

# RAL SHADES PIGMENTATION RECOMMENDATIONS FOR THE PAINT INDUSTRY





# Preface

## **VORWORT**

# The cards of the color register RAL 841-GL (high-gloss) served as samples for the colorimetric matching of the shades.

## A distinction was made with regard to the suitability of the individual pigment combinations for use in:

### 1. STOVING PAINTS (ALKYD-MELAMINE RESIN)

### 2. AIR-DRYING PAINTS (ALKYD RESIN, LONG-OIL)

In many cases, several pigmentation recommendations to meet different requirements are available for each shade.

The percentage amounts stated for the individual pigments may alter somewhat under the respective in-house conditions, above all due to variations in the dispersing conditions and differences in the wetting properties of various binders. Relevant corrections are therefore necessary as and when the occasion arises.

All shades were adjusted under standard illuminant D65 (total color difference  $\Delta E < 1$ ) compared to the original image of RAL-GL color collection.

The formulations are also suited for use with other binder systems.

All pigment combinations suitable for stoving paints can in principle also be used in 2-pack acrylic resin paints and in air-drying paints.

On the other hand, pigmentations formulated in air-drying alkyd resin paints must be confined to these paint systems, since they frequently contain pigments which are unsuitable for stoving systems and paint systems based on aromatic hydrocarbon solvents.

The pigmentation level stated corresponds in the case of the brilliant, saturated colors in the yellow-orange-red range (RAL 1000-2000-3000 series) to the maximum value that can be recommended taking gloss and flowability into account. The opacity of these shades often does not comply with the usual requirement of 40-50  $\mu\text{m}$ .

With the other shades, we have adjusted the pigmentation levels so as to give an opacity of approx. 35  $\mu\text{m}$ .

### TRADE NAMES / SUPPLIERS

Hansa®	Heubach Colorants Germany GmbH
Hostaperm® <sup>1</sup>	Heubach Colorants Germany GmbH
Novoperm®	Heubach Colorants Germany GmbH
Permanent	Heubach Colorants Germany GmbH
Bayferrox® <sup>2</sup>	Bayer AG
Colortherm® <sup>3</sup>	Lanxess Deutschland GmbH
COLOUR BLACK	Orion Engineered Carbons GmbH
Graphitan® <sup>4</sup>	BASF SE
Heliogen® <sup>4</sup>	BASF SE
Irgazin® <sup>4</sup>	BASF SE
Iriodin® <sup>5</sup>	Merck KGaA
Kronos® <sup>6</sup>	KRONOS TITAN GmbH
LAMP BLACK	Orion Engineered Carbons GmbH
Paliogen® <sup>4</sup>	BASF SE
Sicotan® <sup>4</sup>	BASF SE
Sicotrans® <sup>4</sup>	BASF SE

® Trademark of Heubach registered in many countries

<sup>1</sup> Registered trademark

<sup>2</sup> Product and service mark protected by Bayer AG, Leverkusen

<sup>3</sup> Product and service mark protected by Lanxess Deutschland GmbH

<sup>4</sup> Registered trademark of the BASF Group

<sup>5</sup> Registered trademark of Merck KGaA

<sup>6</sup> Product and service mark protected by KRONOS TITAN GmbH

# Zur farbmimetrischen Nachstellung der Farbtöne dienten als Vorlage die Karten des Farbregisters RAL 841-GL (hochglänzend).

## Es wurde eine Differenzierung vorgenommen hinsichtlich der Eignung der einzelnen Pigmentkombinationen für den Einsatz in:

### 1. EINBRENNLACKEN (ALKYD-MELAMINHARZ)

### 2. LUFTTROCKNENDEN LACKEN (ALKYDHARZ, LANGÖLIG)

Für jeden Farbton gibt es in vielen Fällen mehrere Pigmentierungsvorschläge, die unterschiedlichen Anforderungen gerecht werden.

Die angegebenen Mengenanteile der einzelnen Pigmente können sich unter den jeweiligen Praxisbedingungen etwas ändern, vor allem bedingt durch abweichende Dispergierbedingungen und unterschiedliche Benetzungseigenschaft verschiedener Bindemittel. Entsprechende Korrekturen sind somit von Fall zu Fall erforderlich.

Die Farbtöne wurden unter der Norm Lichtart D65 im Vergleich zu den original RAL-GL Vorlagen mit einem Gesamtfarbabstand von  $\Delta E < 1$  eingestellt.

Die Rezepte können auch auf andere Bindemittelsysteme übertragen werden.

Grundsätzlich sind alle für Einbrennlacke geeigneten Pigmentkonzentrationen auch in 2-K-Acrylharzlacken und in lufttrocknenden Lacken einsetzbar.

Andererseits müssen die in lufttrocknenden Alkydharzlacken ausgearbeiteten Pigmentierungen auf diese Lacksysteme beschränkt bleiben, da sie häufig Pigmente enthalten, die für Einbrennsysteme und Lacksysteme auf Basis aromatischer Kohlenwasserstoffe nicht geeignet sind.

Die angegebene Pigmentierungshöhe entspricht bei den brillanten, gesättigten Farben im Gelb-Orange-Rot-Bereich (RAL 1000-2000-3000-Reihe) dem Maximalwert der unter Berücksichtigung von Glanz und Fließfähigkeit empfohlen werden kann. Das Deckvermögen dieser Farbtöne erreicht häufig nicht die übliche Anforderung von 40-50  $\mu\text{m}$ .

Bei den übrigen Farbtönen haben wir die Pigmentierungshöhen so eingestellt, daß daraus ein Deckvermögen von ca. 35  $\mu\text{m}$  resultiert.

### MARKENNAMEN / LIEFERANTEN

Hansa®	Heubach Colorants Germany GmbH
Hostaperm® <sup>1</sup>	Heubach Colorants Germany GmbH
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Permanent	Heubach Colorants Germany GmbH
Bayferrox® <sup>2</sup>	Bayer AG
Colortherm® <sup>3</sup>	Lanxess Deutschland GmbH
COLOUR BLACK	Orion Engineered Carbons GmbH
Graphitan® <sup>4</sup>	BASF SE
Heliogen® <sup>4</sup>	BASF SE
Irgazin® <sup>4</sup>	BASF SE
Iriodin® <sup>5</sup>	Merck KGaA
Kronos® <sup>6</sup>	KRONOS TITAN GmbH
LAMP BLACK	Orion Engineered Carbons GmbH
Paliogen® <sup>4</sup>	BASF SE
Sicotan® <sup>4</sup>	BASF SE
Sicotrans® <sup>4</sup>	BASF SE

® Von Heubach in zahlreichen Ländern geschützte Produkt- und Servicemarken

<sup>1</sup> Registrierte Marke

<sup>2</sup> Produkt- und Servicemarke der Firma Bayer AG, Leverkusen

<sup>3</sup> Produkt- und Servicemarke der Firma Lanxess Deutschland GmbH

<sup>4</sup> Eingetragene Marke der BASF-Gruppe

<sup>5</sup> Eingetragene Marke von Merck KGaA

<sup>6</sup> Produkt- und Servicemarke der Firma KRONOS TITAN GmbH

For the following RAL shades, no recipe proposals are stated, as these shades are mainly formulated with inorganic pigments respectively partly with dyes.

Für folgende RAL-Farbtöne werden keine Rezeptvorschläge angegeben, da diese Farbtöne überwiegend mit anorganischen Pigmenten bzw. teilweise mit Farbstoffen formuliert sind.

#### **1000**

RAL 1026 Luminous yellow / Leuchtgelb  
RAL 1035 Perl beige / Perlbeige  
RAL 1036 Perl gold / Perlgold

#### **2000**

RAL 2005 Luminous orange / Leuchtorange  
RAL 2007 Luminous bright orange /  
Leuchthellorange

#### **3000**

RAL 3024 Luminous red / Leuchtrot  
RAL 3026 Luminous bright red / Leuchthellrot

#### **6000**

RAL 6038 Luminous green / Leuchtgrün

#### **7000**

RAL 7048 Perl mouse grey / Perlmausgrau

#### **9000**

RAL 9003 Signal white / Signalweiß  
RAL 9004 Signal black / Signalschwarz  
RAL 9005 Jet black / Tiefschwarz  
RAL 9006 White aluminium / Weißaluminium  
RAL 9007 Grey aluminium / Graualuminium  
RAL 9010 Pure white / Reinweiß  
RAL 9011 Graphite black / Graphitschwarz  
RAL 9016 Traffic white / Verkehrsweiß  
RAL 9017 Traffic black / Verkehrsschwarz  
RAL 9018 Papyrus white / Papyrusweiß  
RAL 9022 Perl light grey / Perlhellgrau  
RAL 9023 Perl dark grey / Perldunkelgrau

# RAL 1000 Colors

## RAL 1000 FARBTÖNE

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RAL 1023-GL	TRAFFIC YELLOW / VERKEHRSGELB	27
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RAL 1032-GL	BROOM YELLOW / GINSTERGELB	31
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# RAL 1000-GL

## GREEN BEIGE

### GRÜNBEIGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	6.13	65	high	
	Bayferrox 3920	6.67			
	Titanium dioxide Kronos 2310	87.07			
	COLOUR BLACK FW 200	0.13			
2	Hostaperm Yellow H4G	5.65	60	high	metamerism free
	Bayferrox 3920	5.90			
	Titanium dioxide Kronos 2310	88.31			
	COLOUR BLACK FW 200	0.14			
3	Hostaperm Yellow H4G 70	3.67	60	high	metamerism free
	Bayferrox 3920	6.81			
	Titanium dioxide Kronos 2310	89.37			
	COLOUR BLACK FW 200	0.15			
4	Hostaperm Yellow H4G-EDS	5.70	60	high	
	Bayferrox 3920	5.90			
	Titanium dioxide Kronos 2310	88.25			
	COLOUR BLACK FW 200	0.15			
5	Novoperm Yellow 5GD 71	2.28	65	medium	
	Bayferrox 3920	7.07			
	Titanium dioxide Kronos 2310	90.51			
	COLOUR BLACK FW 200	0.14			
6	Novoperm Yellow F2G	2.40	65	medium	
	Bayferrox 3920	7.29			
	Titanium dioxide Kronos 2310	90.16			
	COLOUR BLACK FW 200	0.15			
7	Hansa Brilliant Yellow 2GX 70-S	2.20	60	low	only for air-drying paints
	Bayferrox 3920	5.80			
	Titanium dioxide Kronos 2059	91.60			
	LAMP BLACK 101	0.40			



# RAL 1001-GL

## BEIGE BEIGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G Irgazin Yellow L 2060 Hostaperm Pink E Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	6.45 3.00 0.29 90.15 0.11	60	high	metamerism free
2	Bayferrox 3920 Bayferrox 105 M Titanium dioxide Kronos 2059 LAMP BLACK 101	11.83 0.37 87.57 0.23	60	high	

# RAL 1002-GL

## SAND YELLOW

## SANDGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	3.43 19.11 77.38 0.08	60	high	
2	Novoperm Yellow 5GD 71 Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	1.06 22.09 76.77 0.08	65	medium	
3	Novoperm Yellow F2G Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	1.38 23.40 75.14 0.08	65	medium	
4	Novoperm Yellow F2G-EDS Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	1.40 23.41 75.12 0.07	65	medium	
5	Hansa Brilliant Yellow 2GX 70-S Bayferrox 3920 Titanium dioxide Kronos 2059 LAMP BLACK 101	1.20 21.10 77.50 0.20	60	low	only for air-drying paints

# RAL 1003-GL

## SIGNAL YELLOW

## SIGNALGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Irgazin Yellow L 2060 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310	64.61 16.98 0.03 0.66 17.72	20	high	metamerism free
2	Hostaperm Yellow H4G 70 Novoperm Yellow M2R 70 Bayferrox 3920 Titanium dioxide Kronos 2310	67.89 6.10 9.22 16.79	25	high	
3	Hostaperm Yellow H4G Novoperm Yellow HR 71 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310	50.96 15.17 0.02 9.20 24.65	25	high	
4	Hostaperm Yellow H4G-EDS Novoperm Yellow HR 70-EDS Bayferrox 3920 Titanium dioxide Kronos 2310	51.00 15.20 9.20 24.60	25	high	
5	Novoperm Yellow 5GD 71 Novoperm Yellow M2R 70 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310	57.52 5.41 0.01 8.47 28.59	30	medium	
6	Novoperm Yellow F2G Novoperm Yellow HR 71 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310	39.75 19.60 0.03 5.92 34.70	30	medium	
7	Hansa Brilliant Yellow 2GX 70-S Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2059	49.79 1.16 7.73 41.32	30	low	only for air-drying paints
8	Hansa Brilliant Yellow 2GX 70-S Hansa Red GG Bayferrox 3920 Titanium dioxide Kronos 2059	49.23 1.21 8.69 40.87	30	low	only for air-drying paints

