



DyStar

Working for your benefit.

Indanthren[®] Navy SR Colloisol



Indanthren Navy SR Colloisol

Indanthren Navy SR Colloisol is a top-of-the-range navy dye with unique properties!

Most navy and dark blue vat dyes undergo a pronounced change of shade during soaping and finishing processes.

With Indanthren Navy SR Colloisol it is now possible to achieve very stable shades, leading to very high reproducibility. Moreover, change of shade during industrial and domestic laundering is minimal.

Indanthren Navy SR Colloisol is an excellent dye for all navy shades and is very suitable for both exhaust and continuous dyeing of CEL and PES/CEL.

Indanthren Navy SR Colloisol meets all major ecological requirements as it does not contain organically bonded halogens or heavy metals.

Indanthren (1/1 S.D.)		Navy SR	Standard Navy based on C.I. Blue 20	C.I. Vat Blue 20
Fastness to				
light (xenotest)	1/12 S.D.	4-5	5-6	5
(ISO 105-B01)	1/1 S.D.	6	7	7-8
washing at 95 °C	F	4-5	4	4-5
ISO 105-C04	Co	4-5	4-5	5
washing / peroxide 95 °C	F	4-5	4	4-5
DIN 54015	Co	4-5	4-5	5
hypochlorite bleaching, severe	F	4	4	4-5
ISO 105-N01				
peroxide bleaching (bath 2)	F	4	4	4R
ISO 105-N02	Co	4-5	5	5
mercerising	F	4-5	4-5	4-5
ISO 105-X04	Co	5	5	5
water spotting, ISO 105-E07				
	immediately	F	4-5	3-4R
	dry	F	5	5
dry cleaning (PER)				
	F	4-5	4	4R
ISO 105-D01	Co	4-5	4-5	4-5
ironing, ISO 105-X11				
	dry, immediately	F	4-5	3-4Y
	dry, after 4h	F	4-5	4
	wet bleeding	Co	5	5
Change of shade during soaping				
	1 min	4-5	4R	4R
	20 min	4-5	2R	2-3R

B = bluer, Y = yellower/greener, R = redder, C = clearer, D = duller

Special properties

Effect of soaping time on shade

Material: CO 100%
 Method: standard dyeing (pad-dry-pad-steam)
 Padding: ... g/l dye
 10 g/l Primasol® AMK
 2 g/l Primasol NF

Pad-steam development
 Rinse, oxidise, soap

Indanthren Navy SR Colloisol



Unsoaped

Soaped 1 min

Soaped 20 min

C. I. Vat Blue 20



Unsoaped

Soaped 1 min

Soaped 20 min



Effect of water spotting on shade

Material: CO 100%
Method: standard dyeing (pad-dry-pad-steam)
Padding: ... g/l dye
 10 g/l Primasol AMK
 2 g/l Primasol NF

Pad-steam development
Rinse, oxidise, soap

Indanthren Navy SR Colloisol



Immediately



Dry

C. I. Vat Blue 20



Immediately



Dry

Effect on shade of different finishing recipes

Material: PES/CO 65:35
 Method: standard dyeing (pad-dry-thermosol-pad-steam)

Recipe I

Padding
 42.0 g/l Indanthren Navy SR Colloisol
 4.0 g/l Dianix® Yellow Brown XF
 17.0 g/l Dianix Navy XF
 10.0 g/l Primasol AMK
 2.0 g/l Primasol NF
 Pick up 55%

Recipe II

Padding
 30.0 g/l Indanthren Dark Blue 5508 Colloisol
 7.0 g/l Indanthren Brown BR Colloisol
 4.0 g/l Dianix Yellow Brown XF
 2.5 g/l Dianix Red CBN-SF
 17.0 g/l Dianix Navy XF
 10.0 g/l Primasol AMK
 2.0 g/l Primasol NF
 Pick up 55%

