



Your complete guide to cold enamelling



CHEMSET®

Welcome to Bright Enamels....

....and welcome to the world of colour! CHEMSET® products, as well as being manufactured in Kent, England are top quality epoxy resins. The business started in 1969 when we supplied the 'Rag Trade' in London cold enamel for matching buttons to fabric. The system was developed by our M.D. Mr Bright and our first order was for 1 pint! The business blossomed from there with competitors coming and going along the way. We are however constantly striding forwards, investing, developing and setting the standard.

These products can be used to decorate the surface of metal, glass, ceramic and many other materials for use in jewellery, model making and lots of other products.

The enamel consists of 2 main parts; a resin and a hardener, to this colour effects may be added.

There are two different types of resin and hardener and they must be used in the correct combination. The mixing ratio remains the same for the different types, this is 2 parts resin to 1 part hardener by weight.

“Type A resin must be used with Type A hardener.”

“Type B resin must be used with Type B hardener.”

Mixing ratio:
2 : 1
Resin :
Hardener by
weight



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The different resins

There are several different resins, each make up enamels with different characteristics. Here is a quick guide to help you decide which to use. For more detailed information on the resin, please go to it's dedicated page.

Resin Type	Hardener Type
Standard Resin CHEMSET® ES 8102 Clear and forms a hard, scratch resistant surface.	Type B CHEMSET® ES 8203
Opaque Colour Pastes These can be used with the standard, low viscosity, flexible, hard and hobby resins.	
Fluorescent Colour Pastes These can also be used with the standard, low viscosity, flexible, hard and hobby resins.	
Transparent Resins These can be diluted with the Low Viscosity Resin	Type A CHEMSET® ES 8204
Sparkle Resins	Type A CHEMSET® ES 8204
Metallic and Pearl Resins	Type A CHEMSET® ES 8204
Glow-in-the-Dark Resins	Type A CHEMSET® ES 8204

Resin Type	Hardener Type
<p>Thixotropic Resin CHEMSET® ES 8124 For enamelling on curved surfaces</p>	<p>Type A CHEMSET® ES 8204</p>
<p>Low Viscosity Resin CHEMSET® ES 8103 For enamelling large areas.</p>	<p>Type A CHEMSET® ES 8204</p>
<p>Hard Resin CHEMSET® ES 8106 Easier to cut back for a perfectly flat finish</p>	<p>Type B CHEMSET® ES 8203</p>
<p>Superglaze Resin CHEMSET® ES 8110 An extra bright clear resin for enamelling over mainly white backgrounds</p>	<p>Type A CHEMSET® ES 8204</p>
<p>Intense Black Resin CHEMSET® ES 8510</p>	<p>Type B CHEMSET® ES 8203</p>
<p>Intense White Resin CHEMSET® ES 8511</p>	<p>Type B CHEMSET® ES 8203</p>
<p>Flexible Resin CHEMSET® ES 8115</p>	<p>Type B CHEMSET® ES 8203</p>
<p>Hobby Resin CHEMSET® EZ 7401</p>	<p>Type B CHEMSET® ES 8203</p>

Important Information

Always stand the plastic cups containing the mixed enamel on a protective surface, preferably metal. This is because the enamel begins to set about 45 minutes after mixing and during this time a chemical reaction is occurring which may generate a lot of heat that can melt the cup and damage your working surface.



Before you start

to mix you will need to prepare your working area by protecting the surface with disposable sheets and have other cleaning things ready to use during your enamelling.

Be careful of your work area and clothes when using the enamels as they will be difficult to clean if they come in contact. After you pour from the cans you should wipe any drips with a rag as a build up of these drips will prevent the lid from going back on.

The enamel and its components are irritants so protect your hands with Travabon Special Cream which will stop the enamel from sticking to your hands. Always wash your hands (and any other areas of skin that come in contact with the product) thoroughly with soap, do not use solvents or thinners.

What you need

Scales - Very important, the easiest way to mix the enamel to ensure the best results.