# RAL 1004-GL

## GOLDEN YELLOW

## GOLDGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Irgazin Yellow L 2060 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310	58.82 13.71 0.07 11.67 15.73	25	high	metamerism free
2	Hostaperm Yellow H4G Novoperm Yellow HR 71 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310	56.78 8.34 0.04 19.24 15.60	25	high	metamerism free
3	Hostaperm Yellow H4G-EDS Novoperm Yellow HR 71-EDS Bayferrox 3920 Titanium dioxide Kronos 2310	56.80 8.30 19.30 15.60	25	high	
4	Hostaperm Yellow H4G 70 Novoperm Yellow M2R 70 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310	63.19 4.46 0.04 18.20 14.11	25	high	
5	Novoperm Yellow F2G Novoperm Yellow HR 71 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310	42.60 9.75 0.05 16.78 30.82	30	medium	
6	Hansa Brilliant Yellow 2GX 70-S Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2059	40.55 0.32 25.08 34.05	35	low	only for air-drying paints

# RAL 1005-GL

## HONEY YELLOW

## HONIGGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Novoperm Yellow HR 71 Bayferrox 3920 COLOUR BLACK FW 200	70.49 14.39 14.99 0.13	25	high	
2	Hostaperm Yellow H4G-EDS Novoperm Yellow HR 71-EDS Bayferrox 3920 COLOUR BLACK FW 200	70.48 14.20 15.19 0.13	25	high	
3	Hostaperm Yellow H4G 70 Novoperm Yellow M2R 70 Bayferrox 3920 COLOUR BLACK FW 200	80.17 8.64 11.04 0.15	20	high	
4	Novoperm Yellow F2G Novoperm Yellow HR 71 Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	66.10 5.79 21.37 6.67 0.07	25	medium	
5	Novoperm Yellow 5GD 71 Novoperm Yellow HR 71 Bayferrox 3920 COLOUR BLACK FW 200	73.02 16.40 10.48 0.10	25	medium	
6	Hansa Brilliant Yellow 2GX 70-S Novoperm Orange HL 70 Bayferrox 3920 LAMP BLACK 101	70.82 2.40 26.46 0.32	25	low	only for air-drying paints

# RAL 1006-GL

## MAIZE YELLOW

## MAISGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Novoperm Orange H5G 70 Sicotan Yellow L 1910 Bayferrox 3920 Titanium dioxide Kronos 2310	55.12 7.56 23.62 13.23 0.47	30	high	metamerism free
2	Hostaperm Yellow H4G Novoperm Yellow HR 71 Hostaperm Scarlet GO Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	77.52 9.88 1.13 11.42 0.05	25	high	metamerism free
3	Hostaperm Yellow H4G Novoperm Yellow HR 71 Sicotan Yellow L 1910 Bayferrox 3920	33.00 17.60 38.80 10.60	35	high	
4	Hostaperm Yellow H4G 70 Novoperm Yellow M2R 70 Sicotan Yellow L 1910 Bayferrox 3920	35.85 5.89 48.01 10.25	35	high	
5	Hostaperm Yellow H4G-EDS Novoperm Yellow M2R 70-EDS Bayferrox 3920 Titanium dioxide Kronos 2310	56.84 11.85 24.83 6.48	35	high	
6	Novoperm Yellow F2G Novoperm Yellow M2R 70 Bayferrox 3920 Titanium dioxide Kronos 2310	40.75 11.98 18.52 28.75	30	medium	
7	Novoperm Yellow F2G Novoperm Yellow HR 71 Bayferrox 3920 Titanium dioxide Kronos 2310	25.18 25.56 27.56 21.70	30	medium	
8	Hansa Brilliant Yellow 2GX 70-S Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2059	55.17 3.15 18.68 26.00	30	low	only for air-drying paints

# RAL 1007-GL

## DAFFODIL YELLOW

## NARZISSENGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	20.32	25	high	
	Novoperm Yellow HR 71	47.53			
	Sicotan Yellow L 1910	32.12			
	COLOUR BLACK FW 200	0.03			
2	Hostaperm Yellow H4G	6.27	30	high	
	Novoperm Yellow HR 71	60.09			
	Sicotan Yellow L 1910	33.60			
	COLOUR BLACK FW 200	0.04			
3	Hostaperm Yellow H4G 70	48.27	25	high	
	Novoperm Yellow M2R 70	31.03			
	Bayferrox 3920	20.69			
	COLOUR BLACK FW 200	0.01			
4	Hostaperm Yellow H4G-EDS	60.97	25	high	
	Novoperm Yellow M2R 70-EDS	22.18			
	Bayferrox 3920	16.85			
5	Novoperm Yellow F2G	61.20	25	medium	
	Novoperm Yellow M2R 70	20.19			
	Bayferrox 3920	12.62			
	Titanium dioxide Kronos 2310	5.99			
6	Novoperm Yellow F2G	14.21	25	medium	
	Novoperm Yellow HR 71	56.86			
	Bayferrox 3920	18.48			
	Titanium dioxide Kronos 2310	10.45			

# RAL 1011-GL

## BROWN BEIGE

## BRAUNBEIGE

<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx. %]		
1	Bayferrox 3920	51.72	15	medium	
	Bayferrox 130 BM	2.47			
	Titanium dioxide Kronos 2310	45.62			
	COLOUR BLACK FW 200	0.19			



# RAL 1012-GL

## LEMON YELLOW

## ZITRONENGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G	44.72	35	high	metamerism free
	Bayferrox 3920	12.02			
	Titanium dioxide Kronos 2310	43.21			
	COLOUR BLACK FW 200	0.05			
2	Hostaperm Yellow H4G-EDS	40.47	35	high	
	Bayferrox 3920	15.07			
	Titanium dioxide Kronos 2310	44.41			
	COLOUR BLACK FW 200	0.05			
3	Hostaperm Yellow H4G 70	44.91	35	high	
	Novoperm Yellow M2R 70	0.21			
	Bayferrox 3920	13.09			
	Titanium dioxide Kronos 2310	41.74			
4	Hostaperm Yellow H4G	26.20	50	high	
	Hostaperm Green GNX	0.10			
	Sicotan Yellow L 1910	33.40			
	Bayferrox 3920	7.00			
5	Novoperm Yellow 5GD 71	34.33	35	medium	
	Bayferrox 3920	12.00			
	Titanium dioxide Kronos 2310	53.61			
	COLOUR BLACK FW 200	0.06			
6	Novoperm Yellow F2G	30.83	40	medium	
	Bayferrox 3920	13.84			
	Titanium dioxide Kronos 2310	55.27			
	COLOUR BLACK FW 200	0.06			

# RAL 1013-GL

## OYSTER WHITE

### PERLWEISS

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx. %]		
1	Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	1.14 98.83 0.03	85	high	metamerism free

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# RAL 1014-GL

## IVORY

## ELFENBEIN

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Oxide Yellow BV 02	1.25	80	high	metamerism free
	Bayferrox 3920	6.86			
	Titanium dioxide Kronos 2310	91.85			
	COLOUR BLACK FW 200	0.05			

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# RAL 1015-GL

## LIGHT IVORY

### HELLELFENBEIN

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx. %]		
1	Bayferrox 3920	2.54	80	high	metamerism free
	Bayferrox 130 BM	0.03			
	Titanium dioxide Kronos 2310	97.41			
	COLOUR BLACK FW 200	0.02			

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# RAL 1016-GL

## SULFUR YELLOW

## SCHWEFELGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H6G	30.63	50	high	
	Hostaperm Green GNX	0.02			
	Hostaperm Oxide Yellow BV 02	12.25			
	Titanium dioxide Kronos 2310	57.10			
2	Hostaperm Yellow H3G	0.45	70	high	
	Hostaperm Oxide Yellow BV 02	64.34			
	Titanium dioxide Kronos 2310	35.21			
3	Hostaperm Oxide Yellow BV 02	65.31	60	high	
	Bayferrox 3920	0.39			
	Titanium dioxide Kronos 2310	34.30			
4	Novoperm Yellow H10G 01	4.66	55	medium	metamerism free
	Hostaperm Green GNX	0.02			
	Hostaperm Oxide Yellow BV 02	64.78			
	Titanium dioxide Kronos 2310	30.54			
5	Hansa Yellow 10G	39.70	35	low	only for air-drying paints
	Hostaperm Green GNX	0.01			
	Bayferrox 3920	0.53			
	Titanium dioxide Kronos 2059	59.76			

# RAL 1017-GL

## SAFFRON YELLOW

## SAFRANGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G Irgazin Yellow L 2060 Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	10.01 19.78 0.50 69.69 0.02	40	high	metamerism free
2	Hostaperm Yellow H4G 70 Novoperm Yellow M2R 70 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	7.80 5.37 38.99 47.83 0.01	50	medium	
3	Hostaperm Yellow H4G Novoperm Yellow HR 71 Bayferrox 105 M Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	9.66 12.05 1.16 77.12 0.01	50	medium	
4	Novoperm Yellow 5GD 71 Novoperm Yellow M2R 70 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	4.29 5.77 37.95 51.98 0.01	55	medium	
5	Novoperm Yellow F2G Novoperm Orange HL 70 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310	15.07 3.04 13.73 68.16	55	medium	
6	Novoperm Yellow HR 71 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2059	13.25 1.08 17.29 68.38	45	medium	

# RAL 1018-GL

## ZINC YELLOW

## ZINKGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G Bayferrox 3920 Titanium dioxide Kronos 2310	42.16 2.52 55.32	45	high	
2	Novoperm Yellow 5GD 71 Bayferrox 3920 Titanium dioxide Kronos 2310	23.05 4.28 72.67	45	medium	
3	Novoperm Yellow F2G Bayferrox 3920 Titanium dioxide Kronos 2310	21.36 3.53 75.11	50	medium	
4	Novoperm Yellow F2G-EDS Bayferrox 3920 Titanium dioxide Kronos 2310	21.40 3.50 75.10	50	medium	
5	Hansa Brilliant Yellow 2GX 70-S Bayferrox 3920 Titanium dioxide Kronos 2059 LAMP BLACK 101	24.67 0.69 74.62 0.02	45	low	only for air-drying paints

# RAL 1019-GL

## GREY BEIGE

## GRAUBEIGE

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx. %]		
1	Bayferrox 3920	14.65	55	high	
	Bayferrox 130 BM	2.75			
	Titanium dioxide Kronos 2310	82.07			
	COLOUR BLACK FW 200	0.53			

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# RAL 1020-GL

## OLIVE YELLOW

### OLIVGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow HR 71	2.64	50	high	metamerism free
	Hostaperm Oxide Yellow BV 02	12.07			
	Bayferrox 3920	14.19			
	Titanium dioxide Kronos 2310	70.47			
	COLOUR BLACK FW 200	0.63			

# RAL 1021-GL

## RAPE YELLOW

### RAPSGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Irgazin Yellow L 2060 Hostaperm Oxide Yellow BV 02 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	81.27 3.70 11.16 3.86 0.01	25	high	metamerism free
2	Hostaperm Yellow H4G Irgazin Yellow L 2060 Hostaperm Oxide Yellow BV 02 COLOUR BLACK FW 200	72.98 3.17 23.84 0.01	25	high	
3	Hostaperm Yellow H4G 70 Irgazin Yellow L 2060 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	93.98 3.10 2.90 0.02	20	high	
4	Hostaperm Yellow H4G 70 Novoperm Yellow M2R 70 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	96.75 2.02 1.21 0.02	20	medium	
5	Novoperm Yellow F2G Novoperm Yellow HR 71 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	76.94 0.86 22.19 0.01	25	medium	
6	Novoperm Yellow F2G-EDS Novoperm Yellow HR 71-EDS Titanium dioxide Kronos 2310	77.80 0.90 21.30	25	medium	

# RAL 1023-GL

## TRAFFIC YELLOW

### VERKEHRSGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Sicotan Yellow L 1910 Titanium dioxide Kronos 2310	75.36 16.51 8.13	25	high	metamerism free
2	Novoperm Yellow F2G Novoperm Yellow HR 71 Bayferrox 3920 Titanium dioxide Kronos 2310	59.33 1.98 0.74 37.95	30	medium	
3	Novoperm Yellow 5GD 71 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	73.02 11.41 15.56 0.01	20	medium	
4	Hansa Brilliant Yellow 2GX 70-S Sicotan Yellow L 1910 Titanium dioxide Kronos 2059 LAMP BLACK 101	54.55 17.50 27.93 0.02	30	low	only for air-drying paints

# RAL 1024-GL

## OCHRE YELLOW

## OCKERGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G Irgazin Yellow L 2060 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	5.15 15.14 29.38 49.96 0.37	40	high	metamerism free
2	Hostaperm Yellow H3G Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	7.44 49.40 42.96 0.20	50	high	
3	Novoperm Yellow F2G Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	3.84 45.40 50.54 0.22	50	medium	
4	Novoperm Yellow 5GD 71 Novoperm Yellow HR 71 Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	1.79 33.50 2.93 61.49 0.29	50	medium	
5	Hansa Brilliant Yellow 2GX 70-S Bayferrox 3920 Titanium dioxide Kronos 2059 LAMP BLACK 101	2.84 47.45 49.02 0.69	45	low	only for air-drying paints