Thermosoling, pad-steam development
 Rinse, oxidise, soap

Material: CO 100%
 Method: standard dyeing (pad-dry-pad-steam)

Recipe III

Padding
 95.0 g/l Indanthren Navy SR Colloisol
 10.0 g/l Primasol AMK
 2.0 g/l Primasol NF
 Pick up 55%

Recipe IV

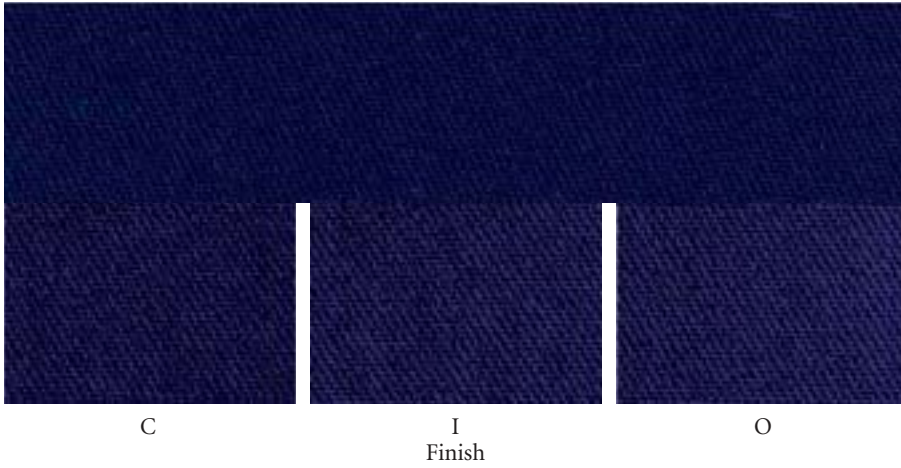
Padding
 82.0 g/l Indanthren Dark Blue 5508 Colloisol
 10.0 g/l Primasol AMK
 2.0 g/l Primasol NF
 Pick up 55%

Pad-steam development
 Rinse, oxidise, soap

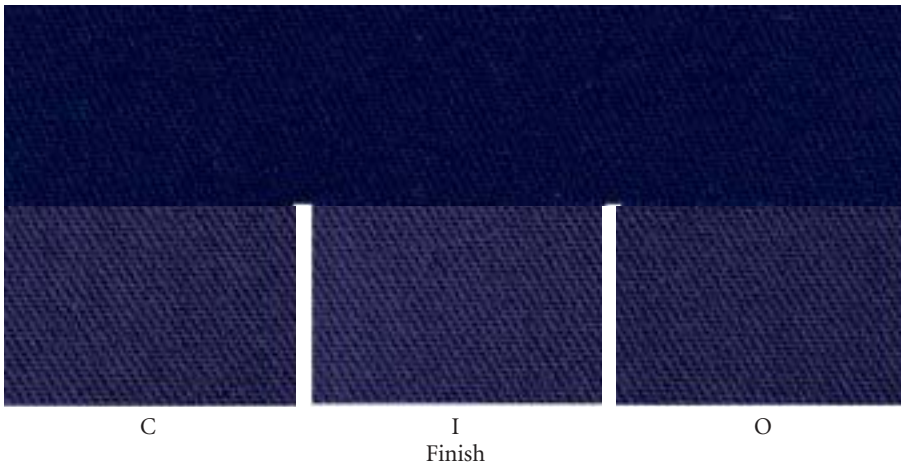


Effect on shade of different finishing recipes (examples)

Recipe I (based on Indanthren Navy SR Colloisol)

