novikoff, J. Histochem. Cytochem., 8, 318 (1960)

Holt &amp; Hicks, J. Cell Biol., 11, 47 (1961)

Tranzer, J. Microscopie, 4, 409 (1965)

Hugon &amp; Borgers, J. Histochem. Cytochem., 14, 629 (1966)

<b>S014</b>	<b>100g</b>
<b>S015</b>	<b>50g</b>
<b>S016</b>	<b>25g</b>

**Sodium Hydrogen Maleate**

Substrate for malic dehydrogenase.

<b>S017</b>	<b>100g</b>
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**Sodium Succinate**Hexahydrate. Substrate for succinic dehydrogenase.  
Purity >99%

<b>S021</b>	<b>100g</b>
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**Thiamine Pyrophosphate Chloride**

Store @ 4°C    Cocarboxylase, for the EM demonstration of nucleoside phosphatases in the Golgi apparatus of cells. Purity 99%  
Novikoff & Goldfischer, Proc.Natn.Acad. Sci., 47, 802 (1961)

T007    5g

**Enzyme & Metabolic Inhibitors****p-Chloromercuribenzoic Acid**

C008    5g

**Cyclohexamide**

Inhibitor of protein synthesis at peptide elongation stage of translation.  
See Jamieson & Palade, J. Cell Biol., 39, 580 (1968) for use in studying transport of secretory proteins in pancreas.

C017    1g

**n-Ethylmaleimide**

E014    5g

**Iodoacetamide**

I006    10g

**Iodoacetic Acid**

I007    25g

**Mitomycin C**

Antitumour antibiotic which is believed to cross-link complementary strands of DNA. Produces changes in nucleolar fine structure in cultured cells similar to those caused by actinomycin-D.  
Lapis & Bernard, Cancer Res., 25, 628 (1965)

M009    2mg

**Puromycin**

Store @ 4°C    Rapidly inhibits protein synthesis by forming a complex with nascent protein at the ribosomal level. It has been used in studies of ACTH-induced ultrastructural transformation of mitochondria of rat adrenal cortex cells.  
Kahri, J. Cell Biol., 36, 181 (1968)

P022    10mg

**Sodium Azide**

S026    25g

**Sodium Fluoride**

S012    100g

**Acceptors for Oxidative Enzymes****DL-Carnitine HCl**

F.W. 197.66 Hygroscopic.

C006    25g

**3,3'-Diaminobenzidine tetra – HCl**

Used as acceptor in ultrastructural staining methods for localisation of peroxidase, catalase and other oxidases.  
Graham & Karnovsky, J. Histochem., 14, 291 (1965)  
Seligman et al., J. Cell Biol., 38, 1 (1968)  
Fahimi, J. Cell Biol., 43, 275 (1969)  
Novikoff & Goldfischer, J. Histochem, Cytochem., 17, 675 (1969)  
Beard & Novikoff, J. Cell Biol., 42, 501 (1969)  
Strum & Karnovsky, J. Cell Biol., 44, 655 (1970)  
Hanker & Romanovicz, Science 197, 895 (1977)  
Anderson, J. Histochem. Cytochem., 20, 672 (1972)

D008    5g

D009    1g



**3,3'-Diaminobenzidine tetra – HCl****Tablets**

Each tablet 10mg

Store -18°C

**D040 25 tablets****Nitro BT- EM grade**Nitro Blue Tetrazolium. M.W. 817.6  
A substrate for dehydrogenases and other peroxidases.

Store 0 to 4°C

**N002 250mg****Tablets**

Store 0 to 4°C Each tablet 10mg. Solubility (one tablet in 1ml of water)

**3,3',5,5'-Tetramethyl Benzidine** $C_{16}H_{20}N_2$  M.W. 240.35  
Reported to be a non-carcinogenic substitute for 3,3'-Diaminobenzidine HCl. Used as a sensitive and specific reagent for the detection of blood.  
J.Histochem. Cytochem., 26, 106 (1978)  
Boss, E.S., et al., Assay of peroxidases. J. of Immunoassay, 2, 187 (1981)  
Standefer & Vanderjagt. Assay of haemoglobin. Clin. Chem., 23, 749 (1977)**T215 5g**  
**T216 1g****Tetranitro BT- EM grade****T005 250mg**  
**T006 100mg****Azo-Dye Coupling Agents****p-Acetoxymercurianiline**p-Aminophenylmercuric acetate. When diazotised used as a coupling agent for both light and electron microscopic localization of B-glucuronidase and acid phosphatases.  
Smith & Fishman, J. Histochem. Cytochem., 17, 1 (1969)**A001 10g****Pararosaniline HCl EM**

When converted to its hexazonium derivative by nitrous acid as a coupling agent for ultrastructural localization of esterases.