# RAL 1027-GL

## CURRY

## CURRYGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	40.29 0.13 52.58 5.33 1.67	30	high	metamerism free
2	Hostaperm Yellow H4G 70 Novoperm Yellow HR 71 Hostaperm Green GNX Bayferrox 3920 COLOUR BLACK FW 200	41.19 2.50 0.26 55.90 0.15	30	medium	
3	Novoperm Yellow 5GD 71 Novoperm Yellow HR 71 Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	45.21 2.14 0.16 45.91 6.35 0.23	25	medium	
4	Novoperm Yellow F2G Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	35.59 0.22 52.76 11.30 0.13	35	medium	
5	Hansa Brilliant Yellow 2GX 70-S Bayferrox 3920 Titanium dioxide Kronos 2059 COLOUR BLACK FW 200	37.41 51.45 10.82 0.32	35	low	only for air-drying paints

# RAL 1028-GL

## MELON YELLOW

## MELONENGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow HR 71 Hostaperm Oxide Yellow BV 02 Bayferrox 3920 Titanium dioxide Kronos 2310	57.89 33.24 1.32 7.55	30	high	
2	Hostaperm Yellow H4G Novoperm Yellow M2R 70 Titanium dioxide Kronos 2310	64.44 25.75 9.81	25	high	
3	Hostaperm Yellow H4G-EDS Novoperm Yellow M2R 70-EDS Titanium dioxide Kronos 2310	65.10 26.00 8.90	25	high	
4	Novoperm Yellow H4G 70 Novoperm Yellow M2R 70 Bayferrox 3920	73.94 24.95 1.11	20	high	
5	Novoperm Yellow 5GD 71 Novoperm Yellow HR 71 Bayferrox 3920 Titanium dioxide Kronos 2310	45.92 48.57 2.21 3.30	20	medium	
6	Novoperm Yellow F2G Novoperm Yellow HR 71 Bayferrox 3920 Titanium dioxide Kronos 2310	23.00 52.05 1.14 23.81	25	medium	

# RAL 1032-GL

## BROOM YELLOW

## GINSTERGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G	44.90	35	high	metamerism free
	Hostaperm Scarlet GO	0.26			
	Hostaperm Green GNX	0.08			
	Sicotan Yellow L 1910	42.68			
	Bayferrox 3920	5.11			
	Titanium dioxide Kronos 2310	6.97			
2	Hostaperm Yellow H4G	46.50	30	high	
	Sicotan Yellow L 1910	20.44			
	Bayferrox 3920	20.78			
	Titanium dioxide Kronos 2310	12.27			
	COLOUR BLACK FW 200	0.01			
3	Hostaperm Yellow H4G	54.45	30	high	
	Bayferrox 3920	28.31			
	Titanium dioxide Kronos 2310	17.24			
4	Hostaperm Yellow H4G 70	35.80	35	high	
	Sicotan Yellow L 1910	52.46			
	Bayferrox 3920	6.91			
	Titanium dioxide Kronos 2310	4.81			
	COLOUR BLACK FW 200	0.02			
5	Novoperm Yellow 5GD 71	40.21	35	medium	
	Bayferrox 3920	25.06			
	Titanium dioxide Kronos 2310	34.72			
	COLOUR BLACK FW 200	0.01			
6	Novoperm Yellow F2G	39.64	35	medium	
	Bayferrox 3920	25.96			
	Titanium dioxide Kronos 2310	34.40			
7	Novoperm Yellow F2G	39.64	35	medium	
	Bayferrox 3920	25.96			
	Titanium dioxide Kronos 2310	34.40			

# RAL 1033-GL

## DAHLIA YELLOW

## DAHLIENGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow HR 71 Hostaperm Oxide Yellow BV 02 Bayferrox 3920 Titanium dioxide Kronos 2310	57.89 33.24 1.32 7.55	30	medium	
2	Hostaperm Yellow H4G 70 Novoperm Yellow M2R 70 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310	20.37 11.32 51.09 17.22	40	medium	
3	Novoperm Yellow 5GD 71 Novoperm Yellow HR 71 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310	7.13 17.57 57.30 18.00	45	medium	
4	Novoperm Yellow F2G Novoperm Yellow HR 71 Bayferrox 3920 Titanium dioxide Kronos 2310	23.00 52.05 1.14 23.81	25	medium	
5	Novoperm Yellow F2G Novoperm Yellow HR 71 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310	7.09 17.85 54.75 20.31	45	medium	
6	Hansa Brilliant Yellow 2GX 70-S Novoperm Yellow HR 71 Hansa Red GG Bayferrox 3920 Titanium dioxide Kronos 2059	27.02 7.83 2.32 7.32 55.51	40	low	only for air-drying paints
7	Hansa Brilliant Yellow 2GX 70-S Novoperm Yellow HR 71 Hansa Red GG Bayferrox 3920 Titanium dioxide Kronos 2059	27.02 7.83 2.32 7.32 55.51	40	low	only for air-drying paints



# RAL 1034-GL

## PASTEL YELLOW

## PASTELGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	10.66	40	high	
	Irgazin Yellow L 2060	15.45			
	Bayferrox 105 M	1.06			
	Bayferrox 130 BM	0.85			
	Sicotan Yellow L 1910	2.02			
	Titanium dioxide Kronos 2310	69.96			
2	Hostaperm Yellow H4G	13.03	45	high	
	Novoperm Orange H5G 70	11.16			
	Sicotan Yellow L 1910	13.87			
	Bayferrox 160 M	2.00			
	Titanium dioxide Kronos 2310	59.94			
3	Novoperm Yellow F2G	13.45	55	medium	
	Novoperm Orange HL 70	4.96			
	Bayferrox 3920	7.67			
	Titanium dioxide Kronos 2310	73.92			
4	Hansa Brilliant Yellow 2GX 70-S	16.57	50	low	only for air-drying paints
	Novoperm Orange HL 70	5.54			
	Titanium dioxide Kronos 2059	77.81			
	LAMP BLACK 101	0.08			

# RAL 1037-GL

## SUN YELLOW

## SONNENGELB

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Novoperm Yellow M2R 70 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310	46.22 16.92 0.81 12.54 23.51	30	medium	
2	Hostaperm Yellow H4G 70 Novoperm Yellow M2R 70 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310	52.62 15.62 1.50 10.53 19.73	25	medium	
3	Hostaperm Yellow H4G-EDS Novoperm Yellow M2R 70-EDS Novoperm Orange HL 70-EDS Bayferrox 3920 Titanium dioxide Kronos 2310	47.90 17.60 0.90 11.60 22.00	25	medium	
4	Hostaperm Yellow H4G Irgazin Yellow L 2060 Bayferrox 3920 Titanium dioxide Kronos 2310	28.68 34.56 10.29 26.47	25	medium	
5	Novoperm Yellow 5GD 71 Novoperm Yellow M2R 70 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	45.93 19.38 0.93 6.82 26.91 0.03	25	medium	
6	Novoperm Yellow F2G Novoperm Yellow M2R 70 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	41.62 18.21 0.97 7.98 31.20 0.02	25	medium	

# RAL 2000 Colors

## RAL 2000 FARBTÖNE

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# RAL 2000-GL

## YELLOW ORANGE

## GELBORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G	42.92	20	high	
	Novoperm Yellow HR 71	40.67			
	Hostaperm Red E2B 70	2.10			
	Bayferrox 3920	13.30			
	Titanium dioxide Kronos 2310	1.01			
2	Hostaperm Yellow H4G 70	43.41	25	high	
	Novoperm Yellow HR 71	40.73			
	Hostaperm Red E2B 70	2.43			
	Bayferrox 3920	12.52			
	Titanium dioxide Kronos 2310	0.91			
3	Hostaperm Red E5B 02	1.72	25	medium	
	Novoperm Yellow F2G	32.99			
	Novoperm Yellow HR 71	45.31			
	Bayferrox 3920	10.19			
	Titanium dioxide Kronos 2310	9.79			
4	Novoperm Yellow M2R 70	59.47	30	medium	
	Novoperm Orange HL 70	10.22			
	Bayferrox 3920	23.92			
	Titanium dioxide Kronos 2310	6.39			
5	Novoperm Yellow M2R 70-EDS	61.20	30	medium	
	Novoperm Orange HL 70-EDS	10.50			
	Bayferrox 3920	22.30			
	Titanium dioxide Kronos 2310	6.00			
6	Novoperm Yellow HR 71	56.87	29	medium	
	Novoperm Orange HL 70	11.49			
	Bayferrox 3920	22.00			
	Titanium dioxide Kronos 2310	9.64			
7	Hansa Brilliant Yellow 2GX 70-S	76.30	20	low	only for air-drying paints
	Permanent Red FGR	3.70			
	Bayferrox 3920	11.60			
	Titanium dioxide Kronos 2059	8.40			

# RAL 2001-GL

## RED ORANGE

## ROTORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	49.98 42.34 7.58 0.10	40	high	metamerism free
2	Hostaperm Yellow H4G Novoperm Orange HL 70 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	23.25 52.26 11.28 13.12 0.09	30	high	metamerism free
3	Novoperm Yellow M2R 70 Novoperm Orange HL 70 Sicotan Yellow L 1910 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	1.63 45.66 50.31 2.30 0.10	35	medium	
4	Novoperm Yellow HR 71 Novoperm Orange HL 70 Bayferrox 130 BM Titanium dioxide Kronos 2310	24.23 48.06 6.67 21.04	30	medium	
5	Hansa Brilliant Yellow 2GX 70-S Permanent Orange RL 70 Bayferrox 130 BM Titanium dioxide Kronos 2059	39.84 28.02 10.58 21.56	30	low	only for air-drying paints

# RAL 2002-GL

## VERMILION

### BLUTORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	47.33	30	high	metamerism free
	Hostaperm Red E2B 70	12.67			
	Sicotan Yellow L 1910	39.59			
	Titanium dioxide Kronos 2310	0.41			
2	Novoperm Orange HL 70	74.96	30	high	metamerism free
	Hostaperm Red E2B 70	6.06			
	Bayferrox 3920	8.73			
	Titanium dioxide Kronos 2310	10.25			
3	Novoperm Orange HL 70-EDS	82.10	30	medium	
	Hostaperm Pink E-EDS	2.20			
	Bayferrox 3920	2.70			
	Titanium dioxide Kronos 2310	12.98			
	COLOUR BLACK FW 200	0.02			
4	Novoperm Red HF3S 70	69.03	25	medium	
	Sicotan Yellow L 1910	20.77			
	Titanium dioxide Kronos 2310	10.12			
	COLOUR BLACK FW 200	0.08			
5	Hansa Red GG	78.66	20	low	only for air-drying paints
	Permanent Bordeaux FGR	2.22			
	Bayferrox 130 BM	0.71			
	Titanium dioxide Kronos 2059	18.41			
6	Permanent Orange RL 70	60.86	30	low	only for air-drying paints
	Permanent Bordeaux FGR	4.06			
	Bayferrox 3920	32.18			
	Titanium dioxide Kronos 2059	2.90			

# RAL 2003-GL

## PASTEL ORANGE

## PASTELLORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow M2R 70 Novoperm Orange HL 70 Titanium dioxide Kronos 2310	29.61 14.43 55.96	40	high	
2	Novoperm Orange H5G 70 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310	46.40 5.60 2.90 45.10	40	medium	
3	Hansa Brilliant Yellow 2GX 70-S Permanent Orange RL 70 Bayferrox 3920 Titanium dioxide Kronos 2059	37.35 7.66 2.15 52.84	45	low	only for air-drying paints

# RAL 2004-GL

## PURE ORANGE

## REINORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange H5G 70 Hostaperm Scarlet GO Bayferrox 3920 Titanium dioxide Kronos 2310	82.25 11.57 1.84 4.34	25	high	
2	Novoperm Orange H5G 70 Novoperm Red HF3S 70 Bayferrox 3920 Titanium dioxide Kronos 2310	80.27 12.22 2.79 4.72	25	medium	
3	Novoperm Orange H5G 70 Novoperm Red HF3S 70 Sicotan Yellow L 1910	57.85 13.22 28.93	25	medium	
4	Hansa Brilliant Yellow 2GX 70-S Hansa Red GG Titanium dioxide Kronos 2059	39.21 44.23 16.56	20	low	only for air-drying paints



# RAL 2008-GL

## BRIGHT RED ORANGE

## HELLROTORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow M2R 70 Novoperm Orange HL 70 Titanium dioxide Kronos 2310	40.54 23.42 36.04	30	high	
2	Novoperm Orange H5G 70 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310	66.12 7.26 3.97 22.65	30	medium	
3	Hansa Brilliant Yellow 2GX 70-S Permanent Orange RL 70 Bayferrox 3920 Titanium dioxide Kronos 2059	52.78 11.04 3.15 33.03	30	low	only for air-drying paints

