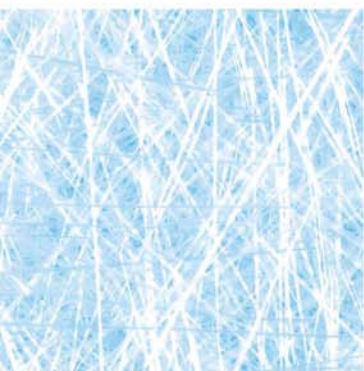


IJMOCOLOR

Colour to your desire



INTRODUCTION

De IJssel Coatings B.V. is a Dutch producer of coatings and related materials, specialized in two component materials on the basis of epoxy, polyurethane and unsaturated polyester resins. The company was established in 1930 and from 2009 all products are developed, produced and distributed from a modern production facility in Moordrecht, The Netherlands.

Products from De IJssel Coatings offer colour and protection in a wide range of applications and markets, amongst others:

- **Pleasure craft** Products for new building, repair and maintenance of sailing boats and other pleasure craft.
- **Composites** Products for the glass reinforced composites industry.
- **Colour pastes** A range of reactive colourants for polyester, epoxy, polyurethane or polyaspartics.
- **Industry** Various products and semi-products for a wide range of applications.

IJMOCOLOR COLOURPASTES

IJmocolour colour pastes are based on high quality lightfast pigments dispersed in reactive polymers. IJmocolour colour pastes are available in following qualities:

- **IJMOCOLOR EP**
Based on a solvent free, non-crystallizing, reactive bisphenol A/F epoxy resin. IJmocolour EP is recommended as colour paste for solvent free- and solvent based epoxy materials such as resins, mortars, self levelling floorings, trowel floorings and stone carpets. IJmocolour EP is available in 14 standard colours (see table 1) and 8 additional colours (see table 2).
- **IJMOCOLOR CO**
Based on castor oil, free from any solvents. IJmocolour CO is recommended as colour paste for solvent free polyurethane materials such as resins, mortars, self levelling floorings, etc. IJmocolour CO is available in 12 standard colours (see table 1).
- **IJMOCOLOR CO PLUS**
Based on castor oil and specially selected dispersants, free from any solvents. IJmocolour CO plus is compatible with a wide range of binders and hardeners and prevents colour separation or pigment flocculation in the end product. IJmocolour CO plus is recommended as colour paste for solvent free polyurethane materials such as resins, mortars, self levelling floorings, etc. IJmocolour CO plus is available in 13 standard colours (see table 1).
- **IJMOCOLOR RE**
Based on aspartic acid esters. IJmocolour RE is recommend as colour paste for aromatic polyurea's and solvent free or solvent based polyaspartics materials such as resins, coatings, floorings, etc. IJmocolour RE is available in 12 standard colours (see table 1).

Our IJmocolour Colour fan shows a selected range of more than 800 colours which can be using the IJmocolour range of pigment pastes. By mixing the standard colours (see table 1) any of the 800 colours may be produced. The formulations have been developed by computer, thus achieving the best combination of colour accuracy, reproducibility, performance and material costs. In addition, formulations for all 185 RAL shades are also available.

Each IJmocolour Colour formulation gives following information:

- name and colour code;
- name of colour collection;
- date of formulation;
- composition of the colour in a percentage by weight;
- information on colour accuracy (when applicable);
- the hardener index and epoxy equivalent weight (E.E.W.) (only for IJmocolour EP);
- the amine equivalent weight (A.E.W.) (only for IJmocolour RE).

