

**TEXTILE
SOLUTIONS.**

**Bezema
Colour
Solutions.**

CHT
SMART CHEMISTRY
WITH CHARACTER.



BEZAKTIV SELECTION

**REACTIVE DYES FOR C2C BY CHT
REQUIREMENTS**

BEZAKTIV SELECTION



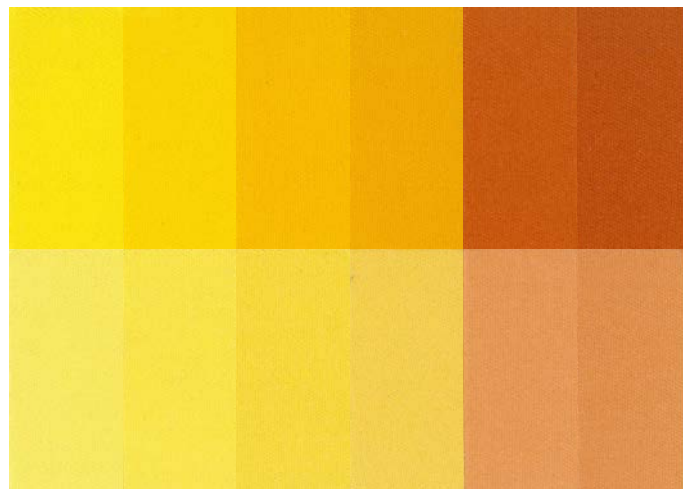
REACTIVE DYES FOR C2C BY CHT REQUIREMENTS DYESTUFFS

This BEZAKTIV dye selection meets not only the material health requirements of the Cradle to Cradle Certified™ Product Standard at the Platinum level but additionally covers a wide range of shades. Thus, this range simultaneously allows a sustainable and economical dyeing of textiles with maximum fastness levels.



This colour shade card, all dyestuff profiles and much more useful information can also be found in our Bezema Colour Solutions dyestuff app or online: www.cht.com/c2c

Solution stability g/l	25 °C	neutral	
Light		3/1 2/1 1/1 1/6 1/25	
	Washing	60 °C	CC CO CV
		95 °C	CC CO CV
			Water
	Perspiration fastness	acid	CC CO PA
alkaline		CC CO PA	
Chlorine washing		CC	
Chlorine bath water fastness 20 ppm		CC	
Dischargeability		1/1 1/25	
Dyeing methods	Pad-Batch Pad-Dry-Pad-Steam		
	Exhaust	60 °C	



	Yellow S-8GN* 0.45 % 2.70 %	Yellow V-GL 150 0.66 % 4.00 %	Yellow V-GR 133* 0.52 % 3.10 %	Golden Yellow GO* 0.27 % 1.60 %	Orange GO 0.16 % 1.00 %	ZERO Orange GO 0.27 % 1.60 %
50	80	100	100	100	100	
-	-	-	-	-	-	
4	6	5	5-6	4-5	4-5	
3-4	5	4-5	4-5	4	4-5	
3	4-5	3-4	3-4	3-4	4	
4-5	4-5	4-5	4-5	4-5	4-5	
5	4-5	4-5	5	5	5	
4-5	4-5	4-5	5	5	4-5	
4	4-5	4	4	4	3-4	
4-5	4	4	5	4	4-5	
4-5	4	4	5	4	4-5	
5	5	5	4-5	5	4-5	
4-5	5	5	5	5	5	
5	5	5	5	5	5	
4-5	5	5	4-5	4-5	4-5	
5	5	5	5	5	5	
5	5	5	5	5	5	
4-5	5	5	4-5	4-5	4-5	
5	5	5	5	5	5	
5	5	5	5	5	5	
3-4	2	2-3	1	3-4	2-3	
3	4-5	2	1-2	3-4	3	
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[+]	+	+	+	+	+	
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* Printing recommendation