# RAL 2009-GL

## TRAFFIC ORANGE

### VERKEHRSORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow M2R 70 Novoperm Orange HL 70 Titanium dioxide Kronos 2310	43.12 47.43 9.45	30	high	
2	Novoperm Yellow HR 71-EDS Novoperm Orange HL 70-EDS Titanium dioxide Kronos 2310	46.60 38.70 14.70	30	high	
3	Hostaperm Red E2B 70 Novoperm Orange H5G 70 Bayferrox 3920 Titanium dioxide Kronos 2310	3.45 88.24 5.92 2.39	25	high	
4	Novoperm Red HF3S 70 Novoperm Yellow HR 71 Bayferrox 3920 Titanium dioxide Kronos 2310	19.57 57.23 8.65 14.55	25	medium	
5	Hansa Brilliant Yellow 2GX 70-S Permanent Orange RL 70 Bayferrox 3920 Titanium dioxide Kronos 2059	61.95 23.99 10.72 3.34	25	low	only for air-drying paints

# RAL 2010-GL

## SIGNAL ORANGE

## SIGNALORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow M2R 70 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310	27.74 32.22 22.00 18.04	35	high	
2	Novoperm Orange H5G 70 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310	54.56 18.01 22.12 5.31	30	high	
3	Novoperm Yellow HR 71 Novoperm Orange HL 70 Bayferrox 3920 Titanium dioxide Kronos 2310	35.63 30.87 17.09 16.41	30	medium	
4	Novoperm Yellow HR 71 Novoperm Red HF3S 70 Bayferrox 3920 Titanium dioxide Kronos 2310	47.50 15.20 29.06 8.24	30	medium	
5	Hansa Red GG Hansa Brilliant Yellow 2GX 70-S Bayferrox 3920 Titanium dioxide Kronos 2059	33.93 33.95 22.19 9.93	25	low	only for air-drying paints

# RAL 2011-GL

## DEEP ORANGE

### TIEFORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	6.80	40	medium	metamerism free
	Novoperm Yellow HR 71	15.20			
	Novoperm Orange HL 70	14.30			
	Sicotan Yellow L 1910	52.30			
	Titanium dioxide Kronos 2310	11.40			
2	Novoperm Yellow HR 71	17.70	40	medium	
	Novoperm Orange HL 70	13.70			
	Sicotan Yellow L 1910	58.70			
	Titanium dioxide Kronos 2310	9.90			
3	Novoperm Yellow M2R 70	27.37	40	medium	metamerism free
	Novoperm Orange HL 70	14.90			
	Sicotan Yellow L 1910	29.28			
	Titanium dioxide Kronos 2310	28.45			
4	Novoperm Yellow HR 71	43.60	30	medium	
	Novoperm Orange HL 70	14.50			
	Bayferrox 3920	6.39			
	Titanium dioxide Kronos 2310	35.51			
5	Novoperm Yellow HR 71-EDS	43.00	30	medium	
	Novoperm Orange HL 70-EDS	15.70			
	Bayferrox 3920	6.30			
	Titanium dioxide Kronos 2310	35.00			
6	Hansa Brilliant Yellow 2GX 70-S	32.50	30	low	only for air-drying paints
	Hansa Red GG	15.00			
	Bayferrox 3920	11.60			
	Titanium dioxide Kronos 2059	40.90			

# RAL 2012-GL

## SALMON ORANGE

## LACHSORANGE

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	38.74 61.23 0.03	50	high	
2	Hansa Brilliant Yellow 2GX 70-S Hansa Red GG Hansa Red 3B Titanium dioxide Kronos 2059 LAMP BLACK 101	6.16 19.42 3.40 70.87 0.15	35	low	metamerism free

# RAL 2013-GL

## PERL ORANGE

## PERLORANGE

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Recipe number	FORMULATION	Parts	Pigmentation level related to solid binder	Durability	Remarks
		[%]	[approx.%]		
1	Hostaperm Orange GR	22.53	35	high	
	Paliogen Maroon L 3920	9.58			
	Iriodin 9502 WR Red Brown	65.37			
	COLOR BLACK FW 200	2.52			

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# RAL 3000 Colors

## RAL 3000 FARBTÖNE

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RAL 3005-GL	WINE RED / WEINROT	53
RAL 3007-GL	BLACK RED / SCHWARZROT	54
RAL 3009-GL	OXIDE RED / OXIDROT	55
RAL 3011-GL	BROWN RED / BRAUNROT	56
RAL 3012-GL	BEIGE RED / BEIGEROT	57
RAL 3013-GL	TOMATO RED / TOMATENROT	58
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# RAL 3000-GL

## FLAME RED

## FEUERROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Hostaperm Red E2B 70 Bayferrox 130 BM Titanium dioxide Kronos 2310	51.98 31.37 5.84 10.81	25	high	metamerism free
2	Novoperm Orange HL 70 Hostaperm Red D3G 70 Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	54.47 20.85 10.26 14.41 0.01	30	high	
3	Novoperm Yellow M2R 70-EDS Hostaperm Red D3G 70-EDS Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	31.40 43.00 11.50 14.08 0.02	25	high	
4	Novoperm Orange HL 70 Novoperm Red F2RK 70 Bayferrox 130 BM Titanium dioxide Kronos 2310	47.58 27.73 9.52 15.17	30	medium	
5	Hostaperm Pink E Novoperm Red HF3S 70 Bayferrox 130 BM Titanium dioxide Kronos 2310	7.75 69.85 6.68 15.72	25	medium	
6	Novoperm Yellow F2G Novoperm Red F2RK 70 Bayferrox 130 BM Titanium dioxide Kronos 2310	35.95 38.69 8.21 17.15	25	medium	
7	Hansa Brilliant Yellow 2GX 70-S Permanent Red FGR 70 Bayferrox 130 BM Titanium dioxide Kronos 2059	8.57 59.22 13.82 18.39	25	low	only for air-drying paints
8	Hansa Red GG Hansa Red B Bayferrox 130 BM Titanium dioxide Kronos 2059	25.14 44.85 9.79 20.22	25	low	only for air-drying paints



# RAL 3001-GL

## SIGNAL RED

## SIGNALROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Hostaperm Red D2G 70 Hostaperm Red E3B Bayferrox 130 BM Titanium dioxide Kronos 2310	33.56 24.96 32.70 7.75 1.03	20	high	metamerism free
2	Novoperm Orange HL 70 Hostaperm Red D2G 70 Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	9.89 73.46 10.12 6.46 0.07	20	high	
3	Novoperm Orange HL 70-EDS Hostaperm Red D3G 70-EDS Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	9.60 72.30 14.10 3.98 0.02	20	high	
4	Novoperm Orange HL 70 Novoperm Red F2RK 70 Bayferrox 130 BM Titanium dioxide Kronos 2310	10.73 71.56 14.68 3.03	25	medium	metamerism free
5	Permanent Red FGR 70 Permanent Bordeaux FGR Bayferrox 130 BM Titanium dioxide Kronos 2059	72.97 9.68 11.41 5.94	20	low	only for air-drying paints

# RAL 3002-GL

## CARMINE RED

### KARMINROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	68.18	20	high	
	Hostaperm Pink E	21.80			
	Titanium dioxide Kronos 2310	9.98			
	COLOUR BLACK FW 200	0.04			
2	Novoperm Orange HL 70	27.50	20	high	
	Hostaperm Red E2B 70	63.60			
	Bayferrox 130 BM	5.60			
	Titanium dioxide Kronos 2310	3.30			
3	Novoperm Red HF3S 70	84.43	25	high	
	Hostaperm Red Violet ER 02	5.34			
	Titanium dioxide Kronos 2310	10.19			
	COLOUR BLACK FW 200	0.04			
4	Permanent Red FGR 70	64.68	25	low	only for air-drying paints
	Permanant Bordeaux FGR	9.86			
	Bayferrox 130 BM	8.19			
	Titanium dioxide Kronos 2059	17.27			

# RAL 3003-GL

## RUBY RED

## RUBINROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Hostaperm Pink E Bayferrox 130 BM Titanium dioxide Kronos 2310	52.39 43.45 3.26 0.90	15	high	
2	Novoperm Red HF3S 70 Hostaperm Red Violet ER 02 Bayferrox 130 BM Titanium dioxide Kronos 2310	75.92 14.14 2.09 7.85	20	high	
3	Hostaperm Red D3G 70 Hostaperm Red Violet ER 02 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	70.25 20.93 8.78 0.04	15	high	
4	Novoperm Red F3RK 70 Hostaperm Red Violet ER 02 Bayferrox 130 BM Titanium dioxide Kronos 2310	64.21 23.21 3.05 9.53	15	medium	
5	Permanent Red FGR 70 Permanent Bordeaux FGR Bayferrox 130 BM Titanium dioxide Kronos 2059	40.50 40.07 10.59 8.84	15	low	only for air-drying paints
6	Hansa Red 3B Permanent Bordeaux FGR Bayferrox 130 BM Titanium dioxide Kronos 2059	72.73 13.89 6.56 6.82	15	low	only for air-drying paints

# RAL 3004-GL

## PURPLE RED

## PURPURROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Hostaperm Red Violet ER 02 Bayferrox 130 BM Titanium dioxide Kronos 2310	54.74 35.60 3.56 6.10	15	high	
2	Hostaperm Red D3G 70 Hostaperm Red Violet ER 02 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	54.87 40.70 4.28 0.15	20	high	
3	Novoperm Red F3RK 70 Hostaperm Red Violet ER 02 Bayferrox 130 BM Titanium dioxide Kronos 2310	25.42 22.46 45.76 6.36	20	medium	
4	Hansa Red 3B Permanent Bordeaux FRR Bayferrox 130 BM Titanium dioxide Kronos 2059	35.76 27.19 26.88 10.17	20	low	only for air-drying paints

# RAL 3005-GL

## WINE RED

## WEINROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Red Violet ER 02	34.10	20	high	
	Bayferrox 130 BM	60.30			
	Titanium dioxide Kronos 2310	5.05			
	COLOUR BLACK FW 200	0.55			
2	Permanent Bordeaux FGR	66.66	10	low	only for air-drying paints
	Bayferrox 130 BM	12.31			
	Titanium dioxide Kronos 2059	17.91			
	LAMP BLACK 101	3.12			

# RAL 3007-GL

## BLACK RED

## SCHWARZROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Red Violet ER 02	26.82	10	high	metamerism free
	Paliogen Maroon L 3920	15.06			
	Novoperm Orange HL 70	39.56			
	Titanium dioxide Kronos 2310	14.61			
	COLOUR BLACK FW 200	3.95			
2	Hostaperm Red Violet ER 02	32.95	10	high	
	Sicotan Yellow L 1910	7.79			
	Bayferrox 3920	18.91			
	Bayferrox 130 BM	36.33			
	COLOUR BLACK FW 200	4.02			

# RAL 3009-GL

## OXIDE RED

## OXIDROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 130 BM	82.07	30	high	metamerism free
	Bayferrox 3920	6.14			
	Titanium dioxide Kronos 2310	10.35			
	COLOUR BLACK FW 200	1.44			

# RAL 3011-GL

## BROWN RED

## BRAUNROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	37.42	20	high	metamerism free
	Hostaperm Pink E	30.23			
	Bayferrox 130 BM	30.08			
	Titanium dioxide Kronos 2310	2.27			
2	Hostaperm Red D3G 70	31.85	25	high	
	Hostaperm Red Violet ER 02	4.10			
	Bayferrox 130 BM	58.10			
	Titanium dioxide Kronos 2310	5.95			
3	Novoperm Red F3RK 70	39.40	25	medium	
	Hostaperm Red Violet ER 02	7.60			
	Bayferrox 130 BM	48.20			
	Titanium dioxide Kronos 2310	4.80			
4	Permanent Red FGR	28.88	20	low	only for air-drying paints
	Permanent Bordeaux FGR	14.92			
	Bayferrox 130 BM	47.81			
	Titanium dioxide Kronos 2059	8.39			
5	Hansa Red 3B	50.30	25	low	only for air-drying paints
	Bayferrox 160 BM	43.20			
	Titanium dioxide Kronos 2059	6.50			



# RAL 3012-GL

## BEIGE RED

## BEIGEROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Scarlet GO	4.99	50	high	metamerism free
	Sicotan Yellow L 1910	37.61			
	Bayferrox 130 BM	0.70			
	Titanium dioxide Kronos 2310	56.52			
	COLOUR BLACK FW 200	0.18			
2	Novoperm Orange HL 70	12.50	55	high	
	Bayferrox 3920	3.06			
	Titanium dioxide Kronos 2310	84.26			
	COLOUR BLACK FW 200	0.18			
3	Hansa Red GG	5.50	55	low	only for air-drying paints
	Bayferrox 3920	12.31			
	Bayferrox 130 BM	3.71			
	Titanium dioxide Kronos 2059	78.24			
	LAMP BLACK 101	0.24			