Table 1, standard colours:

Code	Description	CI number	CI name	E.E.W. ¹	A.E.W. ²	Available as
100	IJmocolour 100 white	77891	White 6	358	560	EP, CO, COplus, RE
110	IJmocolour 110 heliogreen	74260	Green 7	358		EP
113	IJmocolour 113 brightyellow ³	771740	Yellow 184	358	560	EP, COplus, RE
116	IJmocolour 116 yellow	11783	Yellow 120	358	560	EP, CO, COplus, RE
120	IJmocolour 120 heliogreen ³	74260	Green 7		420	CO, COplus, RE
123	IJmocolour 123 middle yellow ³	771740	Yellow 184	358	560	EP, COplus,
124	IJmocolour 124 orange	12760	Orange 64	225		EP, COplus
127	IJmocolour 127 yellow	77788	Yellow 53	358	560	EP, CO
133	IJmocolour 133 oxyde yellow	77496	Yellow 119	280	560	EP, CO, COplus, RE
140	IJmocolour 140 oxyde red	77491	Red 101	358	560	EP, CO, COplus, RE
145	IJmocolour 145 red	56110	Red 254	358	560	EP, CO, COplus, RE
150	IJmocolour 150 blue ³	74160	Blue 15.2		420	CO, COplus, RE
155	IJmocolour 155 blue	74160	Blue 15.2	358	420	EP
191	IJmocolour 191 black	77266	Black 7	358	560	EP, CO, COplus, RE
192	IJmocolour 192 purple	73900	Violet 19	196	420	EP, CO, COplus, RE
196	IJmocolour 196 violet	51345	Violet 37	358	560	EP, CO, COplus, RE
198	IJmocolour 198 oxyde green	77288	Green 17	358	560	EP, CO, COplus. RE

¹ E.E.W. = Epoxy equivalent weight, only applicable for IJmocolour EP
² A.E.W. = Amine equivalent weight, only applicable for IJmocolour RE
³ Colour not available as IJmocolour EP

Above standard colours can be mixed in any ratio to achieve any colour. The additional colours are already mixed to some popular colours, see following table:

Table 2, additional colours:

Code	Description	E.E.W. ¹
EP111	IJmocolour EP111 light grey	397
EP121	IJmocolour EP121 middle grey	358
EP151	IJmocolour EP151 light blue	358
RAL1015	IJmocolour EP RAL1015 light ivory	358
RAL6011	IJmocolour EP RAL6011 reseda green	358
RAL7001	IJmocolour EP RAL7001 silver grey	358
RAL7032	IJmocolour EP RAL7032 pebble grey	358
RAL9002	IJmocolour EP RAL9002 grey white	358

¹ E.E.W. = Epoxy Equivalent Weight, only applicable for IJmocolour EP.

Extensive quality control in combination with a fully controlled production process enables us to supply IJmocolour colour pastes of constant quality.

A computer has calculated the colour accuracy of each IJmocolour colour formulation. This accuracy gives the difference between colour fan and actual colour produced according to the formulation. When the difference is above a certain value, a colour difference may be visible. In such cases a warning "Colour deviation possible" is given in the formulation.

When a formulated colour is added in small quantities to a mixture, fillers and extenders in the mixture can affect the final colour. This problem may often be corrected by increasing the percentage of colour paste. It is always recommended to make a small trial first to check the final colour is to your requirement. It is also possible we develop tailor-made formulations compatible with your base material. In this way the effect of fillers and extenders on final colour may be corrected, resulting in a better colour accuracy.

MIXING RATIO WITH HARDENERS

Epoxy, polyurethane, polyurea and polyaspartic resins cure by chemical reaction with the hardener component. To ensure this chemical reaction is complete, the correct quantity of hardener should be added to the resin. Adding an excess or too little hardener will lead to a final product with possible surface defects, poor durability and poor mechanical properties.