Lehrer &amp; Ornstein, J. Biophys. Biochem. Cytol., 6, 399 (1959)

Holt &amp; Hicks, J. Cell Biol., 29, 361 (1966)

**P002 5g**  
**P003 1g****Markers for Cell Surface Studies and Intercellular Spaces****Concanavalin A**

Store @ 4°C

Used in conjunction with peroxidase for labelling X-D-glucosyl and sterically related residues at the cell surface.

Bernard &amp; Avrameas, Expl. Cell Res., 64, 232 (1971)

**C015 100mg****Cytochrome C**

Store -18°C

(horse heart) purity 95% approx.

A small molecular weight protein for use as an ultrastructural tracer. Also used in the Kleinschmidt technique for preparing isolated DNA molecules for electron microscopy.

Karnovsky &amp; Rice, J. Histochem. Cytochem., 17, 751 (1969)

Freifelder &amp; Kleinschmidt, J. Molec. Biol., 14, 271 (1965)

**C019 100mg**  
**C020 25mg****Ferritin, cadmium free, 6x cryst.**

Store 4°C

Used to label antigens for localisation of antibodies by EM. Also used as a marker for pinocytoses and transcellular transport. It has also been attached to membranes for freeze-etching studies.

Duc-Nguyen et al., Virology, 28, 404 (1966)

Sternberger, J. Histochem. Cytochem., 15, 139 (1967)

Levinthal et al., In. J. Cancer, 2, 85 (1967)

J. Exp. Med., 116, 423 (1962)

Danon et al., J. Ultrastruct. Res., 38, 500 (1972)

**Also used as a marker for pinocytosis and transcellular transport.**

Farquar &amp; Palade, J. Exp. Med., 114, 699 (1961)

Bruns &amp; Palade, J. cell biol., 37, 277 (1968)

Smith et al., J. Morph., 127, 41 (1969)

Clementi &amp; Palade, J. Cell Biol., 41, 33 (1969)

**For attaching to membranes for freeze-etching studies.**

De Silva &amp; Branton, J. Cell Biol., 45, 598 (1970)

**F002 100mg**

**TAAB Gold Probes**

Gold probes have, since their introduction in 1971, become widely used in both light and electron microscopy for the identification of proteins and antigens in cells and tissues. The technique has enjoyed enormous growth over the last few years with a vast growth in the number of applications in animal and plant biology and microbiology. In addition the sensitivity and specificity of the technique has established it as an important tool in immunoblotting for the study of proteins (Western blots) and DNA fragments (Southern blotting). Gold probes are stable, sensitive, non-hazardous, extremely economical and easy to use. TAAB gold conjugates may be stored for *12 months at 4°C or longer if frozen at -25°C or below* to give long term reproducible results. A pack of microtubes is available for customers wishing to aliquot and freeze their conjugates on delivery.

All our gold conjugated antibodies are affinity purified to ensure low cross reactivity. EM grade antibody conjugates have at least 85% singlets. Each product is provided with a quality assurance certificate indicating the sensitivity, concentration, exact particle size and coefficient of variation, and freedom from clustering.

**GOLD CONJUGATES****Choice of GOLD Conjugates:**

**Electron microscope (EM)** grade conjugates are available as proteins linked to 1, 5, 10, 15 and 20nm gold particles, with 30 and 40nm gold particles available for certain products, all non-overlapping and allowing multiple labelling to be achieved for several antigens on the same specimen. **Which Particle Size?** - at magnifications above 50,000x the 1, 5 and 10nm sizes are recommended. For lower magnifications, the 15, 20, 30 or 40nm sizes should be used. *Those users just beginning immunogold labelling are recommended to use 10nm particle size.* For 1nm and 5nm gold conjugates, a combination of gold labelling with silver enhancing will yield larger size particles with high labelling intensity.

**Light microscopy (LM)** grade conjugates are of 1nm and 5nm gold particles to provide maximum penetration into sections. In either case the particles are not immediately visible in the LM. This is because the resolution of the LM is >200nm. With silver enhancing (Silver Enhancing Kit) you can grow the particles within minutes to almost perfect spheres of a size large enough to be seen at high intensity in the LM. Gold particles are inert and will not change with time. Silver enhancing stains give a permanent intense brown/black signal.

All common counterstains may be used on tissues after labelling with gold conjugates. Enzyme based labels may be used in conjunction with gold labels for multiple staining of antigens on cells and tissue. **Which Particle Size?** – for most purposes 5nm gold conjugates are suitable. Where higher labelling intensity is required or where penetration through cell membranes is necessary the 1nm gold conjugate should be selected. The 1nm gold conjugate may be diluted much further for use compared with the 5nm gold conjugate. In both cases the Silver Enhancing Kit is used to increase the signal.