# RAL 3013-GL

## TOMATO RED

## TOMATENROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Paliogen Maroon L 3920 Hostaperm Red E3B Bayferrox 130 BM Titanium dioxide Kronos 2310	58.63 11.13 1.70 12.14 16.40	25	high	metamerism free
2	Novoperm Orange HL 70 Hostaperm Pink E Bayferrox 130 BM Titanium dioxide Kronos 2310	63.04 10.08 14.40 12.48	25	high	
3	Hostaperm Red D3G 70 Novoperm Orange HL 70 Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	16.96 51.18 18.17 13.63 0.06	30	high	
4	Novoperm Red F2RK 70 Novoperm Orange HL 70 Bayferrox 130 BM Titanium dioxide Kronos 2310	18.23 46.69 22.55 12.53	30	medium	
5	Hansa Red GG Permanent Bordeaux FGR Bayferrox 130 BM Titanium dioxide Kronos 2059	60.25 9.26 10.65 19.84	25	low	only for air-drying paints

# RAL 3014-GL

## ANTIQUÉ PINK

### ALTROSA

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Irgazin Yellow L 2060	3.12	55	high	metamerism free
	Paliogen Maroon L 3920	1.74			
	Hostaperm Red E2B 70	4.96			
	Sicotan Yellow L 1910	13.50			
	Bayferrox 3920	3.90			
	Titanium dioxide Kronos 2310	72.78			
2	Permanent Red FGR	3.60	60	low	only for air-drying paints
	Bayferrox 3920	8.10			
	Titanium dioxide Kronos 2059	88.10			
	LAMP BLACK 101	0.20			

# RAL 3015-GL

## LIGHT PINK

### HELLROSA

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Scarlet GO	0.80	75	high	metamerism free
	Hostaperm Pink E	1.01			
	Sicotan Yellow L 1910	10.28			
	Titanium dioxide Kronos 2310	87.89			
	COLOUR BLACK FW 200	0.02			
2	Hostaperm Scarlet GO	0.72	65	high	
	Hostaperm Pink E	1.17			
	Bayferrox 3920	3.92			
	Titanium dioxide Kronos 2059	94.14			
	LAMP BLACK 101	0.05			
3	Novoperm Red HF3S 70	3.40	65	medium	
	Titanium dioxide Kronos 2310	96.59			
	COLOUR BLACK FW 200	0.01			
4	Permanent Red FGR	1.20	60	low	only for air-drying paints
	Bayferrox 3920	2.60			
	Titanium dioxide Kronos 2059	96.10			
	LAMP BLACK 101	0.10			

# RAL 3016-GL

## CORAL RED

## KORALLENROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	47.57	20	high	metamerism free
	Hostaperm Scarlet GO	21.80			
	Hostaperm Red E2B 70	6.90			
	Titanium dioxide Kronos 2310	23.48			
	COLOUR BLACK FW 200	0.25			
2	Novoperm Orange HL 70	46.12	25	high	metamerism free
	Novoperm Red HF3S 70	21.88			
	Hostaperm Red E2B 70	8.05			
	Titanium dioxide Kronos 2310	23.69			
	COLOUR BLACK FW 200	0.26			
3	Novoperm Red HF3S 70	45.70	35	medium	
	Bayferrox 130 BM	15.81			
	Bayferrox 3920	13.75			
	Titanium dioxide Kronos 2310	24.74			
4	Permanent Red FGR	23.10	25	low	
	Bayferrox 3920	52.10			
	Titanium dioxide Kronos 2059	24.40			
	LAMP BLACK 101	0.40			
5	Hansa Red GG	51.09	20	low	only for air-drying paints
	Hansa Red 3B	17.32			
	Titanium dioxide Kronos 2059	31.14			
	LAMP BLACK 101	0.45			

# RAL 3017-GL

## ROSE ROSÉ

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Paliogen Maroon L 3920 Hostaperm Red E3B Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	17.34 0.55 12.61 69.49 0.01	45	high	metamerism free
2	Hostaperm Red D3G 70 Hostaperm Red Violet ER 02 Novoperm Orange HL 70 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	7.37 0.60 15.30 76.72 0.01	50	high	
3	Novoperm Orange HL 70 Novoperm Red F3RK 70 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	11.92 12.04 76.02 0.02	55	medium	
4	Permanent Red FGR Bayferrox 3920 Titanium dioxide Kronos 2059 LAMP BLACK 101	10.40 3.90 85.69 0.01	55	low	
5	Hansa Red GG Hansa Red B Titanium dioxide Kronos 2059	1.57 23.25 75.18	40	low	only for air-drying paints

# RAL 3018-GL

## STRAWBERRY RED

### ERDBEERROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	6.83	30	high	metamerism free
	Hostaperm Scarlet GO	13.46			
	Hostaperm Red D2G 70	19.14			
	Titanium dioxide Kronos 2310	60.57			
2	Novoperm Orange HL 70	11.87	40	high	
	Hostaperm Scarlet GO	4.86			
	Novoperm Red F2RK 70	21.91			
	Titanium dioxide Kronos 2310	61.35			
	COLOUR BLACK FW 200	0.01			
3	Permanent Red FGR	21.00	40	low	
	Titanium dioxide Kronos 2059	78.99			
	LAMP BLACK 101	0.01			

# RAL 3020-GL

## TRAFFIC RED

### VERKEHRSROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Hostaperm Red D2G 70 Titanium dioxide Kronos 2310	76.83 19.59 3.58	25	high	
2	Novoperm Orange HL 70-EDS Hostaperm Red D3G 70-EDS Titanium dioxide Kronos 2310	77.80 18.90 3.30	25	high	
3	Novoperm Red HF3S 70 Hostaperm Red D2G 70 Bayferrox 160 BM Titanium dioxide Kronos 2310	78.18 15.04 1.73 5.05	25	high	
4	Novoperm Orange HL 70 Novoperm Red F2RK 70 Bayferrox 130 BM	77.20 22.47 0.33	30	medium	
5	Permanent Red FGR 70 Titanium dioxide Kronos 2059 LAMP BLACK 101	90.97 9.01 0.02	25	low	



# RAL 3022-GL

## SALMON PINK

### LACHSROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Irgazin Yellow L 2060	21.83	40	high	metamerism free
	Hostaperm Red E2B 70	6.16			
	Bayferrox 105 M	3.30			
	Titanium dioxide Kronos 2310	68.71			
2	Novoperm Orange HL 70	28.20	50	high	
	Bayferrox 130 BM	4.10			
	Titanium dioxide Kronos 2310	67.70			
3	Novoperm Orange HL 70-EDS	21.70	50	high	
	Hostaperm Pink E-EDS	0.70			
	Bayferrox 130 BM	4.30			
	Titanium dioxide Kronos 2310	73.30			

# RAL 3027-GL

## RASPBERRY RED

## HIMBEERROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Red D2G 70	24.28	20	high	metamerism free
	Hostaperm Red E2B 70	27.59			
	Hostaperm Pink E	8.57			
	Titanium dioxide Kronos 2310	39.56			
2	Hostaperm Red D3G 70	28.20	15	high	
	Hostaperm Pink E	18.88			
	Titanium dioxide Kronos 2310	52.87			
	COLOR BLACK FW 200	0.05			
3	Permanent Red FGR 70	8.64	20	low	
	Novoperm Red BLS 02	39.98			
	Titanium dioxide Kronos 2059	51.35			
	LAMP BLACK 101	0.03			

# RAL 3028-GL

## PURE RED

## REINROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Red D2G 70 Novoperm Red HF3S 70 Titanium dioxide Kronos 2310	5.68 75.94 18.38	25	high	metamerism free

# RAL 3031-GL

## ORIENT RED

## ORIENTROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Red E2B 70	39.14	30	high	metamerism free
	Sicotan Yellow L 1910	25.07			
	Bayferrox 3920	24.99			
	Titanium dioxide Kronos 2310	10.74			
	COLOUR BLACK FW 200	0.06			
2	Novoperm Orange HL 70	11.81	20	medium	
	Novoperm Red F3RK 70	42.54			
	Titanium dioxide Kronos 2310	45.36			
	COLOUR BLACK FW 200	0.29			
3	Hostaperm Red D3G 70	26.49	30	medium	
	Novoperm Red HF3S 70	21.87			
	Bayferrox 3920	1.22			
	Titanium dioxide Kronos 2310	50.12			
	COLOUR BLACK FW 200	0.30			
4	Novoperm Red F2RK 70	31.93	30	medium	
	Novoperm Red HF3S 70	15.80			
	Bayferrox 3920	11.60			
	Titanium dioxide Kronos 2310	40.33			
	COLOUR BLACK FW 200	0.34			

# RAL 3032-GL

## PERL RUBY RED

## PERLRUBINROT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Paliogen Maroon L 3920 Iriodin 9303 WR Royal Gold Iriodin 9524 WR Red Satin COLOUR BLACK FW 200	71.00 4.43 24.27 0.30	40	high	

# RAL 3033-GL

## PERL PINK

## PERLROSA

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Red D2G 70	18.55	25	high	
	Sicotrans Yellow L 1916	6.11			
	Iriodin 9500 WR Bronze	71.34			
	Titanium dioxide Kronos 2310	4.00			

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# RAL 4000 Colors

## RAL 4000 FARBTÖNE

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# RAL 4001-GL

## RED LILAC

### ROTLILA

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Red Violet ER 02	8.16	40	high	metamerism free
	Bayferrox 130 BM	6.59			
	Titanium dioxide Kronos 2310	84.83			
	COLOUR BLACK FW 200	0.42			

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# RAL 4002-GL

## RED VIOLET

## ROTVIOLETT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Paliogen Maroon L 3920	3.78	25	high	metamerism free
	Hostaperm Pink E	17.94			
	Bayferrox 3920	42.99			
	Titanium dioxide Kronos 2310	35.13			
	COLOUR BLACK FW 200	0.16			
2	Novoperm Red BLS 02	12.52	25	low	only for air-drying paints
	Permanent Bordeaux FGR	11.91			
	Bayferrox 3920	21.00			
	Titanium dioxide Kronos 2059	54.07			
	LAMP BLACK 101	0.50			

# RAL 4003-GL

## HEATHER VIOLET

### ERIKAVIOLETT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Scarlet GO	4.75	45	high	metamerism free
	Hostaperm Pink E	7.93			
	Bayferrox 3920	0.28			
	Titanium dioxide Kronos 2310	87.04			

# RAL 4004-GL

## CLARET VIOLET

### BORDEAUXVIOLETT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Red Violet ER 02	45.87	15	high	
	Hostaperm Red E3B	25.59			
	Bayferrox 105 M	5.63			
	Titanium dioxide Kronos 2310	22.78			
	COLOUR BLACK FW 200	0.13			

# RAL 4005-GL

## BLUE LILAC

## BLAULILA

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Red Violet ER 02	3.67	50	high	
	Hostaperm Violet RL spec.	1.69			
	Bayferrox 130 BM	3.30			
	Titanium dioxide Kronos 2310	91.34			

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# RAL 4006-GL

## TRAFFIC PURPLE

### VERKEHRSPURPUR

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	35.14	20	high	
	Hostaperm Red E2B 70	1.58			
	Titanium dioxide Kronos 2310	62.96			
	COLOUR BLACK FW 200	0.32			

# RAL 4007-GL

## PURPLE VIOLET

## PURPURVIOLETT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Red Violet ER 02	44.64	15	high	metamerism free
	Paliogen Maroon L 3920	11.14			
	Hostaperm Violet RL spec.	4.63			
	Titanium dioxide Kronos 2310	39.59			
2	Hostaperm Red Violet ER 02	39.05	15	high	
	Hostaperm Violet RL spec.	5.47			
	Bayferrox 130 BM	27.08			
	Titanium dioxide Kronos 2310	28.40			

# RAL 4008-GL

## SIGNAL VIOLET

## SIGNALVIOLETT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	16.86	30	high	metamerism free
	Hostaperm Red E3B	4.55			
	Hostaperm Violet RL spec.	0.77			
	Titanium dioxide Kronos 2310	77.44			
	COLOUR BLACK FW 200	0.38			
2	Hostaperm Pink E-EDS	28.10	30	high	
	Hostaperm Violet RL-EDS	1.40			
	Titanium dioxide Kronos 2310	70.50			

# RAL 4009-GL

## PASTEL VIOLET

## PASTELLVIOLETT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Scarlet GO	2.49	40	high	metamerism free
	Hostaperm Pink E	0.63			
	Bayferrox 130 BM	1.65			
	Titanium dioxide Kronos 2310	94.48			
	COLOUR BLACK FW 200	0.75			



# RAL 4010-GL

## TELEMAGENTA

## TELEMAGENTA

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Red E3B	22.69	35	high	metamerism free
	Hostaperm Pink EB transp.	6.41			
	Titanium dioxide Kronos 2310	70.90			

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# RAL 4011-GL

## PERL VIOLET

## PERLVIOLETT

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Violet RL spec. Iriodin 9211 WR Rutile Fine Red Iriodin 9602 WR II Silver Grey	3.55 23.17 73.28	80	high	