Mixing cups - Best to use plastic disposable cups. They can be re-used then thrown away when they get too messy.

Mixing sticks - Wooden lollipop sticks work best. It is better to mix the enamel with a broad blade than a thin stick.

How to mix

1. Place the cup on the scales.
Re-zero the scales.
2. Pour the amount of resin you want into the cup (may include colour paste).
3. Pour the hardener into the cup.
4. Stir carefully until fully mixed.
5. Apply enamel to the surface.



Standard Resin (CHEMSET® ES 8102)

This is a clear, liquid resin and is our best seller. It is more colour-stable and domes very well because of its thicker nature. It can be used to enamel over patterned, printed and other types of surface.



“Type B Resin for use with Type B Hardener”

Mixing ratio is 2 parts resin : 1 part hardener by weight

It can be used as a resin to embed objects and/or be used with the silicon mould to create 3D shapes. It can also be used to magnify if it is domed over text or images.

Resin	Hardener	Enamel
1g +	0.5g	= 1.5g
2g +	1g	= 3g
3g +	1.5g	= 4.5g
10g +	5g	= 15g
20g +	10g	= 30g
30g +	15g	= 45g

Opaque Colour Pastes

The pastes are not resin, they can be added to any resin mixture but must not exceed 5% of the total resin weight. The Opaque Colour Pastes can be used in this mixing ratio with both Type A and Type B resins and hardeners except Superglaze, Intense Black and Intense White.

Resin	Colour Paste	Hardener	Enamel
1.9g	0.1g	1g	3g
3.8g	0.2g	2g	6g
9.5g	0.5g	5g	15g
19g	1g	10g	30g

Colours Available:

Grey	CHEMSET® EP4010
White	CHEMSET® EP4011
Yellow	CHEMSET® EP4012
Ochre	CHEMSET® EP4013
Red Oxide	CHEMSET® EP4014
Red	CHEMSET® EP4015
Green	CHEMSET® EP4017
Blue	CHEMSET® EP4018
Black	CHEMSET® EP4019
Green GG	CHEMSET® EP4020
Navy Blue	CHEMSET® EP4021
Pink E	CHEMSET® EP4022
Red-Violet	CHEMSET® EP4023
Regalia Blue	CHEMSET® EP4024
Yellow 04	CHEMSET® EP4025
Brown	CHEMSET® EP4026

“The paste should not exceed 5% of the overall resin weight”



Fluorescent Colour Pastes

These pastes are not resin; they are similar to the opaque colour pastes but are added to the resin in a slightly different way.

You can add up to 10% of the fluorescent colour paste to the resin but when calculating the 10% you can include the hardener weight as well. Can be used with both Type A and Type B Resins and Hardeners.

These colours 'glow' under a 'black' (UV) light and are best applied over a white background.



Resin	Hardener	Colour Paste	Enamel
2g +	1g +	0.3g	= 3.3g
4g +	2g +	0.6g	= 6.6g
10g +	5g +	1.5g	= 16.5g
20g +	10g +	3g	= 33g

Colours Available:

Yellow CHEMSET® EP4101

Red CHEMSET® EP4102

Green CHEMSET® EP4103

Blue CHEMSET® EP4104

Orange CHEMSET® EP4105

Pink CHEMSET® EP4106

Transparent Resins

The Transparent Resins are to be used with the Type A hardener (CHEMSET® ES 8204). If a less intense colour is needed it can be diluted with the Low Viscosity Resin (CHEMSET® ES 8103) and can also be used to add colour to the Thixotropic Resin (CHEMSET® ES 8124).



The Transparent Resin looks best when the light can shine through it. By creating an outside edge and sticking it to acetate, it can be filled with the enamel. The dried enamel will peel off the acetate and stick to the metal edge allowing the light to shine through the enamel.