**Blotted Proteins (BL)** grade is provided as 1nm and 20nm particle sizes for optimum visibility and silver intensification. Blotting applications of gold conjugates include the demonstration of macromolecules, antigens, antibodies, and other proteins immobilised by a suitable negatively charged membrane such as nitrocellulose. **Which Particle Size?** – due to the high visibility of 20nm gold particles accumulating on the membrane, a strong signal is obtained after incubation without the immediate need for further silver enhancing. Nevertheless, silver enhancing of the gold stain will increase the sensitivity by 10 – 100x. For further sensitivity 1nm gold particles may be used. These conjugates produce a very high labelling intensity that is converted to an intense black stain with further silver enhancement.

**Protein A , Protein G or Protein A/G** conjugates offer the advantage of being universal secondary labelling reagents for most primary IgG antibodies. Individual gold labelled secondary antibodies, however, offer higher sensitivity through multiple binding to the primary antibody.

**Streptavidin or Goat anti-Biotin** conjugates have a very high affinity for biotin. They provide a sensitive and specific method for the detection of biotinylated primary antibodies, proteins or DNA in both microscopical and blotting applications. Goat anti-Biotin has been shown to be a rather more sensitive detector of biotin compared with streptavidin when conjugated to gold particles. This is because of the relatively large molecular size of the anti-biotin molecule (160,000 daltons) compared to streptavidin (40,000 daltons) and the distance between the binding site of the gold on the Fc from the binding region of the antibody F(ab').

**Cationic gold** allows highly sensitive and discrete microscopical studies of anionic (i.e. negative) sites in cells and tissues. The gold conjugate is made by careful conjugation to Poly-L-Lysine, a highly positive amino acid chain.

**When to use F(ab') fragments?** In some applications background labelling may be a problem due to the attraction of the Fc region of the antibody-gold conjugate to tissue components (called Fc receptors). Normally this is blocked by the simple application of normal serum prior to the first antibody. If the problem persists, however, then gold labelled F(ab') fragments of antibodies may be used.

**Lectin gold conjugates** Lectins are carbohydrate binding proteins of non immune origin which agglutinate cells and precipitate glycoconjugates.

**CODE:** (H) = Heavy Chain Specific (H+L) = Heavy + Light Chain Specific (AH) = Absorbed with Human Serum Proteins (Rat Abs) Absorbed against rat serum proteins (Mouse Abs) Absorbed against mouse serum proteins

### UNCONJUGATED COLLOIDAL GOLD

**TAAB Gold Colloids** are supplied ready for conjugation to proteins, antibodies, or many other types of macromolecule for binding and reaction labelling studies. They are shipped in sterile containers as 100ml or 500ml volumes. They are available as different particle sizes for EM, LM or Blotting applications. The colloids may be stored for *at least 12 months at 4°C* if left unopened. **Do not freeze.** Each colloid is provided with a quality control certificate.

#### Blocking Reagents

Non specific labelling can occur on specimens during immunolabelling procedures. The source of this background labelling must be determined by the careful and systematic use of controls and eliminated for the proper analysis of the specimen. Background labelling can occur from a number of sources, either in the specimen or in the incubating solutions. In either case the background can be substantially reduced by the careful use of blocking reagents.

## TAAB Gold Probes

## EM GOLD CONJUGATES

Product Code	Conjugated Protein	Gold Particle sizes( nm)	Size
GEM024	Goat anti-Rabbit IgG (H+L) (AH)	1,5,10,15,	0.25ml
GEM024/1		20,30 and 40	1ml
GEM025	Goat anti-Mouse IgG (H) (AH)	1,5,10,15	0.25ml
GEM025/1		,20 and 30	1ml
GEM031	Goat anti-Mouse IgM ( $\mu$ m chain specific)	1,5,10,15,	0.25ml
GEM031/1		20,30 and 40	1ml
GEM026	Goat anti-Mouse IgG+IgM (H+L) (AH)	1,5,10,15,	0.25ml
GEM026/1		20 and 30	1ml
GEM034	Goat anti-Mouse IgA	10	0.25ml
GEM034/1			1ml
GEM035	Goat anti-Mouse IgA+IgM+IgG (polyvalent)	10	0.25ml
GEM035/1			1ml
GEM036	Goat anti-Mouse IgG (Rat Abs)	1,5 and 10	0.25ml
GEM036/1			1ml
GEM027	Goat anti-Rat IgG (H+L) (AH)	1,5,10,15,	0.25ml
GEM027/1		20 and 30	1ml
GEM037	Goat anti-Rat IgG (H+L) (Mouse Abs)	1,5 and 10	0.25ml
GEM037/1			1ml
GEM028	Goat anti-Human IgG (gamma chain specific)	1,5,10,15	0.25ml
GEM028/1		and 20	1ml
GEM038	Goat anti-Human IgG (H+L)	1,5,10,15,	0.25ml
GEM038/1		20 and 40	1ml
GEM039	Goat anti-Human $\mu$ g ( $\mu$ m chain specific)	1,5 and 10	0.25ml
GEM039/1			1ml
GEM029	Goat anti-Guinea Pig IgG (H+L)	1,5,10,15	0.25ml
GEM029/1		and 20	1ml
GEM040	Rabbit anti-Chicken IgG (H+L)	1,5 and 10	0.25ml
GEM040/1			1ml
GEM041	Goat anti-Biotin	1,5,10,15	0.25ml
GEM041/1		and 20	1ml
GEM042	N.L.A.	1,5 and 10	0.25ml
GEM042/1			1ml
GEM030	Rabbit anti-Goat IgG (H+L)	1,5,10,15	0.25ml
GEM030/1		and 20	1ml
GEM043	Rabbit anti-Goat IgG (H+L) (HA)	1,5,10,15	0.25ml
GEM043/1		and 20	1ml
GEM032	Donkey anti-Sheep IgG (H+L)	5,10,15	0.25ml
GEM032/1		and 20	1ml
GEM044	No Longer Available	1,5 and 10	0.25ml
GEM044/1			1ml
GEM045	Goat anti-Fluoroscien	10	0.25ml
GEM045/1			1ml
GEM046	N.L.A.	10	0.25ml
GEM046/1			1ml
GEM020	Protein A	5,10,15	0.25ml
GEM020/1		and 20	1ml
GEM021	Protein G	5,10,15	0.25ml
GEM021/1		and 20	1ml
GEM047	Protein A/G	10,15 & 20	0.25ml
GEM047/1			1ml