IJmocolour EP

When we mix a colour with IJmocolour EP and add this mixture to an epoxy resin, we have to increase the amount of hardener. The mixture of colour pastes contains a certain quantity of epoxy resin which should cure as well. The additional amount of hardener can be calculated from the Epoxy Equivalent Weight (E.E.W.). The following formulation can be used:

$$HH_{\text{harder}} = \frac{HH_{\text{colourformula}} \times HEQ_{\text{harder}}}{EEW_{\text{colourformula}}}$$

In the above formulation is:

- HH_{harder} the required additional quantity of hardener;
- HH_{colourformula} the quantity colour formula;
- HEQ_{harder} the equivalent weight of the hardener, this value may be found in the technical datasheet from the supplier of the hardener;
- EEW_{colourformula} the equivalent weight of the epoxy colour formula, this value is given in each IJmocolour EP colour formulation.

Example:

2 kilogram IJmocolour EP colour RAL1000 should be cured with a hardener. According the technical information from the supplier the HEQ equals 120. The EEW of colour RAL1000 equals 358. De required quantity of hardener to be added to cure the mixture is:

$$2 \times 120 : 358 = 0,67 \text{ kilogram hardener.}$$

IJmocolour CO/IJmocolour CO plus

Adding IJmocolour CO in high concentrations to polyurethanes will cause the polyurethane to become soft and flexible. This is difficult to correct with an additional quantity of hardener as the reactivity of castor oil is low. In such cases we advise to reduce the amount of castor oil in the base component. For more information, please consult see the technical datasheet of IJmocolour CO.

IJmocolour RE

Adding IJmocolour RE to polyaspartic systems can affect the reactivity of the system. We advise changing the ratio between fast and slow curing binders in the base component to correct this problem. In all cases, we recommend a small test first.

To calculate the correct amount of hardener, a similar calculation for polyaspartic system may be used as for epoxy systems. When we produce a colour formula with IJmocolour RE and add this to a base, we have to add more hardener as also IJmocolour RE contains a reactive polymer. The additional quantity of hardener can be calculated using the amine equivalent weight (A.E.W.). The following formulation can be used:

$$HH_{\text{harder}} = \frac{HH_{\text{colourformula}} \times NCO_{\text{harder}}}{AEW_{\text{colourformula}}}$$

In the above formulation is:

HH_{harder}	the required additional quantity of hardener;
$HH_{\text{colourformula}}$	the quantity colour formula;
NCO_{harder}	the NCO equivalent weight of the hardener, this value may be found in the technical datasheet from the supplier of the hardener;
$AEW_{\text{colourformula}}$	the amine equivalent weight of the epoxy colour formula, this value is given in each IJmocolour RE colour formulation.

For detailed information please consult the technical datasheet of IJmocolour RE.

ADDITIONAL PRODUCTS

Please have a look at other products De IJssel Coatings may offer. De IJssel Coatings produces a full range of products for shipbuilding, the glass reinforced composite industry and building industry. A summary of our product range:

Double Coat/Double Coat Dubbel UV/Double Coat Karaat/Tweecolux:

- Two component high gloss polyester/isocyanate finishes with exceptional levelling;

Variopox Injectiehars/Variopox Impregneerhars/Variopox Rolcoating:

- Two component solvent free epoxy systems for wood, steel, concrete and grp;

IJmopox ZF primer/IJmopox HB coating:

- Two component high solid epoxy primer and coating for steel, concrete and grp;

Poltix Super Plamuur/Poltix Vezelplamuur/IJmofix/Variopox Plamuren:

- Fillers based on unsaturated polyester or epoxy resins;

Balsaplast/IJmobond/IJmoplast/Variobond:

- Bonding pastes based on unsaturated polyester or epoxy resins.

Date: January 20

Disclaimer

The information in this data sheet is based on thorough research and development in combination with practical experience, is to the best of our knowledge and correct at the date of printing. De IJssel Coatings BV does not accept any liability as the final result depends on a number of factors beyond our control, amongst others, but not limited to, skill of labour, application conditions and surface preparation. De IJssel Coatings BV reserves the right to change data without prior notice. This data sheet supersedes all previous issues.

DESCRIPTION

IJmocolor EP is based on high quality pigments finely dispersed in solvent free epoxy resins.