BEZAKTIV SELECTION



REACTIVE DYES FOR C2C BY CHT REQUIREMENTS

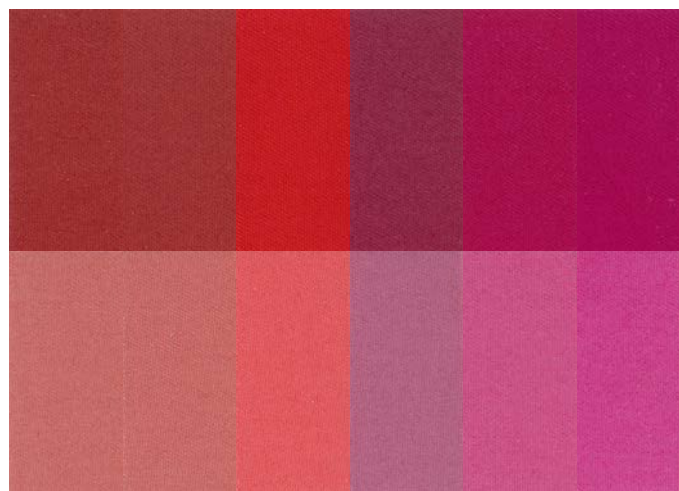
DYESTUFFS

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Solution stability g/l	25 °C	neutral
Light		3/1
		2/1
		1/1
		1/6
		1/25
Washing	60 °C	CC
		CO
		CV
	95 °C	CC
		CO
		CV
Water		CC
		CO
		PA
Perspiration fastness	acid	CC
		CO
		PA
	alkaline	CC
		CO
		PA
Chlorine washing		CC
Chlorine bath water fastness 20 ppm		CC
Dischargeability		1/1 1/25
Dyeing methods	Pad-Batch Pad-Dry-Pad-Steam	
	Exhaust	60 °C



	Scarlet GO 0.23 % 1.40 %	ZERO Scarlet GO 0.16 % 1.00 %	Brilliant Red HP-G* 0.47 % 2.80 %	COSMOS Red S-C 0.12 % 0.70 %	Red GO 0.32 % 1.90 %	Red V-F3B* 0.58 % 3.50 %
100	80	100	100	100	100	
-	-	-	-	-	-	
-	-	-	-	-	-	
5-6	5-6	4-5	4-5	4	4	
4-5	4-5	4	4	4	3-4	
4	4	3-4	3-4	3-4	3	
4	4	4-5	5	4-5	4-5	
5	5	4-5	4	5	4-5	
5	5	4-5	4	5	5	
3-4	3-4	4-5	4-5	4	4-5	
4-5	4-5	4	3	4	3-4	
5	5	4-5	3-4	4-5	3-4	
4	4	4-5	4-5	4-5	5	
5	5	5	4-5	5	5	
5	5	5	4-5	5	5	
3-4	3-4	4-5	4-5	4-5	5	
5	5	5	5	5	5	
5	5	5	5	5	5	
3-4	3-4	4-5	4-5	4-5	5	
5	5	5	5	5	5	
5	5	5	5	5	5	
2	2	3	3	3-4	4	
3-4	3-4	4-5	4-5	3-4	4-5	
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* Printing recommendation

BEZAKTIV SELECTION



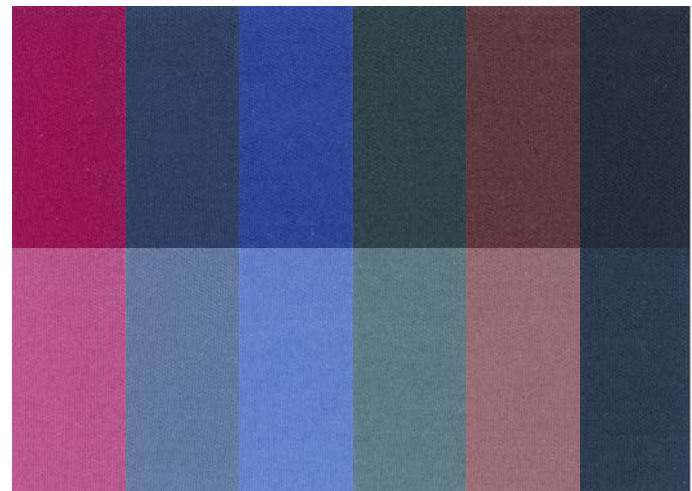
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Light		3/1 2/1 1/1 1/6 1/25	
	Washing	60 °C	CC CO CV
		95 °C	CC CO CV
			Water
	Perspiration fastness	acid	CC CO PA
alkaline			CC CO PA
			Chlorine washing
Chlorine bath water fastness 20 ppm		CC	
Dischargeability	1/1 1/25		
Dyeing methods	Pad-Batch Pad-Dry-Pad-Steam		
	Exhaust	60 °C	