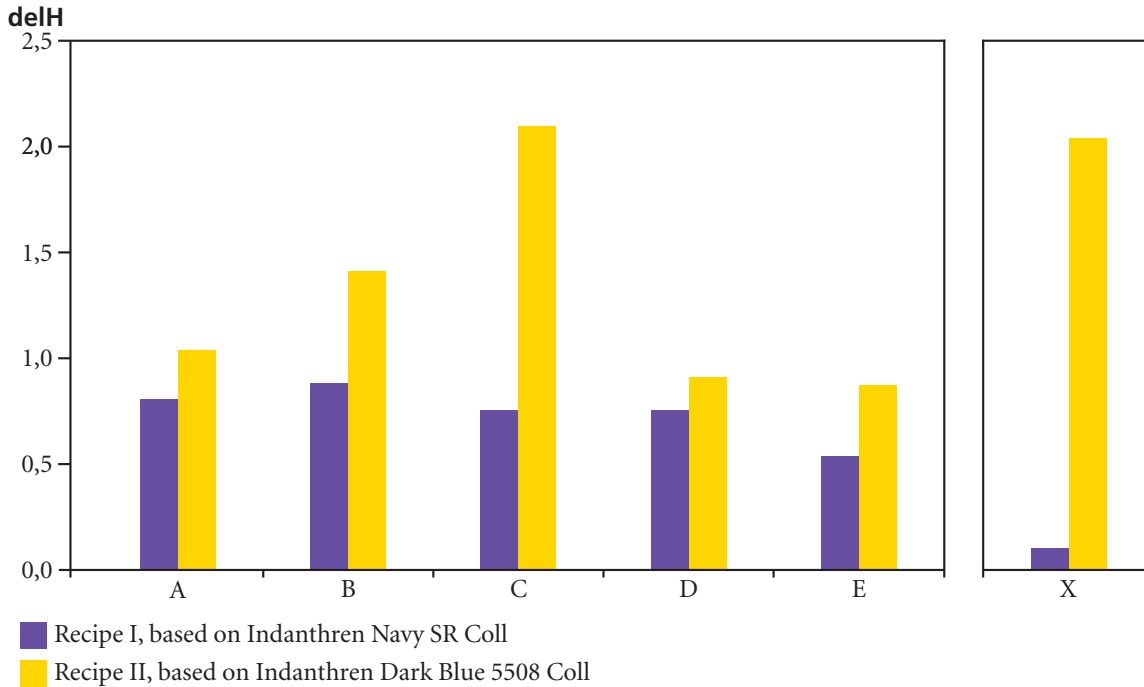


Recipe II (based on Indanthren Dark Blue 5508 Colloisol)



- C Dry crosslinking with DMedHEU + mixed catalyst (inorganic)
- I Antistatic quaternary ammonium compound
- O Aminofunctional polysiloxane additive (micro-emulsion)
(see also pages 7, 8 and 9)