“Type A Resin for use with Type A Hardener”

Mixing ratio is 2 parts resin : 1 part hardener by weight



Colours Available:

Yellow	CHEMSET® ES8552
Brown	CHEMSET® ES8553
Red	CHEMSET® ES8555
Green	CHEMSET® ES8557
Blue	CHEMSET® ES8558
Black	CHEMSET® ES8559
Orange	CHEMSET® ES8560
Violet	CHEMSET® ES8561
Pink	CHEMSET® ES8562

Sparkle Resins

The sparkles are suspended randomly in the resin so will keep a consistent glitter effect and will not sink to the bottom or float to the top. These resins need to be mixed with the hardener only, they should not be diluted as this will affect the sparkle.



“Type A Resin for use with Type A Hardener”

Resin	Hardener	Enamel
1g +	0.5g	= 1.5g
2g +	1g	= 3g
3g +	1.5g	= 4.5g
10g +	5g	= 15g
20g +	10g	= 30g
30g +	15g	= 45g



Colours Available:

Neutral	CHEMSET® ES8570
Yellow	CHEMSET® ES8571
Red	CHEMSET® ES8572
Green	CHEMSET® ES8573
Blue	CHEMSET® ES8574
Pink	CHEMSET® ES8575
Orange	CHEMSET® ES8576
Brown	CHEMSET® ES8578
Lilac	CHEMSET® ES8562
Turquoise	CHEMSET® ES8581

Metallic and Pearl Resins

The special pearl effect is suspended in the resin allowing you to create your own pearly waves on the surface. By using a pin or paperclip, make swirls and lines to create your unique pearl effect. These can not be diluted as it will affect the pearl and metallic particles.

The Satin White Pearl Resin (CHEMSET® ES 8541) can be tinted with a small amount of the transparent colour resins to create your own pearl colour.

“Type A Resin for use with Type A Hardener”

Resin	Hardener	Enamel
1g +	0.5g	= 1.5g
2g +	1g	= 3g
3g +	1.5g	= 4.5g
10g +	5g	= 15g
20g +	10g	= 30g
30g +	15g	= 45g

Colours Available:

Silver Glitter	CHEMSET® ES8540
Satin White Pearl	CHEMSET® ES8541
Gold Pearl	CHEMSET® ES8542
Copper Pearl	CHEMSET® ES8543
Bronze Pearl	CHEMSET® ES8544
Manganese Pearl	CHEMSET® ES8545
Pink Pearl	CHEMSET® ES8546
Black Olive Pearl	CHEMSET® ES8547



Glow-in-the-Dark Resins

The Glow-in-the-Dark resins contain particles of pigment which do not dissolve in the resin but are held in suspension. These particles absorb light and emit it again. They need a good exposure to light to take on a good charge.

These 'colours' all look white in their jars but you can add a few drops of transparent, opaque or fluorescent colour to the Glow-in-the-Dark resins to give them colour for daytime use. Do not add too much colour as this will affect the absorption of light.

"Type A Resin for use with Type A Hardener"

*Mixing ratio is 2 parts resin :
1 part hardener by weight*

Colours Available:

White	CHEMSET® ES8530
Yellow	CHEMSET® ES8531
Red	CHEMSET® ES8532
Green	CHEMSET® ES8533
Blue	CHEMSET® ES8534
Orange	CHEMSET® ES8535
Violet	CHEMSET® ES8536
Aqua	CHEMSET® ES8537



Thixotropic Resin (CHEMSET® ES 8124)

This resin is to be used with the Thixotropic Hardener (CHEMSET® ES 8221). The resin is designed specifically to be used on curved surfaces. It forms a thick enamel that ‘sticks’ to the surface and does not run off the edge or to the sides.

The Thixotropic enamel looks better when coloured as it is not entirely clear.

This resin can be made thinner by using the Type A Hardener (CHEMSET® ES 8204) instead of the Thixotropic Hardener. If even less viscosity is required, the Thixotropic Resin can be blended with the Low Viscosity Resin (CHEMSET® ES 8103).