Red HP-BL 0.60 % 3.60 %	Blue S-GN 150* 0.43 % 2.60 %	Blue V-RN spec.* 0.37 % 2.20 %	Green S-4B 150 0.37 % 2.20 %	Brown HP-5R* 0.45 % 2.70 %	Navy GO* 1.20 % 2.40 %
100	100	100	100	80	100
-	-	-	-	-	-
-	-	-	-	-	4-5
5	5-6	6	4-5	5-6	3-4
5	4-5	5-6	4	5-6	3
4-5	4	5	3	5	-
5	4-5	5	4-5	4-5	4-5
5	4-5	5	4-5	4-5	5
5	4-5	4-5	4-5	4-5	5
4-5	4-5	5	4-5	4	4
4-5	4	4-5	4-5	3-4	4
4-5	4-5	4	4-5	4-5	4-5
5	5	5	5	5	4-5
5	5	5	5	5	4-5
5	4-5	5	5	4-5	4-5
4-5	5	5	5	5	4-5
5	5	5	4-5	4-5	5
5	5	5	5	4-5	5
4-5	5	5	5	5	4-5
4-5	5	5	4	4-5	5
5	5	5	5	4-5	5
1	2	3-4	3-4	4	2
2-3	2	4	3-4	4-5	3-4
(+)	(+)	-	-	+	+
-	-	+	-	-	+
+	+	+	+	+	+
+	+	+	+	+	+
+	+	+	+	+	+

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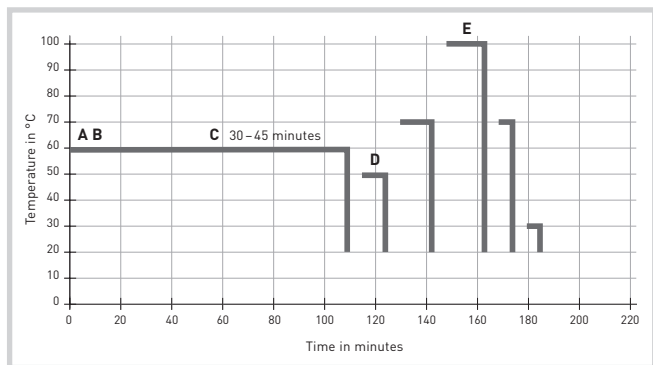
Solution stability g/l	25 °C	neutral
Light		3/1
		2/1
		1/1
		1/6
		1/25
Washing	60 °C	CC
		CO
		CV
	95 °C	CC
		CO
		CV
Water		CC
		CO
		PA
Perspiration fastness	acid	CC
		CO
		PA
	alkaline	CC
		CO
		PA
Chlorine washing		CC
Chlorine bath water fastness 20 ppm		CC
Dischargeability		1/1
		1/25
Dyeing methods	Pad-Batch	
	Pad-Dry-Pad-Steam	
	Exhaust	60 °C

	Navy S-G 1.36 % 2.70 %	ZERO Navy GO 1.20 % 2.40 %	ZERO Black GO* 1.50 % 4.50 %	Black S-W 1.50 % 4.50 %
100	100	100	100	
-	-	5	4	
4	4	-	-	
3-4	3-4	3-4	3-4	
2-3	3	-	-	
-	-	-	-	
4-5	4-5	4-5	4-5	
5	5	5	5	
5	5	5	5	
4-5	4	4-5	4-5	
4-5	4-5	4-5	4-5	
4-5	5	5	4-5	
4-5	4-5	5	4-5	
5	5	5	5	
5	5	5	5	
4-5	4-5	5	5	
5	5	5	5	
5	5	5	5	
4-5	4-5	5	5	
5	5	5	5	
5	5	5	5	
2-3	3	3-4	2-3	
3-4	4	4	3-4	
+	+	+	+	
+	-	+	+	
+	+	+	+	
+	+	+	+	
+	+	+	+	

PROCESS RECOMMENDATION

Isothermal process

Universal process for excellent reproducibility and levelness. If a dosage control system is used, the sodium carbonate and lye can be added progressively which leads to a steady increasing fixing curve and therefore the best possible levelness is reached. In addition, premature hydrolysis of the dye is prevented. This means the highest possible colour yield.



A	1.0 – 2.0	g/l	SARABID MIP
	10.0 – 90.0	g/l	Glauber's salt or common salt
B	x	%	BEZAKTIV dye
C	5.0 – 10.0	g/l	Sodium carbonate
	0 – 4.0	ml/l	Caustic soda solution 38 °Bé (add progressively within 45 min)
D	0.5	ml/l	Acetic acid 80 %, pH 7 – 9 during soaping
E	1.0 – 2.0	g/l	MEROPAN DPE

Cold pad batch process with reduced silicate quantity

The reduced silicate variant is the standard variant and has a high pad liquor stability in the temperature range of 20–30 °C. The application amount of silicate 38° Bé is generally 50 ml/l. Addition of the dye with the fixing alkali is performed with a mixing pump with a ratio of 4:1. Silicate deposits can occur on the rollers if silicate is used. Furthermore the use of silicate during the soaping process requires an intensive washing process before neutralisation to prevent silicate precipitation.