Product Code	Conjugated Protein	Gold Particle sizes( nm)	Size
GEM022	Streptavidin	1,5,10,15,	0.25ml
GEM022/1		and 20	1ml
GEM023	Cationic Colloidal Gold (poly-L-lysine)	5,10,15	0.25ml
GEM023/1		and 20	1ml
GEM048	N.L.A.	1,5 and 10	0.25ml
GEM048/1			1ml
GEM049	N.L.A.	1,5 and 10	0.25ml
GEM049/1			1ml
GEM050	N.L.A.	1,5 and 10	0.25ml
GEM050/1			1ml
GEM033	Bovine Serum Albumin (negative control)	1,5,10,15	0.25ml
GEM033/1		and 20	1ml

ELECTRON MICROSCOPE GOLD CONJUGATES of F(ab')<sub>2</sub> Fragments

GEM051	Goat F(ab') <sub>2</sub> anti-Rabbit IgG (H+L) (HA)	1,5 and 10	0.25ml
GEM051/1			1ml
GEM052	Goat F(ab') <sub>2</sub> anti-Mouse IgG (H) (HA)	1,5 and 10	0.25ml
GEM052/1			1ml
GEM053	Goat F(ab') <sub>2</sub> anti-Mouse IgM ( $\mu$ m chain specific)	1,5 and 10	0.25ml
GEM053/1			1ml
GEM054	Goat F(ab') <sub>2</sub> anti-Mouse IgG + IgM (H+L) (HA)	1,5 and 10	0.25ml
GEM054/1			1ml

## LIGHT MICROSCOPE GOLD CONJUGATES

GLM024	Goat anti-Rabbit IgG (H+L) (AH)	1 and 5	0.25ml
GLM024/1			1ml
GLM025	Goat anti-Mouse IgG (H) (AH)	1 and 5	0.25ml
GLM025/1			1ml
GLM031	Goat anti-Mouse IgM ( $\mu$ m chain specific)	1 and 5	0.25ml
GLM031/1			1ml
GLM026	Goat anti-Mouse IgG+IgM (H+L) (AH)	1 and 5	0.25ml
GLM026/1			1ml
GLM034	Goat anti-Mouse IgG (Rat Abs)	1 and 5	0.25ml
GLM034/1			1ml
GLM035	Goat anti-Mouse IgG (H+L) (HA)	1 and 5	0.25ml
GLM035/1			1ml
GLM036	Goat anti-Mouse IgG (Rat Abs)	1 and 5	0.25ml
GLM036/1			1ml
GLM027	Goat anti-Rat IgG (H+L) (AH)	1 and 5	0.25ml
GLM027/1			1ml
GLM037	Goat anti-Rat IgG (H+L) (Mouse Abs)	1,5 and 10	0.25ml
GLM037/1			1ml
GLM028	Goat anti-Human IgG (gamma chain specific)	1 and 5	0.25ml
GLM028/1			1ml
GLM038	Goat anti-Human IgG (H+L)	1 and 5	0.25ml
GLM038/1			1ml
GLM039	Goat anti-Human IgG ( $\mu$ m chain specific)	1 and 5	0.25ml
GLM039/1			1ml
GLM029	Goat anti-Guinea Pig IgG (H+L)	1 and 5	0.25ml
GLM029/1			1ml