PRINCIPAL CHARACTERISTICS

- Suitable as colour paste for solvent based and solvent free epoxy coatings;
- Suitable as colour paste for epoxy based flooring compounds, trowel floorings, etc.;
- High pigment content and colour strength, only minimal dosage is required;
- All 14 colourpastes can be mixed together in any ratio to obtain a wide range of colours, including all RAL and NCS shades;
- The use of IJmocolor EP guarantees a good colour accuracy and high colour reproducibility;
- Almost unlimited shelflife.

COLOURS

15 standard colours, special colours on request

BASIC PROPERTIES (AT 23 °C AND 50% R.H.)

Density	: approx. 1,8 g/cm ³ (white EP100), depending on colour
Solid content	: approx. 100 % (volume)
Pigment content	: approx. 50 % (white EP100), depending on colour
Epoxy equivalent weight (E.E.W.):	: approx. 358 (white EP100), depending on colour
Shelf life	: in original packing, stored in a cool and dry place, at least 24 months
Flashpoint (DIN53213)	: > 100 °C

INSTRUCTIONS FOR USE

Before use, mix thoroughly.

Mixing ratio	:
Self levelling floorings	: use 3 to 5 % (by weight) IJmocolor EP. The actual quantity depends on colour and application.
Roller applied floorings	: use 5 to 10 % (by weight) IJmocolor EP. The actual quantity depends on colour and application.
Solid surfaces	: use 1 to 5 % (by weight) IJmocolor EP. The actual quantity depends on colour and application.

Add the epoxy resin to the IJmocolor EP whilst stirring, preferably by means of a mechanical stirrer.

ADDITIONAL INFORMATION

- Adding IJmocolor EP
Add IJmocolor EP to base component whilst stirring. Adding a larger quantity of IJmocolor EP to a base component will require an additional quantity of hardener.
- Determination of the required quantity of hardener
Epoxy resins cure by chemical reaction with the hardener component. To ensure complete curing, the correct quantity of hardener should be added to the mixture of epoxy resin and IJmocolor EP. An incomplete curing may result in various film defects. The quantity of hardener may be calculated using the epoxy equivalent weight (E.E.W.) and the hardener equivalent weight (H.E.Q.). The ratio between both components is correct when the total quantity of epoxy equivalents is equal to the total quantity of hardener equivalents.

The required quantity of hardener necessary for any amount of IJmocolor EP can be calculated with following formulation:

$$QTY_{hardener} = \frac{QTY_{IJmocolor\ EP} \times HEQ_{hardener}}{EEW_{IJmocolor\ EP}}$$

Whereby:

QTY_{hardener} required quantity by weight of hardener;
QTY_{IJmocolor EP} the quantity by weight of IJmocolor EP;
HEQ_{hardener} equivalent weight of the hardener (this value may be obtained from the supplier of the hardener);
EEW_{IJmocolor EP} the equivalent weight of the IJmocolor EP.

Example:

200 gram IJmocolor EP100 white is cured with a curing agent. According to the technical information, the H.E.Q. for the hardener is 120. The E.E.W. for colour EP100 white is according to the table 358. The quantity of hardener which should be added is:

$$200 \times 120 / 358 = 67 \text{ gram hardener.}$$

When 200 gram IJmocolor EP100 white is added to a given quantity of epoxy resin which will be cured with the same hardener, an additional quantity of 67 gram hardener should be added to the mixture of resins and IJmocolor to obtain proper curing.