Dye solution:

x	g/l	BEZAKTIV dye
0 – 100	g/l	Urea
1 – 3	g/l	COLORCONTIN VGP

Alkali solution:

50	ml/l	Silicate 38 °Bé or SI-CONTROL KKV
y	ml/l	Caustic soda solution 32.5 % [38 °Bé]

Mixing ratio:

The stated quantities g/l of dye, ml/l of silicate and ml/l of caustic soda solution 32.5 % [38 °Bé] are based on the total volume of the padding liquor.

Dye and alkali solution are combined with a mixing pump with a normal mixing ratio of 4:1 and form the total padding liquor volume.

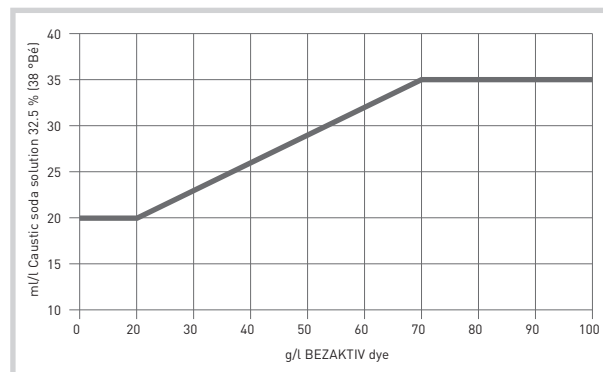
Padding liquor temperature:

20 – 30 °C

Dwelling time:

6 – 24 hours, up to 40 hours no colour losses or changes in colour occur.

Alkali concentration for the reduced silicate process



DATA ABOUT FASTNESS PROPERTIES

The fastness properties indicated in this shade card were determined on 1/1 SD standard depth dyeings on bleached cotton. Exceptions are the navy (2/1 SD) and black (3/1 SD) dyes.

- | | |
|--|------------------------|
| ▶ Fastness to light | DIN EN ISO 105-B02 |
| ▶ Fastness to laundering at 60 °C | DIN EN ISO 105-C06/C2S |
| ▶ Fastness to water | DIN EN ISO 105-E01 |
| ▶ Fastness to perspiration | DIN EN ISO 105-E04 |
| ▶ Fastness to washing with hypochlorite | DIN EN ISO 105-C06/D3S |
| ▶ Fastness to chlorinated water
(swimming pool water) | DIN EN ISO 105-E03 |

Dischargeability:

- + suitable for white discharge
- (+) suitable for coloured discharge
- not dischargeable

The colours illustrated in the shade card were dyed in various standard depths on bleached and mercerised cotton.

- | | |
|--------------|----------------|
| ▶ All shades | 1/6 and 1/1 SD |
| ▶ Navy | 1/1 and 2/1 SD |
| ▶ Black | 1/1 and 3/1 SD |

The data contained in this shade card is given to the best of our knowledge and belief. It does not guarantee specific product properties. All information is subject to change without notice.

The following dyeing auxiliaries for cellulosic are developed according to Cradle to Cradle® principles, and have achieved a Platinum level Material Health Certificate, based on the material health requirements of the Cradle to Cradle Certified™ Product Standard. Additional certified auxiliaries for pretreatment, printing, coating or finishing respectively for other fibers are available on request.

- ▶ COLORCONTIN VGP
- ▶ HEPTOL SF4
- ▶ MEROPAN DPE
- ▶ NEUTRACID NVM 200
- ▶ SARABID MIP
- ▶ SI-CONTROL KKV

The dyes and auxiliaries within this shade card have a Platinum Material Health Certificate from the Cradle to Cradle Products Innovation Institute with the certification number 4341 (Dyeing by CHT – Dyes) and 4352 (Dyeing by CHT – Auxiliaries).

Cradle to Cradle® is a registered trademark of McDonough Braungart Design Chemistry, LLC (MBDC). Cradle to Cradle Certified™ is a registered trademark of the Cradle to Cradle Products Innovation Institute.



Want to learn more about CHT's commitment to textile circular economy?