## LM GOLD CONJUGATES CONTINUED

Product Code	Conjugated Protein	Gold Particle sizes( nm)	Size
GLM040	Rabbit anti-Chicken IgG (H+L)	1 and 5	0.25ml
GLM040/1			1ml
GLM041	Goat anti-Biotin	1 and 5	0.25ml
GLM041/1			1ml
GLM042	N.L.A.	1 and 5	0.25ml
GLM042/1			1ml
GLM030	Rabbit anti-Goat IgG (H+L)	1 and 5	0.25ml
GLM030/1			1ml
GLM043	Rabbit anti-Goat IgG (H+L) (HA)	1 and 5	0.25ml
GLM043/1			1ml
GLM032	Donkey anti-Sheep IgG (H+L)	1 and 5	0.25ml
GLM032/1			1ml
GLM044	No Longer Available	5	0.25ml
GLM044/1			1ml
GLM020	Protein A	5	0.25ml
GLM020/1			1ml
GLM021	Protein G	1 and 5	0.25ml
GLM021/1			1ml
GLM047	Protein A/G	5	0.25ml
GLM047/1			1ml
GLM022	Streptavidin	1 and 5	0.25ml
GLM022/1			1ml
GLM023	Cationic Colloidal Gold (poly-L-lysine)	5	0.25ml
GLM023/1			1ml
GLM048	N.L.A.	1 and 5	0.25ml
GLM048/1			1ml
GLM049	N.L.A.	1 and 5	0.25ml
GLM049/1			1ml
GLM050	N.L.A.	1 and 5	0.25ml
GLM050/1			1ml
GLM033	Bovine Serum Albumin (negative control)	1 and 5	0.25ml
GLM033/1			1ml

## LIGHT MICROSCOPE GOLD CONJUGATES of F(ab')<sub>2</sub> Fragments

GLM051	Goat F(ab') <sub>2</sub> anti-Rabbit IgG (H+L) (HA)	1,5 and 10	0.25ml
GLM051/1			1ml
GLM052	Goat F(ab') <sub>2</sub> anti-Mouse IgG (H) (HA)	1,5 and 10	0.25ml
GLM052/1			1ml
GLM053	Goat F(ab') <sub>2</sub> anti-Mouse IgM (µm chain specific)	1,5 and 10	0.25ml
GLM053/1			1ml
GLM054	Goat F(ab') <sub>2</sub> anti-Mouse IgG + IgM (H+L) (HA)	1,5 and 10	0.25ml
GLM054/1			1ml

## GOLD CONJUGATES FOR BLOTTING PROTEINS

GBL024	Goat anti-Rabbit IgG (H+L) (AH)	1 and 20	0.25ml
GBL024/1			1ml
GBL025	Goat anti-Mouse IgG (H) (AH)	1 and 20	0.25ml
GBL025/1			1ml
GBL031	Goat anti-Mouse IgM (µm chain specific)	1 and 20	0.25ml
GBL031/1			1ml
GBL026	Goat anti-Mouse IgG+IgM (H+L) (AH)	1 and 20	0.25ml
GBL026/1			1ml

Product Code	Conjugated Protein	Gold Particle sizes( nm)	Size
GBL035	Goat anti-Mouse IgG (H+L) (HA))	1	0.25ml
GBL035/1			1ml
GBL036	Goat anti-Mouse IgG (Rat Abs)	1	0.25ml
GBL036/1			1ml
GBL027	Goat anti-Rat IgG (H+L) (AH)	1 and 20	0.25ml
GBL027/1			1ml
GBL037	Goat anti-Rat IgG (H+L) (Mouse Abs)	1	0.25ml
GBL037/1			1ml
GBL028	Goat anti-Human IgG (gamma chain specific)	1 and 20	0.25ml
GBL028/1			1ml
GBL038	Goat anti-Human IgG (H+L)	1	0.25ml
GBL038/1			1ml
GBL039	Goat anti-Human IgG (µm chain specific)	1	0.25ml
GBL039/1			1ml
GBL029	Goat anti-Guinea Pig IgG (H+L)	1 and 20	0.25ml
GBL029/1			1ml
GBL040	Rabbit anti-Chicken IgG (H+L)	1	0.25ml
GBL040/1			1ml
GBL041	Goat anti-Biotin	1 and 20	0.25ml
GBL041/1			1ml
GBL042	N.L.A.	1 and 20	0.25ml
GBL042/1			1ml
GBL030	Rabbit anti-Goat IgG (H+L)	1 and 20	0.25ml
GBL030/1			1ml
GBL043	Rabbit anti-Goat IgG (H+L) (HA)	1	0.25ml
GBL043/1			1ml
GBL032	Donkey anti-Sheep IgG (H+L)	1 and 20	0.25ml
GBL032/1			1ml
GBL044	No Longer Available	1	0.25ml
GBL044/1			1ml
GBL020	Protein A	20	0.25ml
GBL020/1			1ml
GBL021	Protein G	20	0.25ml
GBL021/1			1ml
GBL047	Protein A/G	20	0.25ml
GBL047/1			1ml
GBL022	Streptavidin	1 and 20	0.25ml
GBL022/1			1ml
GBL023	Cationic Colloidal Gold (poly-L-lysine)	20	0.25ml
GBL023/1			1ml
GBL048	Concanavalin A	1	0.25ml
GBL048/1			1ml
GBL049	Wheat Germ Agglutinin	1	0.25ml
GBL049/1			1ml
GBL050	Peanut Agglutinin	1	0.25ml
GBL050/1			1ml
GBL033	Bovine Serum Albumin (negative control)	1 and 20	0.25ml
GBL033/1			1ml