- **Available colours**

Standard colours:

code	description	E.E.W.
EP100	IJmocolor EP100 white	358
EP110	IJmocolor EP110 heliogreen	308
EP113	IJmocolor EP113 bright yellow	358
EP116	IJmocolor EP116 yellow	224
EP123	IJmocolor EP123 middle yellow	358
EP124	IJmocolor EP124 Orange	224
EP127	IJmocolor EP127 light yellow	358
EP133	IJmocolor EP133 oxide yellow	280
EP140	IJmocolor EP140 oxide red	358
EP145	IJmocolor EP145 red	358
EP155	IJmocolor EP155 blue	218
EP191	IJmocolor EP191 black	358
EP192	IJmocolor EP192 purple	196
EP196	IJmocolor EP196 violet	338
EP198	IJmocolor EP198 oxide green	358

SAFETY INFORMATION

See the corresponding Material Safety Data Sheet for detailed instructions on safety, disposal and health.

Date: January '20
301-99999

Disclaimer

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DESCRIPTION

IJmocolor COplus is based on high quality pigments finely dispersed in castor oil and selected surfactants and dispersants. IJmocolor COplus is free from any solvent or VOC.

PRINCIPAL CHARACTERISTICS

- Suitable as colour paste for solvent free polyurethane systems;
- Suitable as colour paste for resins, flooring compounds, trowel floorings, etc. based on polyurethanes;
- High pigment content and colour strength, only minimal dosage is required, thus efficient and cost-effective;
- Contains surfactant and dispersant, thus compatible with a wide range of base materials and hardeners;
- Based on high quality, lightfast pigments;
- All 14 base colours can be mixed together in any ratio;
- With the 14 base colours of IJmocolor COplus a wide range of colours can be obtained, including all RAL and NCS shades;
- The use of IJmocolor COplus guarantees a good colour accuracy and high colour reproducibility without surface defects such as colour separation;
- IJmocolor COplus has a low viscosity and is suitable for automatic dispensing systems;
- Almost unlimited shelf life.

COLOURS

14 standard colours, special colours on request

BASIC PROPERTIES (AT 23 °C AND 50% R.H.)

Density	:	approx. 1,6 g/cm ³ (white COplus 100), depending on colour
Solid content	:	approx. 100 % (volume)
Pigment content	:	approx. 50 % (white COplus 100), depending on colour
Shelf life	:	in original packing, stored in a cool and dry place, at least 12 months
Flashpoint (DIN53213)	:	> 65 °C

INSTRUCTIONS FOR USE

Before use, mix thoroughly.

Mixing ratio	:	
Coatings	:	use 10 to 15 % (by weight) IJmocolor COplus. The actual quantity depends on colour and application.
Roller applied floorings	:	use 5 to 10 % (by weight) IJmocolor COplus. The actual quantity depends on colour and application.
Solid surfaces	:	use 1 to 5 % (by weight) IJmocolor COplus. The actual quantity depends on colour and application.

ADDITIONAL INFORMATION

- Adding IJmocolor COplus
Add IJmocolor COplus to base component whilst stirring. Adding a larger quantity of IJmocolor COplus to a base component will require an additional quantity of hardener.
- Combinations with base resins and isocyanates
 - Always check the properties of base resin, isocyanate and IJmocolor COplus in view of compatibility, application, pot life and stability by preparing a sample first.
 - When aromatic isocyanates are used as curing agent, discolouration will occur when exposed to direct sunlight. The phenomena is inherent to the choice of hardener.
- Available colours
The 14 base colours of IJmocolor COplus are:

Code	Descripton
CO100	IJmocolor COplus 100 white
CO113	IJmocolor COplus 113 bright yellow
CO116	IJmocolor COplus 116 yellow
CO120	IJmocolor COplus 120 green
CO123	IJmocolor COplus 123 mid yellow
CO124	IJmocolor COplus 124 bright orange
CO133	IJmocolor COplus 133 oxyde yellow
CO140	IJmocolor COplus 140 oxyde red
CO145	IJmocolor COplus 145 red
CO150	IJmocolor COplus 150 blue
CO191	IJmocolor COplus 191 black
CO192	IJmocolor COplus 192 purple
CO196	IJmocolor COplus 196 violet
CO198	IJmocolor COplus 198 oxyde green

With above colours all RAL- NCS or IJmocolor colours can be produced.