# RAL 4012-GL

## PERL BLACKBERRY

## PERLBROMBEER

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Violet RL spec. Iriodin 9612 WR II Silver Fine Grey Iriodin 9602 WR II Silver Grey	2.64 25.35 72.01	65	high	



# RAL 5000 Colors

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# RAL 5000-GL

## VIOLET BLUE

## VIOLETTBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	9.61	15	high	metamerism free
	Hostaperm Blue BT-617-D	11.00			
	Titanium dioxide Kronos 2310	77.08			
	COLOUR BLACK FW 200	2.31			
2	Hostaperm Violet RL spec.	3.48	15	high	metamerism free
	Hostaperm Blue B2G-L	10.50			
	Titanium dioxide Kronos 2059	76.33			
	LAMP BLACK 101	9.69			
3	Hostaperm Violet RL-EDS	3.50	15	high	metamerism free
	Hostaperm Blue B2G-EDS	18.30			
	Titanium dioxide Kronos 2310	77.50			
	COLOUR BLACK FW 200	0.70			

# RAL 5001-GL

## GREEN BLUE

## GRÜNBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue BT-627-D	19.09	15	high	metamerism free
	Heliogen Green L 9361	3.16			
	Bayferrox 130 BM	23.55			
	Titanium dioxide Kronos 2310	54.20			
2	Hostaperm Pink E	1.54	15	high	
	Hostaperm Blue A4R	19.46			
	Titanium dioxide Kronos 2059	75.64			
	COLOUR BLACK FW 200	3.36			

# RAL 5002-GL

## ULTRAMARINE BLUE

## ULTRAMARINBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Violet RL spec. Hostaperm Blue BT-627-D Titanium dioxide Kronos 2310	8.46 31.35 60.19	15	high	metamerism free
2	Hostaperm Violet RL-EDS Hostaperm Blue B2G-EDS Titanium dioxide Kronos 2310	8.50 31.40 60.10	15	high	
3	Hostaperm Violet RL spec. Hostaperm Blue A4R Titanium dioxide Kronos 2059	8.26 29.39 62.35	15	high	



# RAL 5003-GL

## SAPPHIRE BLUE

## SAPHIRBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	10.06	15	high	metamerism free
	Hostaperm Blue BT-627-D	42.32			
	Titanium dioxide Kronos 2310	45.03			
	COLOUR BLACK FW 200	2.59			
2	Hostaperm Violet RL spec.	4.94	15	high	metamerism free
	Hostaperm Blue A4R	37.20			
	Titanium dioxide Kronos 2059	46.94			
	LAMP BLACK 101	10.92			

# RAL 5004-GL

## BLACK BLUE

## SCHWARZBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	1.09	10	high	
	Hostaperm Blue BT-617-D	57.99			
	Hostaperm Green GNX	13.05			
	Titanium dioxide Kronos 2310	17.40			
	COLOUR BLACK FW 200	10.47			
2	Hostaperm Violet RL spec.	8.19	10	high	metamerism free
	Hostaperm Blue A4R	39.08			
	Titanium dioxide Kronos 2059	11.79			
	LAMP BLACK 101	40.94			

# RAL 5005-GL

## SIGNAL BLUE

## SIGNALBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E Hostaperm Blue BT-617-D Titanium dioxide Kronos 2310	1.85 43.84 54.31	15	high	metamerism free
2	Hostaperm Violet RL spec. Hostaperm Blue B2G-L Titanium dioxide Kronos 2059 LAMP BLACK 101	0.51 49.50 49.92 0.07	15	high	metamerism free
3	Hostaperm Pink E Hostaperm Blue B2G-L Titanium dioxide Kronos 2059 COLOUR BLACK FW 200	1.31 51.14 47.49 0.05	15	high	metamerism free
4	Hostaperm Pink E-EDS Hostaperm Blue B2G-EDS Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	1.60 45.60 52.78 0.02	15	high	metamerism free

# RAL 5007-GL

## BRILLIANT BLUE

## BRILLANTBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	3.04	15	high	metamerism free
	Hostaperm Blue BT-627-D	7.12			
	Bayferrox 3920	1.44			
	Titanium dioxide Kronos 2310	88.22			
	COLOUR BLACK FW 200	0.18			
2	Hostaperm Violet RL spec.	1.03	15	high	metamerism free
	Hostaperm Blue A4R	7.07			
	Titanium dioxide Kronos 2059	86.66			
	LAMP BLACK 101	5.24			

# RAL 5008-GL

## GREY BLUE

## GRAUBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	2.73	15	high	metamerism free
	Hostaperm Blue BT-627-D	10.26			
	Titanium dioxide Kronos 2310	74.69			
	COLOUR BLACK FW 200	12.32			
2	Hostaperm Blue A4R	5.45	15	high	metamerism free
	Bayferrox 3920	3.41			
	Titanium dioxide Kronos 2059	54.18			
	LAMP BLACK 101	36.96			

# RAL 5009-GL

## AZURE BLUE

## AZURBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	3.21	15	high	metamerism free
	Hostaperm Blue BT-627-D	3.42			
	Hostaperm Blue BT-617-D	10.26			
	Bayferrox 3920	5.24			
	Titanium dioxide Kronos 2310	76.19			
	COLOUR BLACK FW 200	1.68			
2	Hostaperm Violet RL spec.	0.85	15	high	metamerism free
	Hostaperm Blue A4R	2.77			
	Hostaperm Blue B2G-L	10.47			
	Bayferrox 3920	5.39			
	Titanium dioxide Kronos 2059	74.69			
	LAMP BLACK 101	5.83			

# RAL 5010-GL

## GENTIAN BLUE

## ENZIANBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	4.40	15	high	metamerism free
	Hostaperm Blue BT-627-D	30.40			
	Hostaperm Green GNX	1.65			
	Bayferrox 3920	4.71			
	Titanium dioxide Kronos 2310	58.84			
2	Hostaperm Violet RL spec.	1.03	15	high	
	Hostaperm Blue A4R	26.75			
	Hostaperm Blue B2G-L	9.29			
	Titanium dioxide Kronos 2059	60.48			
	LAMP BLACK 101	2.45			

# RAL 5011-GL

## STEEL BLUE

## STAHLBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	6.46	15	high	metamerism free
	Hostaperm Blue BT-627-D	22.58			
	Hostaperm Blue BT-617-D	30.79			
	Titanium dioxide Kronos 2310	33.43			
	COLOUR BLACK FW 200	6.74			
2	Hostaperm Blue A4R	18.12	15	high	metamerism free
	Hostaperm Blue B2G-L	36.13			
	Titanium dioxide Kronos 2059	23.75			
	LAMP BLACK 101	22.00			



# RAL 5012-GL

## LIGHT BLUE

## LICHTBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E Hostaperm Blue BT-627-D Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	0.47 5.19 94.07 0.27	20	high	metamerism free
2	Hostaperm Violet RL spec. Hostaperm Blue A4R Titanium dioxide Kronos 2059 LAMP BLACK 101	0.23 7.00 91.90 0.87	20	high	metamerism free
3	Hostaperm Pink E-EDS Hostaperm Blue B2G-EDS Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	0.80 9.80 89.38 0.02	20	high	

# RAL 5013-GL

## COBALT BLUE

## KOBALTBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	19.15	15	high	metamerism free
	Hostaperm Blue BT-627-D	31.72			
	Titanium dioxide Kronos 2310	46.57			
	COLOUR BLACK FW 200	2.56			
2	Hostaperm Pink E	20.00	15	high	
	Hostaperm Blue A4R	28.50			
	Titanium dioxide Kronos 2059	42.83			
	LAMP BLACK 101	8.67			

# RAL 5014-GL

## PIGEON BLUE

## TAUBENBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	1.78	20	high	metamerism free
	Hostaperm Blue BT-627-D	2.18			
	Titanium dioxide Kronos 2310	95.01			
	COLOUR BLACK FW 200	1.03			
2	Hostaperm Pink E	1.86	20	high	metamerism free
	Hostaperm Blue A4R	2.09			
	Titanium dioxide Kronos 2059	92.12			
	LAMP BLACK 101	3.93			

# RAL 5015-GL

## SKY BLUE

## HIMMELBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	0.54	20	high	metamerism free
	Hostaperm Blue BT-627-D	9.03			
	Titanium dioxide Kronos 2310	90.26			
	COLOUR BLACK FW 200	0.17			
2	Hostaperm Violet RL spec.	0.30	20	high	
	Hostaperm Blue A4R	11.39			
	Titanium dioxide Kronos 2059	87.74			
	LAMP BLACK 101	0.57			

# RAL 5017-GL

## TRAFFIC BLUE

### VERKEHRSBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue BT-627-D	37.19	15	high	metamerism free
	Hostaperm Green GNX	2.70			
	Bayferrox 130 BM	0.04			
	Titanium dioxide Kronos 2310	60.07			
2	Hostaperm Blue BT-B2G-L	34.44	15	high	
	Hostaperm Green GNX	1.39			
	Titanium dioxide Kronos 2310	64.17			

# RAL 5018-GL

## TURQUOISE BLUE

## TÜRKISBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue BT-627-D	1.55	20	high	metamerism free
	Hostaperm Blue BT-617-D	3.99			
	Hostaperm Green GNX	0.12			
	Sicotan Yellow L 1910	33.22			
	Titanium dioxide Kronos 2310	61.12			

# RAL 5019-GL

## CAPRI BLUE

## CAPRIBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	4.85	15	high	metamerism free
	Hostaperm Blue BT-627-D	16.14			
	Hostaperm Green GNX	7.84			
	Titanium dioxide Kronos 2310	71.17			
2	Hostaperm Pink E	5.61	15	high	metamerism free
	Hostaperm Blue A4R	16.21			
	Hostaperm Green GNX	7.38			
	Titanium dioxide Kronos 2059	70.80			

# RAL 5020-GL

## OCEAN BLUE

## OZEANBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	11.46	15	high	
	Hostaperm Blue BT-627-D	31.87			
	Hostaperm Blue BT-617-D	9.83			
	Heliogen Green L 9361	19.88			
	Titanium dioxide Kronos 2310	26.96			
2	Hostaperm Yellow H3G	19.35	15	high	
	Hostaperm Blue BT-627-D	36.66			
	Hostaperm Green GNX	19.35			
	Titanium dioxide Kronos 2310	24.64			



# RAL 5021-GL

## WATER BLUE

## WASSERBLAU

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Blue BT-627-D	8.21	20	high	metamerism free
	Heliogen Green L 9361	16.18			
	Bayferrox 130 BM	2.85			
	Titanium dioxide Kronos 2310	72.76			

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# RAL 5022-GL

## NIGHT BLUE

## NACHTBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E Hostaperm Blue BT-617-D Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	35.00 25.74 38.82 0.44	15	high	
2	Hostaperm Pink E Hostaperm Blue B2G-L Titanium dioxide Kronos 2059 LAMP BLACK 101	34.66 26.54 37.10 1.70	15	high	
3	Hostaperm Pink E-EDS Hostaperm Blue B2G-EDS Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	33.80 27.40 38.78 0.02	15	high	

# RAL 5023-GL

## DISTANT BLUE

## FERNBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	4.79	20	high	
	Hostaperm Blue BT-627-D	2.12			
	Hostaperm Blue BT-617-D	3.25			
	Bayferrox 3920	4.08			
	Titanium dioxide Kronos 2310	85.09			
COLOUR BLACK FW 200	0.67				
2	Hostaperm Violet RL spec.	1.04	20	high	
	Hostaperm Blue A4R	2.31			
	Hostaperm Blue B2G-L	3.42			
	Bayferrox 130 BM	10.15			
	Titanium dioxide Kronos 2059	83.08			

# RAL 5024-GL

## PASTEL BLUE

## PASTELLBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E Hostaperm Blue BT-617-D Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	0.73 1.69 97.05 0.53	20	high	

# RAL 5025-GL

## PEARL GENTIAN BLUE PERLENZIAN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue BT-728-D Iriodin 9231 WR Rutile Fine Green Iriodin 9225 WR Rutile Blue Pearl COLOUR BLACK FW 200	2.33 20.08 76.28 1.31	35	high	

# RAL 5026-GL

## PEARL NIGHT BLUE

### PERLNACHTBLAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Violet RL spec. Hostaperm Blue BT-627-D Iriodin 9225 WR Rutile Blue Pearl	11.15 37.14 51.71	30	high	