Gold conjugates for **blotting** with 20nm Gold particle size are also available in **2ml** quantity

## UNCONJUGATED COLLOIDAL GOLD

Product Code	Gold Particle size (nm)	Particle Size Distribution (%CV)	Particles per ml	Size
G019-2	2		15 x 10 <sup>13</sup>	100ml
G019-2/1				500ml
G019-5	5	<15%	5.0 x 10 <sup>13</sup>	100ml
G019-5/1				500ml
G019-10	10	<10%	5.7 x 10 <sup>12</sup>	100ml
G019-10/1				500ml
G019-15	15	<10%	1.4 x 10 <sup>12</sup>	100ml
G019-15/1				500ml
G019-20	20	<15%	7.0 x 10 <sup>11</sup>	100ml
G019-20/1				500ml
G019-30	30	<20%	2.0 x 10 <sup>11</sup>	100ml
G019-30/1				500ml
G019-40	40	<20%	9.0 x 10 <sup>10</sup>	100ml
G019-40/1				500ml

Product Code	Gold Particle size (nm)	Particle Size Distribution (%CV)	Particles per ml	Size
G019-50	50	<20%	4.5 x 10 <sup>10</sup>	100ml
G019-50/1				500ml
G019-60	60	<20%	2.6 x 10 <sup>10</sup>	100ml
G019-60/1				500ml
G019-80	80	<20%	1.1 x 10 <sup>10</sup>	100ml
G019-80/1				500ml
G019-100	100	<20%	5.6 x 10 <sup>9</sup>	100ml
G019-100/1				500ml
G019-150	150	<20%	1.7 x 10 <sup>9</sup>	100ml
G019-150/1				500ml
G019-200	200	<20%	7.0 x 10 <sup>8</sup>	100ml
G019-200/1				500ml
G019-250	250	<20%	3.6 x 10 <sup>8</sup>	100ml
G019-250/1				500ml

## LECTIN GOLD CONJUGATES

Product Code	Conjugated Protein	Sugar Specificity	Molecular Weight	Gold Particle sizes (nm)	Size
GEM048	No Longer Available	$\alpha$ -D-Mannose	102,000	1, 5 and 10	0.25ml
GEM048/1	N.L.A.	$\alpha$ -D-Glucose			1ml
GEM049	No Longer Available	N-acetyl-glucosamine	36,000	1, 5 and 10	0.25ml
GEM049/1	N.L.A.				1ml
GEM050	No Longer Available	Galactosyl ( $\beta$ -1,3) N-acetylgalactosamine	110,000	1, 5 and 10	0.25ml
GEM050/1	N.L.A.				1ml

GLM048	No Longer Available	$\alpha$ -D-Mannose	102,000	5	0.25ml
GLM048/1	N.L.A.	$\alpha$ -D-Glucose			1ml
GLM049	No Longer Available	N-acetyl-glucosamine	36,000	5	0.25ml
GLM049/1	N.L.A.				1ml
GLM050	No Longer Available	Galactosyl ( $\beta$ -1,3) N-acetylgalactosamine	110,000	5	0.25ml
GLM050/1	N.L.A.				1ml

## BLOCKING REAGENTS

Product Code	Description	Size
B040	Tween 20	10ml
B042	Gelatin (Fish) 45%	10ml
B044	N.L.A.	5ml
B046	N.L.A.	5ml
B049	N.L.A.	10g

Product Code	Description	Size
B041	Bovine Serum Albumin (Fatty acid free)	10g
B043	N.L.A.	5ml
B045	N.L.A.	2ml
B047	N.L.A.	5ml
B048	Fetal Calf serum*	5ml

\* Contains 0.1% sodium azide as preservative.