Influence of different finishing recipes*



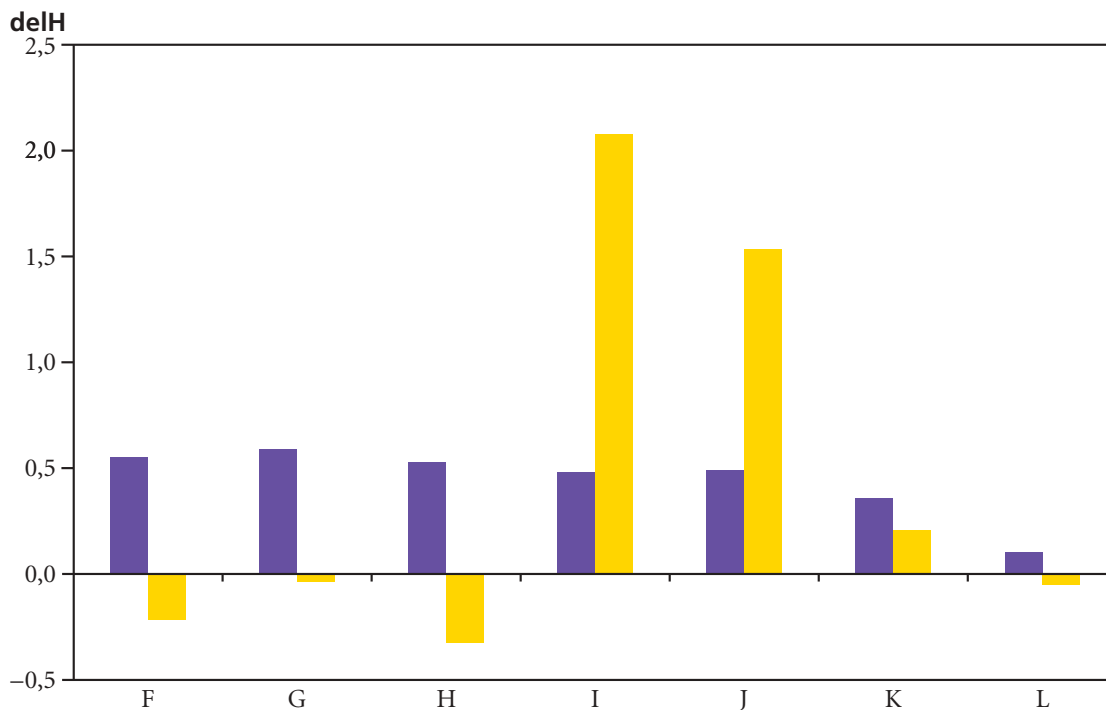
- A Dry crosslinking with DMDHEU Type 1 + magnesium chloride
Drying 1 min at 120 °C, curing 45 s at 170 °C
- B Dry crosslinking with DMDHEU Type 1 + mixed catalyst
(organic + inorganic)
Drying 1 min at 120 °C, curing 4 min at 150 °C
- C Dry crosslinking with DMeDHEU + mixed catalyst (inorganic)
Drying 1 min at 120 °C, curing 3 min at 150 °C
- D Dry crosslinking with DMDHEU Type 2 + magnesium chloride
Drying 1 min at 120 °C, curing 4 min at 150 °C
- E Moist crosslinking with DMDHEU Type 2 + sulphuric acid
Drying at 80 °C, batching for 24 h – wash off

- Recipe III, based on Indanthren Navy SR Coll
- Recipe IV, based on Indanthren Dark Blue 5508 Coll

- X Pyrovatex® CP flame retardant
Drying 1 min at 120 °C, curing 3 min at 150 °C

* Dyeing recipes see page 5

Influence of different finishing recipes*



■ Recipe I, based on Indanthren Navy SR Coll.

■ Recipe II, based on Indanthren Dark Blue 5508 Coll.

F Water-repellent paraffin wax/melamine resin + ammonium chloride

Drying 1 min at 120 °C, curing 4 min at 150 °C

G Water-repellent paraffin wax/melamine resin + ammonium sulphate

Drying 1 min at 120 °C, curing 4 min at 150 °C

H Water-repellent paraffin wax/melamine resin + zinc nitrate

Drying 1 min at 120 °C, curing 4 min at 150 °C

I Antistatic quaternary ammonium compound

Drying 1 min at 120 °C

J Antistatic aminofunctional polysiloxane (etherified, micro-emulsion)

Drying 1 min at 120 °C

K Oil-repellent fluoropolymer Type 1 (Teflon® HT)