# RAL 6000 Colors

## RAL 6000 FARBTÖNE

RAL 6000-GL	PATINA GREEN / PATINAGRÜN	112
RAL 6001-GL	EMERALD GREEN / SMARAGDGRÜN	113
RAL 6002-GL	LEAF GREEN / LAUBGRÜN	114
RAL 6003-GL	OLIVE GREEN / OLIVGRÜN	115
RAL 6004-GL	BLUE GREEN / BLAUGRÜN	116
RAL 6005-GL	MOSS GREEN / MOOSGRÜN	117
RAL 6006-GL	GREY OLIVE / GRAUOLIV	118
RAL 6007-GL	BOTTLE GREEN / FLASCHENGRÜN	119
RAL 6008-GL	BROWN GREEN / BRAUNGRÜN	120
RAL 6009-GL	FIR GREEN / TANNENGRÜN	121
RAL 6010-GL	GRASS GREEN / GRASGRÜN	122
RAL 6011-GL	RESEDA GREEN / RESEDAGRÜN	123
RAL 6012-GL	BLACK GREEN / SCHWARZGRÜN	124
RAL 6013-GL	REED GREEN / SCHILFGRÜN	125
RAL 6014-GL	YELLOW OLIVE / GELBOLIV	126
RAL 6015-GL	BLACK OLIVE / SCHWARZOLIV	127
RAL 6016-GL	TURQUOISE GREEN / TÜRKISGRÜN	128
RAL 6017-GL	MAY GREEN / MAIGRÜN	129
RAL 6018-GL	YELLOW GREEN / GELBGRÜN	130
RAL 6019-GL	PASTEL GREEN / WEISSGRÜN	131
RAL 6020-GL	CHROME GREEN / CHROMOXIDGRÜN	132
RAL 6021-GL	PALE GREEN / BLASSGRÜN	133
RAL 6022-GL	OLIVE DRAB / BRAUNOLIV	134
RAL 6024-GL	TRAFFIC GREEN / VERKEHRSGRÜN	135
RAL 6025-GL	FERN GREEN / FARNGRÜN	136
RAL 6026-GL	OPAL GREEN / OPALGRÜN	137
RAL 6027-GL	LIGHT GREEN / LICHTGRÜN	138
RAL 6028-GL	PINE GREEN / KIEFERNGRÜN	139
RAL 6029-GL	MINT GREEN / MINZGRÜN	140
RAL 6032-GL	SIGNAL GREEN / SIGNALGRÜN	141
RAL 6033-GL	MINT TURQUOISE / MINTTÜRKIS	142
RAL 6034-GL	PASTEL TURQUOISE / PASTELLTÜRKIS	143
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RAL 6037-GL	PURE GREEN / REINGRÜN	146

# RAL 6000-GL

## PATINA GREEN

## PATINAGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	3.25	15	high	metamerism free
	Hostaperm Green GNX	13.83			
	Bayferrox 3920	13.56			
	Titanium dioxide Kronos 2310	67.78			
	COLOUR BLACK FW 200	1.58			
2	Hostaperm Yellow H4G-EDS	2.80	15	high	
	Hostaperm Green GNX-EDS	9.40			
	Bayferrox 3920	12.80			
	Titanium dioxide Kronos 2310	73.40			
	COLOUR BLACK FW 200	1.60			
3	Hansa Brilliant Yellow 2GX 70-S	6.80	15	low	only for air-drying paints
	Hostaperm Green GNX	10.10			
	Titanium dioxide Kronos 2059	77.80			
	LAMP BLACK 101	5.30			



# RAL 6001-GL

## EMERALD GREEN

## SMARAGDGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	28.66	15	high	metamerism free
	Hostaperm Green GNX	13.05			
	Bayferrox 3920	43.64			
	Titanium dioxide Kronos 2310	14.58			
	COLOUR BLACK FW 200	0.07			
2	Hostaperm Yellow H4G-EDS	18.60	15	high	
	Hostaperm Green GNX-EDS	16.70			
	Bayferrox 3920	37.40			
	Titanium dioxide Kronos 2310	27.00			
	COLOUR BLACK FW 200	0.30			
3	Novoperm Yellow F2G	14.73	15	medium	
	Hostaperm Green GNX	15.91			
	Bayferrox 3920	49.12			
	Titanium dioxide Kronos 2310	20.04			
	COLOUR BLACK FW 200	0.20			
4	Hansa Brilliant Yellow 2GX 70-S	12.70	15	low	only for air-drying paints
	Hostaperm Green GNX	15.30			
	Bayferrox 3920	45.20			
	Titanium dioxide Kronos 2059	26.40			
	COLOUR BLACK FW 200	0.40			

# RAL 6002-GL

## LEAF GREEN

## LAUBGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G Hostaperm Blue BT-627-D Hostaperm Green GNX Bayferrox 3920 COLOUR BLACK FW 200	57.55 5.72 0.38 36.31 0.04	15	high	
2	Hostaperm Yellow H4G-EDS Hostaperm Blue B2G-EDS Bayferrox 3920	48.80 6.70 44.50	15	high	
3	Novoperm Yellow 5GD 71 Hostaperm Blue A4R Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	51.55 3.51 4.50 39.35 1.00 0.08	15	medium	
4	Novoperm Yellow F2G Hostaperm Blue A4R Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	45.68 5.84 1.74 34.15 12.46 0.13	15	medium	
5	Hansa Brilliant Yellow 2GX 70-S Hostaperm Blue A4R Bayferrox 130 BM Titanium dioxide Kronos 2059 COLOUR BLACK FW 200	63.29 9.80 4.08 22.05 0.78	15	low	only for air-drying paints

# RAL 6003-GL

## OLIVE GREEN

## OLIVGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	12.90	15	high	metamerism free
	Hostaperm Green GNX	2.90			
	Bayferrox 3920	55.00			
	Titanium dioxide Kronos 2310	25.70			
	COLOUR BLACK FW 200	3.50			
2	Hostaperm Yellow H4G-EDS	1.70	15	high	
	Hostaperm Blue B2G-EDS	0.10			
	Hostaperm Green GNX-EDS	2.20			
	Bayferrox 3920	59.90			
	Titanium dioxide Kronos 2310	32.90			
	COLOUR BLACK FW 200	3.20			
3	Hansa Brilliant Yellow 2GX 70-S	11.40	20	low	only for air-drying paints
	Hostaperm Green GNX	1.30			
	Bayferrox 3920	51.50			
	Titanium dioxide Kronos 2059	25.00			
	LAMP BLACK 101	10.80			

# RAL 6004-GL

## BLUE GREEN

## BLAUGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue BT-627-D	4.46	15	high	
	Hostaperm Green GNX	39.66			
	Titanium dioxide Kronos 2310	51.24			
	COLOUR BLACK FW 200	4.64			
2	Hostaperm Blue B2G-L	5.00	15	high	metamerism free
	Hostaperm Green GNX	34.60			
	Titanium dioxide Kronos 2059	50.20			
	LAMP BLACK 101	10.20			
3	Hostaperm Blue B2G-EDS	1.60	15	high	
	Hostaperm Green GNX-EDS	39.50			
	Titanium dioxide Kronos 2310	52.80			
	COLOUR BLACK 101	6.10			

# RAL 6005-GL

## MOSS GREEN

## MOOSGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Green GNX	42.37	15	high	metamerism free
	Bayferrox 3920	54.79			
	Titanium dioxide Kronos 2310	2.34			
	COLOUR BLACK FW 200	0.50			
2	Hostaperm Green GNX-EDS	48.10	15	high	
	Bayferrox 3920	39.60			
	Titanium dioxide Kronos 2310	10.60			
	COLOUR BLACK FW 200	1.70			

# RAL 6006-GL

## GREY OLIVE

## GRAUOLIV

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	26.29	15	high	metamerism free
	Hostaperm Green GNX	12.77			
	Sicotan Yellow L 1910	5.29			
	Bayferrox 130 BM	32.08			
	Titanium dioxide Kronos 2310	20.19			
	COLOUR BLACK FW 200	3.38			
2	Hostaperm Green GNX-EDS	4.70	15	high	
	Sicotan Yellow L 1910	57.30			
	Bayferrox 130 BM	22.50			
	Titanium dioxide Kronos 2310	8.90			
	COLOUR BLACK FW 200	6.60			
3	Novoperm Yellow F2G	15.20	15	medium	
	Hostaperm Green GNX	16.35			
	Bayferrox 3920	39.50			
	Titanium dioxide Kronos 2310	25.49			
	COLOUR BLACK FW 200	3.46			
4	Hansa Brilliant Yellow 2GX 70-S	13.69	15	low	only for air-drying paints
	Hostaperm Green GNX	12.49			
	Bayferrox 130 BM	37.51			
	Titanium dioxide Kronos 2059	24.57			
	COLOUR BLACK FW 200	11.47			

# RAL 6007-GL

## BOTTLE GREEN

## FLASCHENGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	42.94	15	high	metamerism free
	Hostaperm Green GNX	21.45			
	Bayferrox 130 BM	32.34			
	Titanium dioxide Kronos 2310	3.27			
2	Hostaperm Yellow H4G-EDS	36.20	15	high	
	Hostaperm Green GNX-EDS	17.70			
	Bayferrox 130 BM	37.10			
	Titanium dioxide Kronos 2310	7.10			
	COLOUR BLACK FW 200	1.90			
3	Novoperm Yellow F2G	28.61	20	medium	metamerism free
	Hostaperm Green GNX	28.11			
	Bayferrox 130 BM	37.60			
	Titanium dioxide Kronos 2310	5.68			
4	Hansa Brilliant Yellow 2GX 70-S	18.63	20	low	only for air-drying paints
	Hostaperm Green GNX	29.41			
	Bayferrox 130 BM	46.57			
	Titanium dioxide Kronos 2059	5.39			

# RAL 6008-GL

## BROWN GREEN

## BRAUNGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G	9.82	15	high	metamerism free
	Novoperm Yellow HR 71	54.43			
	Bayferrox 130 BM	11.39			
	Titanium dioxide Kronos 2310	9.49			
	COLOUR BLACK FW 200	14.87			
2	Hostaperm Yellow H4G-EDS	45.50	15 high		
	Novoperm Yellow M2R 70-EDS	29.30			
	Bayferrox 130 BM	9.80			
	COLOUR BLACK FW 200	15.40			
3	Novoperm Yellow F2G	9.41	15	medium	
	Novoperm Yellow HR 71	60.45			
	Bayferrox 130 BM	11.75			
	Titanium dioxide Kronos 2310	4.46			
	COLOUR BLACK FW 200	13.93			



# RAL 6009-GL

## FIR GREEN

## TANNENGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G	27.14	15	high	metamerism free
	Hostaperm Green GNX	18.37			
	Bayferrox 3920	47.76			
	COLOUR BLACK FW 200	6.73			
2	Hostaperm Yellow H4G-EDS	20.00	15	high	
	Novoperm Yellow M2R 70-EDS	5.20			
	Hostaperm Green GNX-EDS	17.80			
	Bayferrox 3920	48.30			
3	COLOUR BLACK FW 200	8.70	15	medium	metamerism free
	Novoperm Yellow F2G	18.35			
	Hostaperm Green GNX	17.07			
	Bayferrox 3920	48.67			
	Titanium dioxide Kronos 2310	8.42			
COLOUR BLACK FW 200	7.49				
4	Hansa Brilliant Yellow 2GX 70-S	5.07	15	low	only for air-drying paints
	Hostaperm Green GNX	21.22			
	Bayferrox 3920	65.98			
	COLOUR BLACK FW 200	7.73			

# RAL 6010-GL

## GRASS GREEN

## GRASGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H6G	54.59	25	high	metamerism free
	Hostaperm Green GNX	3.28			
	Heliogen Green L 9361	3.64			
	Bayferrox 3920	22.75			
	Titanium dioxide Kronos 2310	15.14			
	COLOUR BLACK FW 200	0.60			
2	Hostaperm Yellow H3G	72.71	20	high	metamerism free
	Hostaperm Green GNX	4.54			
	Titanium dioxide Kronos 2310	21.59			
	COLOUR BLACK FW 200	1.16			
3	Hostaperm Yellow H4G-EDS	29.20	20	high	
	Hostaperm Green GNX-EDS	7.80			
	Sicotan Yellow L 1910	62.00			
	COLOUR BLACK FW 200	1.00			
4	Novoperm Yellow 5GD 71	46.51	20	medium	
	Hostaperm Green GNX	7.41			
	Bayferrox 3920	15.75			
	Titanium dioxide Kronos 2310	29.00			
	COLOUR BLACK FW 200	1.33			
5	Novoperm Yellow F2G	30.70	20	medium	metamerism free
	Hostaperm Green GNX	4.51			
	Heliogen Green L 9361	6.76			
	Bayferrox 3920	31.17			
	Titanium dioxide Kronos 2310	25.91			
	COLOUR BLACK FW 200	0.95			
6	Hansa Brilliant Yellow 2GX 70-S	10.30	20	low	only for air-drying paints
	Hostaperm Green GNX	10.30			
	Bayferrox 3920	65.50			
	Titanium dioxide Kronos 2059	13.80			
	COLOUR BLACK FW 200	0.10			