Tween 20 is a registered trade mark of Atlas Chemicals Industries

## Silver Enhancing Kits

LM/EM Silver enhancing Kit 2 x 25ml >300 reactions

**S455 1 kit**

BL Silver Enhancing Kit 2 x 250ml, number of reactions 20-30 blots

**S456 1 kit**

**S457 Additional Test strips pack 10**

## Protogold Kit

**G046 500ml**

## Genogold Kit

**G201 500ml**

**General Chemicals**

**Acetic Acid (Glacial)**



CH<sub>3</sub>COOH M.W. 60.05 Assay < 99.8%

**A026 1ltr**

**n, Acetyl-L-Cysteine**

Mucolytic agent used in studies of cell surface coats  
Ito, J. Cell Biol., 27, 475 (1965)  
Kelly, J. Cell Biol., 28, 51 (1966)

**A003 10g**

**Acetyl Thiocholine Iodide**

See Enzyme substrate section

**Activated Charcoal**



**C047 500g**



**Aluminium Potassium Sulphate**

M.W.474.38

**A027 1Kg**

**Ammonium Tartrate**

M.W. 184.15

**A028 100g**

**Calcium Chloride Granular**



**C036 500g**

**Celloidin**



Moistened with 35% Ethanol

**C049 100g**

**Cellosolve**



(2-Ethoxyethanol) C<sub>4</sub>H<sub>10</sub>O<sub>2</sub> M.W. 90.12

**C048 250ml**

**Chromium Trioxide EM**



Used after periodic acid oxidation and followed by silver methenamine for the detection of complex carbohydrates in cisternae of the Golgi Apparatus.  
Rambourg et al., J. Cell Biol., 40, 395 (1969)  
Also a component of chrome osmium fixatives.  
Dalton, Anat. Rec., 121, 281 (1955)



**C009 100g**

**Cupric Sulphate EM**



**C016 100g**

**Deuterium Oxide ( heavy water)**

Tilney, Devl. Biol., 2(suppl.) 63 (1968)  
Burgess & Northcote, J. Cell Sci., 5, 433 (1969)

**D006 10g**

**4,4'-Difluoro-3,3'-Dinitrodiphenylsulphone**

Bifunctional reagent used to prepare ferritin or peroxidase labelled anti-bodies for the localisation of antigens by EM.

D016 1g

**Digitonin**

$C_{56}H_{92}O_{29}$  M.W. 1229.34  
Used in aldehyde fixatives to retain cholesterol in tissues embedded for EM  
Scallen & Dietert, J. Cell Biol., 40, 802 (1969)  
Temkin R.J. Microscopy Res. & Tech., 26, 260-271 (1993)

D017 1g

**p-Dimethylaminobenzaldehyde**

$C_9H_{11}NO$  M.W. 149.2

D039 50g

**EDTA disodium salt EM**

Ethylenediamine tetraacetic Acid.  
 $Na_2C_{10}H_{14}N_2O_8 \cdot 2H_2O$  M.W. 372.20

*Used in the decalcification of tissue for EM.*

Warshawsky & Moore, J. Histochem. Cytochem., 15, 542 (1967)

*Used as an agent affecting capillary permeability.*

Clementi & Palade, J. Cell Biol., 42, 706 (1969)

*Used in the preparation of isolated liver parenchymal cells.*

Berry & Friend, J. Cell Biol., 43, 506 (1969)

*Used in selective staining method for ribonucleoproteins.*

Bernard, J. Ultrastruct. Res., 27, 250 (1969)

Monneron & Bernard, J. Ultrastruct. Res., 27, 266 (1969)

E001 100g

**D-Glucose EM**

Anhydrous

G009 500g

**Gold Chloride – Brown**

G200 1g

**Gold Chloride- Yellow**

Sodium Tetrachloroaurate. M.W. 397.80

G049 1g

**Hexamine**

(Hexamethylenetetramine) see **M006** Methenamine in EM stain section- page C26

**Hydrogen Peroxide 30% - EM**

100 volumes. M.W. 34.01



H006 100ml

**Hydroquinone**

$C_6H_6O_2$  M.W. 110.11 Assay >99%

H037 100g

**Lead Acetate EM**

See EM stain section

**Lead Nitrate EM**

See EM stain section

**Mercuric Chloride EM**

M005 100g

**Molecular Sieve Type 3A**

Type 3A molecular sieves should be used to dry dehydration solvents for electron microscopy. Most common solvents (acetone, ethanol, methanol, etc.) need to be anhydrous for electron microscopy embedding work using epoxy resins, yet they have a tendency to pick up atmospheric water when bottles are opened. It is highly recommended that all dehydrating solvent bottles are topped up after use to minimise the air volume above the liquid.

M032 Molecular sieve type 3A 500g  
M032/1 Molecular sieve type 3A 1Kg



## Paraldehyde



$C_6H_{12}O_3$  M.W. 132.16

**P037** 5 x 5ml

## Periodic Acid



ACS, Crystallised: >99.5%

**P039** 100g



## Periodic Acid 50%- EM



$H_5IO_6$  M.W. 227.96

Mowry, R.W. J. Histochem. Cytochem., 7, 288 (1959)

Ainsworth, S.K. et al., J. Histochem. Cytochem., 20, 995 (1972)

Derenzini et al., J. Histochem. Cytochem., 34, 1161 (1986)

Tsuchiya & Ogawa, J. Electr. Microsc. 22, 290 (1973)

**P005** 25ml

## Phenol



$C_6H_5OH$  M.W. 94.11

**P038** 100g

## Phosphorous Pentoxide granular



A mixture of phosphorous pentoxide and inert carrier material specially prepared for use in desiccators. The material remains free flowing after absorbing its own weight in water.