***“Type A Resin for use
with Type A Hardener”***



Low Viscosity Resin (CHEMSET® ES 8103)

A low viscosity version of resin that is suitable for large areas and mixing with other resins. Low Viscosity Resin can be blended with Thixotropic Resin and the Transparent Resins, it can also be coloured with the Opaque Colour Pastes. For areas over 5cm squared use this resin for better results. Tease out the edges with a pin or straightened paper clip.



“Type A Resin for use with Type A Hardener”

Mixing ratio is 2 parts resin : 1 part hardener by weight

Hard Resin (CHEMSET® ES 8106)

This is an extra hard liquid resin which is used when a flat, non-domed, surface is required. It can be sanded down when fully cured, has a lower tendency to clog the abrasive paper and it is easier to polish.

“Type B Resin for use with Type B Hardener”

Mixing ratio is 2 parts resin : 1 part hardener by weight



Superglaze Resin (CHEMSET® ES 8110)

This resin is designed to be used over white backgrounds, it gives a very bright effect and does not fade. It cannot be used with any colour pastes due to the way it 'bleaches' the colour to give the white effect.

Resin	Hardener	Enamel
1g +	0.5g	= 1.5g
2g +	1g	= 3g
3g +	1.5g	= 4.5g
10g +	5g	= 15g
20g +	10g	= 30g
30g +	15g	= 45g

This resin is often used on badges and keyfobs to make them look brighter and stand out.

“Type A Resin for use with Type A Hardener”

Mixing ratio is 2 parts resin : 1 part hardener by weight



Intense Black (CHEMSET® ES 8510) & Intense White (CHEMSET® ES 8511) Resins

These enamels give a very intense colour due to the colour being ground straight into the resin part of the mix. They do not allow the colour of the background to show through the enamel. They are designed to be these colours only so are not ideal for changing.

“Type B Resin for use with Type B Hardener”

Mixing ratio for the Intense Black is 2 parts resin : 1 part hardener by weight

Mixing ratio for the Intense White is 5 parts resin: 2 parts hardener by weight, as shown on the table opposite.



Flexible Resin (CHEMSET® ES 8115)

This is a Type B resin to be used with the Type B hardener (ES 8203). This was designed to be used on fabrics, paper, plastic etc to be entirely flexible. It can also be poured into a mould to create a 3D flexible or soft feeling enamelled piece.

It can be used with the Opaque colour pastes, using the guidelines on page 7 for the resin component, to give it colour.

“Type B Resin for use with Type B Hardener”



Please note that the mixing ratio of the Flexible Resin is 5 parts resin to 2 parts hardener by weight as shown on the table below.

Resin	Hardener	Enamel
1g +	0.4g	= 1.4g
2g +	0.8g	= 2.8g
5g +	2g	= 7g
10g +	4g	= 14g
25g +	10g	= 35g

Type B Hardener (CHEMSET® ES 8203)

This hardener gives a clear, bright surface of superior gloss and appearance as well as superior resistance to humidity.

For use with type B resins.



Type A Hardener (CHEMSET® ES 8204)

Similar to CHEMSET® ES 8203 but for use with type A Resins.

Mixing ratio is 2 parts resin : 1 part hardener by weight



Fleximould (CHEMSET® AP 1401)

The Fleximould allows you to make moulds to create various cast shapes. It comes in two parts that have to be mixed together in equal quantities by weight.

Part A is White and Part B is Blue, when they are mixed correctly an even, translucent pale blue colour will be created. The Fleximould is workable for 40-50 minutes and it sets in about 6-7 hours.

When set the Fleximould remains slightly flexible allowing you to easily remove the casting.



Mixing ratio is
1 part base : 1 part catalyst
by weight

Mould Release (CHEMSET® AP 1401)

A brilliant product that is a best seller.
Can be used on a variety of materials to stop the resin from sticking.

This product is sold in an easy to use pump spray bottle. Only a very small amount should be applied to the surface of the mould for easy to remove action.