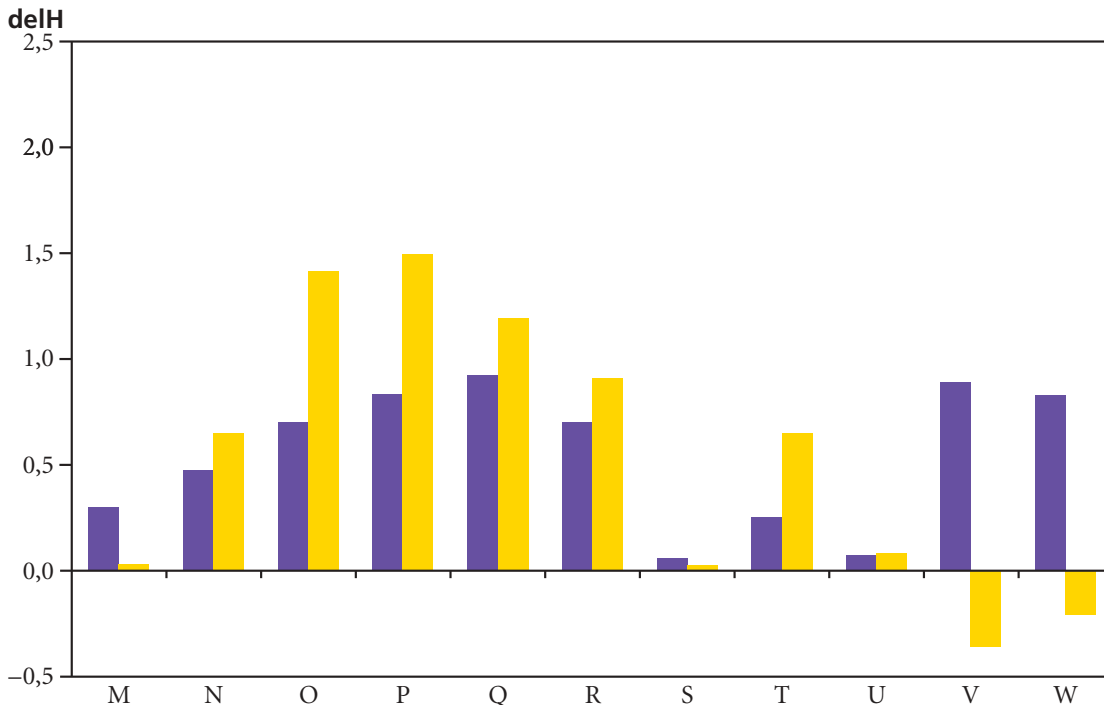
Drying 1 min at 120 °C, curing 5 min at 150 °C

L Oil-repellent fluoropolymer Type 2 (contains an extender)

Drying 1 min at 120 °C, curing 5 min at 150 °C

* Dyeing recipes see page 5

Influence of different finishing recipes*



■ Recipe I, based on Indanthren Navy SR Coll.
■ Recipe II, based on Indanthren Dark Blue 5508 Coll.

- M Polyacrylic additive
Drying 1 min at 120 °C
- N Aminofunctional polysiloxane additive
Drying 1 min at 120 °C
- O Aminofunctional polysiloxane additive (micro-emulsion)
Drying 1 min at 120 °C
- P Secondary polyethylene dispersion
Drying 1 min at 120 °C
- Q Dry crosslinking with DMDHEU Type 2
+ MgCl₂ + secondary polyethylene dispersion
Drying 1 min at 120 °C, curing 4 min at 150 °C
- R Dry crosslinking with DMDHEU Type 2
+ MgCl₂ + secondary polyethylene dispersion
Drying 1 min at 120 °C, curing 6 min at 150 °C
- S Polyvinylacetate handle-modifier
Drying 1 min at 120 °C
- T Fatty acid condensate handle-modifier
Drying 1 min at 120 °C
- U Polyalkylene handle-modifier
Drying 1 min at 120 °C
- V Polydimethylsiloxane handle-modifier
Drying 1 min at 120 °C, curing 5 min at 150 °C
- W Polydimethylsiloxane handle-modifier
Drying 1 min at 120 °C, curing 30 s at 170 °C