*Without indicator*

**P027** 500ml

*With indicator*

**P028** 500ml

## Picric Acid



Moistened with water ~40%.  $C_6H_3N_3O_7$  M.W. 229.11

**P036** 25g



## Potassium Chloride

KCL M.W. 74.55

**P035** 500g

## Potassium Ferricyanide EM

$K_3Fe(CN)_6 \cdot 3H_2O$  M.W. 329.25

Used in cytochemical staining procedures for the ultrastructure localisation of cholinesterase and of various dehydrogenases.

**P018** 100g

## Potassium Metabisulphite



(di-Potassium disulphite)  $K_2S_2O_5$  M.W. 222.31

**P034** 500g



Reagent for the ultrastructural localisation of sodium. M.W. 507.78

Zadunaisky, J. Cell Biol., 31, C11 (1966)

Kaye et al., J. Cell Biol., 30, 237 (1966)

Spicer et al., J. Cell Biol., 39, 216 (1968)

Lane & Martin, J. Histochem. Cytochem., 17, 102 (1969)

Tandler et al., J. Cell Biol., 45, 355 (1970)

J.Histochem. Cytochem., 24, 740 (1976)

**P017** 100g

## RDC Rapid Decalcifier



For use with human and animal calcified tissue, bone, cartilage and other hard specimens. Protects cellular structure with minimal interference with subsequent staining.

**D037** 1ltr

**Silica Gel**

Self indicating supplied as 6-20 mesh.

**S041 500g**

Self indicating coarse

**S042 500g****Silica Gel in sachets**

Small 5 gram sachets filled with free flowing self indicating grade silica gel.

**S045 100 sachets****Sodium Hydroxide - pearl**

NaOH M.W. 40.00

**S459 250g****Sodium Metaperiodate**NaIO<sub>4</sub> M.W. 213.89**S461 25g****Sodium Methoxide**CH<sub>3</sub>ONa M.W. 54.02 Assay > 95%**S465 100g****Sodium Nitrate EM****S018 500g****Sodium Sulphite**Na<sub>2</sub>SO<sub>3</sub> M.W. 126.04**S462 500g****Sodium Tetraphenyl Boron**

Used for dissociation of tissue into single cells.  
 Rappaport & Howze, Proc. Soc. Exp. Biol. Med.,  
 121, 1010 (1966)  
 Mills & Zucker-Franklin, Amer. J. Path., 54, 147  
 (1969)

**S022 1g****Sucrose EM****S025 500g****Thiocarbohydrazide EM**

See EM staining section.

**Thiosemicarbazide EM**

See EM staining section.

**Thionin**

M.W. 287.34

**T256 5g**

## Thymol



C10H14O M.W. 150.22

**T257 100g**

## Toluene-2,4-Diisocyanate



Reagent for cross-linking ferritin to antibodies.  
Singer & Schick, J. Biophys. Biochem. Cytol., 9, 519 (1961)  
Schick & Singer, J. Biol. Chem., 236, 2477 (1961)

**T012 100ml**

## Triethyl Phosphate



(C<sub>2</sub>H<sub>5</sub>O)<sub>3</sub>P(O) M.W. 182.16 Assay >99%

**T258 25g**

## Triton X-100



**T019 500g**

## Uranyl Nitrate EM



Said to prevent polymerisation damage during embedding in methacrylates. Also used as a negative stain.

This product is subject to shipping regulations and **may not** be available for overseas destinations.

Ward, J. Appl. Phys., 30, 2039 (1959)

Pease, Histological Tech. For EM 2<sup>nd</sup> ed., Academic Press, New York p105 (1964)

Valentine & Home in the Interpretation of Ultrastruc., Academic Press, New York p203 (1962)

**U004 25g**

## Surfactant & Dispersing Agents

### Decon 90™



General purpose surfactant especially suitable for biological and radioactive work. Decon 90 is biodegradable.

**C209 5ltr**

### Decon Neutracon



A near neutral cleaning concentrate. A phosphate free biodegradable neutral laboratory equipment cleaner, ideal for cleaning alkali sensitive materials such as aluminium

**C215 5ltr**

### RBS25



Surfactant and cleaning agent.

**R005 5Kg**  
**R006 1Kg**

### RBS50



A non foaming surfactant and cleaning agent.

**R012 1Kg**

### Tween™ 80

Polyoxyethylene sorbitanmonooleate

**T260 100ml**