Ideal for use with, for example, chocolate and icing moulds to produce intricate mouldings for use in jewellery and craft applications.

Remember, all of the resins available can be used for casting as well as enamelling and using the mould release opens up a whole new world the world of casting!



Hobby Resin (CHEMSET® EZ 7401)

This resin has been designed for the first time user to try out as it is measured by volume NOT weight.

Use a spoon or small pot to measure 2 parts of resin and then 1 part of hardener. You should still be accurate with your measurements and all other points that apply to the other resins apply to this one as well.

Once you are happy using resin we suggest you move to our other resins and the measuring by weight method as volumetric resins do not give as consistently good results as the normal range.



“Type B Resin for use with Type B Hardener”

Aqueous Cleaner (CHEMSET® AP 1120)

This non-flammable cleaner can be used for cleaning the uncured enamel from your tools and equipment.



Epoxy Stripper (CHEMSET® AP 1105)

Epoxy Stripper acts by swelling the cured enamel, reducing it to a crumbling mass which can easily be wiped off metallic objects.

Skin Protection Products

Epoxy resins and hardeners can cause skin irritation. We recommend the use of Travabon Special Cream or Lindesa to protect your hands whilst working. After work, hands can be cleaned with soap and water but we strongly recommend the use of Cupran, Slig or ResSolve.



Accessories

A large range of accessories to help you measure, mix, apply and cure the enamel is also available. Contact us for more details.

Starter packs

There are 6 mini starter packs available:

STARTER PACK V

CHEMSET® Transparent Colours Kit



This kit contains:

100g Resin (ES8103)

110g Hardener (ES8204)

15g of each colour:

Yellow, Brown, Red, Green, Blue, Black, Orange, Violet and Pink

STARTER PACK VI

CHEMSET® Opaque Colours Kit



This kit contains:

500g Resin (ES8102)

250g Hardener (ES8203)

100g White colour paste 30g of each colour:

Grey, Yellow, Ochre, Red Oxide, Red, Green, Blue, Black, Green GG, Navy Blue, Pink E, Red-Violet, Regalia Blue and Brown

STARTER PACK XX

CHEMSET® Sparkle Resins Kit



This kit contains:

150g Hardener (ES8204)

30g of each colour:

Neutral, Yellow, Red, Green, Blue, Pink, Orange, Brown, Turquoise and Lilac



STARTER PACK XXI

CHEMSET® Metallic & Pearl Resins Kit

This kit contains:

150g Hardener (ES8204) 30g of each colour:
Silver Glitter, Satin White Pearl, Gold Pearl, Copper Pearl, Bronze Pearl, Manganese Pearl, Pink Pearl and Black Olive Pearl



STARTER PACK XXII

CHEMSET® Fluorescent Colours Kit

This kit contains:

500g Resin (ES8102)
250g Hardener (ES8203)
30g of each colour:
Yellow, Red, Green, Blue, Orange and Pink



STARTER PACK XXIII

CHEMSET® Glow-in-the-Dark Resins Kit

This kit contains:

150g Hardener (ES8204)
30g of each colour:
White, Yellow, Red, Green, Blue, Orange,
Violet, Aqua

A Cleaning Kit (Starter Pack XXV) and a Mixing Kit (Starter Pack XXVI) are also available.

All of these Starter Packs can be bought from our website:

www.brightenamels.co.uk

Curing procedures

After the resin and hardener have been mixed together you will have approximately 45–60 minutes to use it. The amount of usable time will vary according to the amount of material you have mixed and the temperature of the room.



Hardening will occur overnight (16 hours) at room temperature. The room temperature should not be allowed to drop below 18°C during the curing process.

You can cure the material in a curing cabinet, at 30°C to 40°C, which will accelerate the curing time and permit handling within 2–3 hours. This will also prevent dust settling on the surface.

Should air bubbles be present prior to curing these can be removed by wafting the flame from a gas burner briefly over the surface.



Projects