* Dyeing recipes see page 5

Customer benefits



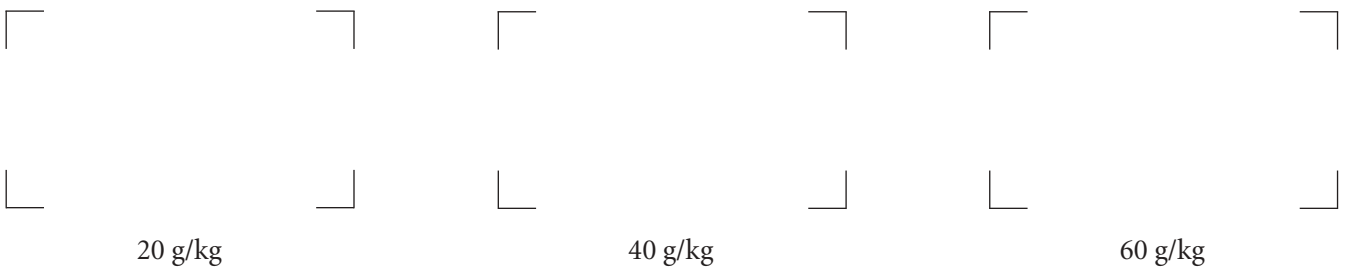
Controlled Coloration

- No impact of soaping conditions on shade
- No shade variation with oxidation at various pH values
- No impact of hard water salts on shade
- Colour constancy at different dyeing temperatures/ liquor ratios
- Suitable for high temperature processes

Color Confidence

- Highest shade stability during industrial and domestic laundering
- Highest shade stability during finishing
- Meets all major ecological requirements
- Fast to bleaching of coloured goods
- Good chlorine fastness
- Very good light fastness in medium to dark shades

Indanthren Navy SR Colloisol



Dyeing behaviour on PES (pad-dry-thermosol-pad-steam dyeing)

Pad-dry-pad-steam



Pad-dry-thermosol-pad-steam



40 g/kg Indanthren Navy SR Colloisol

Method:	standard dyeing (pad-dry-thermosol-pad-steam) ... g/l dye 10.0 g/l Primasol AMK 2.0 g/l Primasol NF
Intermediate drying	120 °C
Thermosoling	60 s, 215 °C
Pad-steam development	
Rinse, oxidise, soap	
Fabric:	PES/CO check fabric



Exhaust dyeing Colour constancy at different dyeing temperatures

40 °C 50 °C 60 °C Standard
70 °C 80 °C 90 °C 115 °C



Colour constancy at different liquor ratios

LR 5:1 Standard
LR 10:1 LR 20:1



4.0% Indanthren Navy SR Colloisol

Method: standard dyeing

 ... % dye
 2.0 g/l Dekol® SN
 1.0 g/l Trilon® TA Pdr.
 ... ml/l caustic soda 38 °Bé
 ... g/l hydrosulphite

45 min at 60 °C, IN
LR 10 : 1
Rinse, oxidise, soap

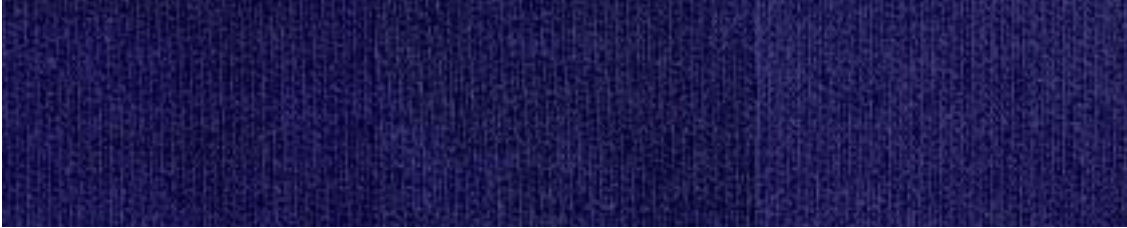
Fabric: CO knitgoods

Sensitivity of the sodium leuco compound to hard-water salts

400 mg/l $\text{CaCl}_2 \cdot \text{H}_2\text{O}$
(20 °dH)

Standard

880 mg/l $\text{MgSO}_4 \cdot \text{H}_2\text{O}$
(20 °dH)



