Standard Resin Kits

Clear Casting Resin C

An unsaturated polyester resin in styrene monomer. Ideal for clear casting og 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 (benzyldimethylamine) 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 No.9

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. Biophy. 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 de-activate 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

Phone: +44 (0) 118 981 7775 Fax: +44 (0) 118 981 7881 E-mail: sales@taab.co.uk

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^{0}C while the HM20 is non-polar (hydrophobic) and can be used down to –70^{0}C.

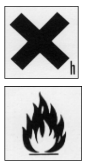
Lowicryl's K11M and HM23 have properties similar to K4M and HM20 but allow for use at 20^{0}C lower temperatures (K4M –50^{0}C & HM23 –80^{0}C). All these resins are photopolymerised by indirect long wavelength (360nm) ultraviolet light.. Chemical polymerisation is also possible at 60^{0}C.All Lowicryl media exhibit low viscosity at temperatures as low as –35^{0}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

Data sheet No. 5

Lowicryl HM20 Kit – Non Polar

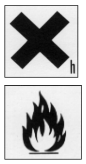
L008
Consists; 3 x 250g Monomer B
1 x 100g Crosslinker A
1 x 5g Initiator C

Lowicryl K4M Kit – Polar



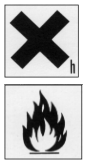
L007
Consists: 3 x 250g Monomer B
1 x 100g Crosslinker A
1 x 5g Initiator C

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

Data sheet No. 37

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. 11th 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

Phone: +44 (0) 118 981 7775 Fax: +44 (0) 118 981 7881 E-mail: sales@taab.co.uk

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^{0}C. The resin can be polymerised by heat at 50 – 60^{0}C or by UV irradiation at low temperatures of –10 to –20^{0}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.
Haematoxilin, Light Green, Safranin, Silver methenamine, Eosin and

TAAB Low Viscosity Resin (TLV)
The Replacement for Spurr

This resin replaces Spurr, as ERL4206and 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 x100g 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^{0}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

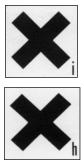
L031 - Water replacement using Monomer A

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

Data sheet No. 79

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

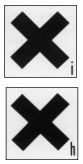
T024/1

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

Data sheet No.12

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

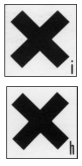
Contents: 5 x 100g TAAB Embedding resin
4 x 100g DDSA EM
2 x 100g MNA
1 x 50g BDMA

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

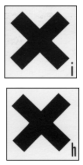


T043

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

Data sheet No. 20

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

Data sheet No. 20

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 immunoreative 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

Phone: +44 (0) 118 981 7775 Fax: +44 (0) 118 981 7881 E-mail: sales@taab.co.uk