SAFETY INFORMATION

See the corresponding Material Safety Data Sheet for detailed instructions on safety, disposal and health.

Date: July '18
702-99999

Disclaimer

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DESCRIPTION

IJmocolor RE is based on high quality pigments finely dispersed in aspartic acid ester. IJmocolor RE is free from solvents.

PRINCIPAL CHARACTERISTICS

- Suitable as colour paste for solvent based and solvent free aliphatic polyaspartics systems;
- Suitable as colour paste for solvent free polyurea systems;
- High pigment content and colour strength, only minimal dosage is required;
- All 13 colour pastes IJmocolor RE can be mixed together in any ratio;
- With the 13 colour pastes IJmocolor RE all RAL and NCS shades can be formulated;
- The use of IJmocolor RE guarantees a good colour accuracy and high colour reproducibility;
- Almost unlimited shelf life.

COLOURS

13 standard colours, special colours on request

BASIC PROPERTIES (AT 23 °C AND 50% R.H.)

Density	:	approx. 1,8 g/cm ³ (white RE100), depending on colour
Solid content	:	approx. 100 % (volume)
Pigment content	:	approx. 50 % (white RE100), depending on colour
Amine equivalent weight (A.E.W.):	:	approx. 560 (white RE100), depending on colour
Shelf life	:	in original packing, stored in a cool and dry place, at least 12 months
Flashpoint (DIN53213)	:	145 °C

INSTRUCTIONS FOR USE

Before use, mix thoroughly.

Mixing ratio	:	
Coatings	:	use 10 to 15 % (by weight) IJmocolor RE. The actual quantity depends on colour and application.
Roller applied floorings	:	use 5 to 10 % (by weight) IJmocolor RE. The actual quantity depends on colour and application.
Solid surfaces	:	use 1 to 5 % (by weight) IJmocolor RE. The actual quantity depends on colour and application.

ADDITIONAL INFORMATION

- Adding IJmocolor RE
Add IJmocolor RE to base component whilst stirring, preferably by means of a mechanical stirrer. Adding a larger quantity of IJmocolor RE to a base component will require an additional quantity of hardener.
- Combinations with base resins and isocyanates
 - Always check the properties of base resin, isocyanate and IJmocolor RE in view of compatibility, application, pot life and stability by preparing a sample first.
 - When aromatic isocyanates are used as curing agent, discolouration will occur when exposed to direct sunlight. The phenomena is inherent to the choice of hardener.

- Available colours

The 13 base colours of IJmocolor RE are:

Code	Description	CI number	CI name	A.E.W.	% pigment
RE100	IJmocolor RE100 white	77891	White 6	560	± 50
RE113	IJmocolor RE113 bright yellow	771740	Yellow 184	560	± 30
RE116	IJmocolor RE116 yellow	11783	Yellow 120	560	± 20
RE120	IJmocolor RE120 green	74260	Green 7	420	± 10
RE123	IJmocolor RE123 midyellow	771740	Yellow 184	420	± 40
RE133	IJmocolor RE133 oxide yellow	77496	Yellow 119	560	± 16
RE140	IJmocolor RE140 oxide red	77491	Red 101	560	± 50
RE145	IJmocolor RE145 red	56110	Red 254	560	± 20
RE150	IJmocolor RE150 blue	74160	Blue 15.2	420	± 10
RE191	IJmocolor RE191 black	77266	Black 7	560	± 7
RE192	IJmocolor RE192 purple	73900	Violet 19	420	± 7
RE196	IJmocolor RE196 violet	51345	Violet 37	560	± 5
RE198	IJmocolor RE198 oxide green	77288	Green 17	560	± 50

With above colours all RAL- NCS or IJmocolor colours can be produced.

SAFETY INFORMATION

See the corresponding Material Safety Data Sheet for detailed instructions on safety, disposal and health.

Date: March '19
501-99999

Disclaimer

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