4.0% Indanthren Navy SR Colloisol

Method: standard dyeing

... % dye
2.0 g/l Dekol SN
1.0 g/l Trilon TA Pdr.
... ml/l caustic soda 38 °Bé
... g/l hydrosulphite

45 min at 60 °C, IN
LR 10 : 1
Rinse, oxidise, soap

Fabric: CO knitgoods



Fastness properties Indanthren Navy SR Colloisol

Light fastness S.D.	1/12	1/6	1/3	1/1	2/1
Xenon, ISO 105-B02	4-5	5	5-6	6	7

Tested in 1/1 S.D. **Shade** **CO**

Water-spotting fastness (ISO 105-E07)

Evaluated after 2 min	4-5	
Evaluated after 10 min	4-5	
Evaluated after drying	5	

Wash fastness

Test 4, 95 °C (ISO 105-C04)	4-5	4-5
Peroxide, 95 °C (DIN 54008)	4-5	4-5

Fastness to chlorinated water

20 mg/l (ISO 105-E03)	4	
50 mg/l (ISO 105-E03)	4	
100 mg/l (ISO 105-E03)	4	

Boiling soda fastness

Without Ludigol® (ISO 105-X06)	4-5	4-5
With Ludigol (ISO 105-X06)	4-5	5

Peroxide bleaching fastness

Bath 2 (ISO 105-N02)	4	4-5
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Hypochlorite bleaching fastness

Severe (ISO 105-N01)	4-5	
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Indanthren range

Yellow 5GF Colloisol	Yellow T-5GF Colloisol liq
Yellow F3GC Colloisol	Yellow T-F3GC Colloisol liq
Yellow 3R Colloisol	–
Golden Yellow RK Colloisol	–
Golden Orange G Colloisol	–
Orange 3G Colloisol	Orange T-3G Colloisol liq
Brilliant Orange GR Colloisol	–
Orange RRTS gran	–
Scarlet GG Colloisol	–
Brilliant Red LGG Colloisol	Brilliant Red T-LGG Colloisol liq
Red FGL Colloisol	–
Red FBB Colloisol	Red T-FBB Colloisol liq
Brilliant Pink R Colloisol	Brilliant Pink T-R Colloisol liq
Rubine R Colloisol	–
Red Violet RRN Colloisol 01	–
Brilliant Violet RR Colloisol	–
Brilliant Violet 3B Colloisol	–
Violet B Colloisol	–
Brilliant Blue RCL gran	–
Blue RS Colloisol	Blue T-RS Colloisol liq
Blue BC Colloisol	Blue T-BC Colloisol liq
Blue CLF Colloisol	Blue T-CLF Colloisol liq
Brilliant Green FFB Colloisol	Brilliant Green T-FFB Colloisol liq
Olive Green B Colloisol	Olive Green T-B Colloisol liq
Olive MW Colloisol	Olive T-MW Colloisol liq
Olive R Colloisol	–
Olive T Colloisol	Olive T-T Colloisol liq
Brown BR Colloisol	Brown T-BR Colloisol liq
Brown RN Colloisol	Brown T-RN Colloisol liq
Brown 5170 Colloisol	Brown T-5170 Colloisol liq
Brown LBG Colloisol	Brown T-LBG Colloisol liq
–	Navy Blue T-RR Colloisol liq
Navy SR Colloisol	–
Dark Blue BOA Colloisol	–
Navy Blue BF Colloisol	–
Dark Blue DB Colloisol	Dark Blue T-DB Colloisol liq
Dark Blue 5508 gran	–
Navy Blue G Colloisol	Navy Blue T-G Colloisol liq
Grey 5607 Colloisol	–
Grey NC Colloisol	–
Direct Black RBS Colloisol	Direct Black T-RBS Colloisol liq
Direct Black RB Colloisol	–
Direct Black 5589 Colloisol	Direct Black T-5589 Colloisol liq
Black BB Colloisol	Black BB Colloisol liq

A full range of products, global service and ongoing innovation create tangible benefits for our customers. Worldwide.



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