# RAL 6011-GL

## RESEDA GREEN

## RESEDAGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	23.82	20	high	metamerism free
	Hostaperm Green GNX	2.38			
	Bayferrox 3920	2.75			
	Titanium dioxide Kronos 2310	69.46			
	COLOUR BLACK FW 200	1.59			
2	Hostaperm Yellow H4G-EDS	16.30	20 high		
	Hostaperm Green GNX-EDS	2.10			
	Bayferrox 3920	4.60			
	Titanium dioxide Kronos 2310	75.20			
	COLOUR BLACK FW 200	1.80			
3	Novoperm Yellow F2G	11.15	25	medium	
	Hostaperm Green GNX	2.42			
	Bayferrox 3920	6.42			
	Titanium dioxide Kronos 2310	78.24			
	COLOUR BLACK FW 200	1.77			
4	Hansa Yellow 10G	15.60	20	low	only for air-drying paints
	Hostaperm Green GNX	1.86			
	Bayferrox 3920	15.06			
	Titanium dioxide Kronos 2059	63.11			
	COLOUR BLACK FW 200	4.37			

# RAL 6012-GL

## BLACK GREEN

## SCHWARZGRÜN

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Recipe number	FORMULATION	Parts	Pigmentation level related to solid binder	Durability	Remarks
		[%]	[approx. %]		
1	Hostaperm Blue BT-627-D	3.84	15	high	metamerism free
	Colortherm GN-M	74.41			
	Titanium dioxide Kronos 2310	15.41			
	COLOUR BLACK FW 200	6.34			

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# RAL 6013-GL

## REED GREEN

## SCHILFGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow HR 71	9.03	25	medium	
	Hostaperm Blue BT-627-D	1.33			
	Bayferrox 3920	20.85			
	Titanium dioxide Kronos 2310	67.05			
	COLOUR BLACK FW 200	1.74			
2	Novoperm Yellow HR 71-EDS	3.40	25	medium	
	Hostaperm Blue B2G-EDS	0.50			
	Bayferrox 3920	18.70			
	Titanium dioxide Kronos 2310	76.20			
	COLOUR BLACK FW 200	1.20			

# RAL 6014-GL

## YELLOW OLIVE

### GELBOLIV

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Novoperm Yellow M2R 70	2.44	20	high	
	Colortherm GN-M	82.65			
	Bayferrox 130 BM	12.28			
	COLOUR BLACK FW 200	2.63			

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# RAL 6015-GL

## BLACK OLIVE

### SCHWARZOLIV

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Green GNX	15.10	20	high	metamerism free
	Sicotan Yellow L 1910	20.60			
	Bayferrox 130 BM	54.53			
	Titanium dioxide Kronos 2310	9.77			

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# RAL 6016-GL

## TURQUOISE GREEN

## TÜRKISGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	18.28	20	high	metamerism free
	Hostaperm Green GNX	32.90			
	Titanium dioxide Kronos 2310	47.79			
	COLOUR BLACK FW 200	1.03			
2	Hostaperm Yellow H4G-EDS	9.60	20	high	
	Hostaperm Green GNX-EDS	37.50			
	Bayferrox 3920	5.76			
	Titanium dioxide Kronos 2310	46.30			
	COLOUR BLACK FW 200	0.84			
3	Hansa Brilliant Yellow 2GX 70-S	4.30	15	low	only for air-drying paints
	Hostaperm Green GNX	38.30			
	Titanium dioxide Kronos 2059	56.70			
	COLOUR BLACK FW 200	0.70			



# RAL 6017-GL

## MAY GREEN

## MAIGRÜN

Recipe number	FORMULATION	Parts	Pigmentation level related to solid binder	Durability	Remarks
		[%]	[approx. %]		
1	Hostaperm Yellow H3G	38.20	36	high	metamerism free
	Hostaperm Blue BT-617-D	1.50			
	Hostaperm Green GNX	2.15			
	Bayferrox 3920	25.13			
	Titanium dioxide Kronos 2310	33.02			
2	Hostaperm Yellow H4G-EDS	29.40	36	high	
	Hostaperm Blue B2G-EDS	1.60			
	Hostaperm Green GNX-EDS	4.30			
	Bayferrox 3920	26.70			
	Titanium dioxide Kronos 2310	38.00			
3	Novoperm Yellow 5GD 71	19.87	25	medium	
	Hostaperm Blue B2G-L	1.19			
	Hostaperm Green GNX	4.48			
	Bayferrox 3920	34.09			
	Titanium dioxide Kronos 2310	40.37			
4	Novoperm Yellow F2G	19.69	25	medium	
	Hostaperm Blue B2G-L	1.79			
	Hostaperm Green GNX	3.79			
	Bayferrox 3920	31.02			
	Titanium dioxide Kronos 2310	43.71			
5	Hansa Brilliant Yellow 2GX 70-S	25.51	20	low	only for air-drying paints
	Hostaperm Blue B2G-L	3.41			
	Hostaperm Green GNX	0.45			
	Bayferrox 3920	19.91			
	Titanium dioxide Kronos 2059	50.72			

# RAL 6018-GL

## YELLOW GREEN

## GELBGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	62.96	25	high	metamerism free
	Hostaperm Green GNX	4.12			
	Titanium dioxide Kronos 2310	32.82			
	COLOUR BLACK FW 200	0.10			
2	Hostaperm Yellow H4G	59.51	25	high	metamerism free
	Hostaperm Green GNX	4.57			
	Titanium dioxide Kronos 2310	35.69			
	COLOUR BLACK FW 200	0.23			
3	Hostaperm Yellow H4G-EDS	54.90	25	high	
	Hostaperm Green GNX-EDS	4.50			
	Titanium dioxide Kronos 2310	40.34			
	COLOUR BLACK FW 200	0.26			
4	Novoperm Yellow 5GD 71	37.35	25	medium	
	Hostaperm Green GNX	5.40			
	Bayferrox 3920	2.05			
	Titanium dioxide Kronos 2310	55.05			
	COLOUR BLACK FW 200	0.15			
5	Novoperm Yellow F2G	40.26	25	medium	
	Hostaperm Green GNX	5.52			
	Titanium dioxide Kronos 2310	?????			
	COLOUR BLACK FW 200	0.26			
6	Hansa Brilliant Yellow 2GX 70-S	14.95	25	low	only for air-drying paints
	Hansa Yellow 10G	32.48			
	Hostaperm Green GNX	5.65			
	Titanium dioxide Kronos 2059	46.67			
	COLOUR BLACK FW 200	0.25			

# RAL 6019-GL

## PASTEL GREEN

## WEISSGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	1.77	40	high	metamerism free
	Hostaperm Green GNX	0.38			
	Bayferrox 3920	1.79			
	Titanium dioxide Kronos 2310	96.02			
	COLOUR BLACK FW 200	0.04			
2	Hostaperm Yellow H4G-EDS	1.30	40	medium	
	Hostaperm Green GNX-EDS	0.20			
	Bayferrox 3920	1.10			
	Titanium dioxide Kronos 2310	97.38			
	COLOUR BLACK FW 200	0.02			
3	Hansa Yellow 10G	1.05	40	low	only for air-drying paints
	Hostaperm Green GNX	0.47			
	Bayferrox 3920	2.58			
	Titanium dioxide Kronos 2059	95.87			
	COLOUR BLACK FW 200	0.03			

# RAL 6020-GL

## CHROME GREEN

## CHROMOXIDGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	5.29	25	high	metamerism free
	Hostaperm Green GNX	7.99			
	Bayferrox 3920	73.27			
	Titanium dioxide Kronos 2310	9.59			
	COLOUR BLACK FW 200	3.86			
2	Hostaperm Yellow H4G-EDS	6.10	25	high	
	Hostaperm Green GNX-EDS	8.20			
	Bayferrox 3920	60.10			
	Titanium dioxide Kronos 2310	21.90			
	COLOUR BLACK FW 200	3.70			
3	Hansa Brilliant Yellow 2GX 70-S	16.10	25	low	only for air-drying paints
	Hostaperm Green GNX	4.70			
	Bayferrox 3920	48.40			
	Titanium dioxide Kronos 2059	14.40			
	LAMP BLACK 101	16.40			

# RAL 6021-GL

## PALE GREEN

## BLASSGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	6.40	35	high	metamerism free
	Hostaperm Green GNX	1.00			
	Bayferrox 3920	9.40			
	Titanium dioxide Kronos 2310	82.70			
	COLOR BLACK FW 200	0.50			
2	Hostaperm Yellow H4G-EDS	2.47	35	high	
	Hostaperm Green GNX-EDS	0.90			
	Bayferrox 3920	8.10			
	Titanium dioxide Kronos 2310	88.10			
	COLOUR BLACK FW 200	0.43			
3	Hansa Yellow 10G	1.19	35	low	only for air-drying paints
	Hostaperm Green GNX	1.70			
	Bayferrox 3920	15.29			
	Titanium dioxide Kronos 2059	81.50			
	COLOUR BLACK FW 200	0.32			

# RAL 6022-GL

## OLIVE DRAB

## BRAUNOLIV

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H4G	15.24	15	high	metamerism free
	Novoperm Yellow HR 71	41.89			
	Bayferrox 130 BM	17.16			
	Titanium dioxide Kronos 2310	14.22			
	COLOUR BLACK FW 200	11.49			
2	Novoperm Yellow F2G	11.09	15	medium	
	Novoperm Yellow HR 71	40.46			
	Bayferrox 130 BM	15.13			
	Titanium dioxide Kronos 2310	20.80			
	COLOUR BLACK FW 200	12.52			
3	Novoperm Yellow M2R 70-EDS	1.20	15	medium	
	Bayferrox 3920	85.40			
	Titanium dioxide Kronos 2310	6.40			
	COLOUR BLACK FW 200	7.00			

# RAL 6024-GL

## TRAFFIC GREEN

### VERKEHRSGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G Hostaperm Green GNX Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	30.56 14.22 54.68 0.54	25	high	metamerism free
2	Hostaperm Yellow H4G-EDS Novoperm Yellow M2R 70-EDS Hostaperm Green GNX-EDS Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	20.50 0.30 17.00 61.60 0.60	25	high	
3	Novoperm Yellow 5GD 71 Hostaperm Green GNX Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	14.88 16.68 67.78 0.66	25	medium	
4	Novoperm Yellow F2G Hostaperm Green GNX Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	13.68 16.53 69.04 0.75	25	medium	

# RAL 6025-GL

## FERN GREEN

## FARNGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	3.64	45	high	metamerism free
	Colortherm GN-M	76.20			
	Bayferrox 3920	14.99			
	Titanium dioxide Kronos 2310	5.17			
2	Hansa Brilliant Yellow 2GX 70-S	11.43	40	low	only for air-drying paints
	Colortherm GN-M	67.47			
	Titanium dioxide Kronos 2059	20.54			
	COLOUR BLACK FW 200	0.56			



# RAL 6026-GL

## OPAL GREEN

## OPALGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	1.73	15	high	
	Hostaperm Blue BT-627-D	1.73			
	Hostaperm Green GNX	52.53			
	Titanium dioxide Kronos 2310	43.29			
	COLOUR BLACK FW 200	0.72			
2	Hostaperm Green GNX	54.20	15	high	
	Titanium dioxide Kronos 2059	42.60			
	LAMP BLACK 101	3.20			

# RAL 6027-GL

## LIGHT GREEN

## LICHTGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	0.38	40	high	
	Hostaperm Blue A4R	0.19			
	Hostaperm Green GNX	1.34			
	Titanium dioxide Kronos 2310	97.91			
	COLOUR BLACK FW 200	0.18			
2	Hostaperm Blue A4R	0.31	40	high	
	Heliogen Green L 9361	2.07			
	Titanium dioxide Kronos 2059	97.12			
	LAMP BLACK 101	0.50			

# RAL 6028-GL

## PINE GREEN

### KIEFERNGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	30.29	20	high	metamerism free
	Hostaperm Blue A4R	7.12			
	Bayferrox 3920	25.24			
	Titanium dioxide Kronos 2310	35.25			
	COLOUR BLACK FW 200	2.10			
2	Novoperm Yellow F2G	8.35	25	medium	
	Hostaperm Blue A4R	8.56			
	Bayferrox 3920	45.63			
	Titanium dioxide Kronos 2310	35.75			
	COLOUR BLACK FW 200	1.71			
3	Hansa Brilliant Yellow 2GX 70-S	24.80	20	low	only for air-drying paints
	Hostaperm Blue A4R	8.74			
	Titanium dioxide Kronos 2059	62.93			
	COLOUR BLACK FW 200	3.53			
4	Hansa Yellow 10G	2.77	30	low	only for air-drying paints
	Hostaperm Blue A4R	9.07			
	Bayferrox 3920	64.19			
	Titanium dioxide Kronos 2059	23.61			
	COLOUR BLACK FW 200	0.36			

# RAL 6029-GL

## MINT GREEN

## MINZGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	36.04	15	high	metamerism free
	Hostaperm Green GNX	21.06			
	Heliogen Green L 9361	16.48			
	Titanium dioxide Kronos 2310	26.42			
2	Novoperm Yellow 5GD 71	22.34	15	medium	
	Hostaperm Green GNX	36.64			
	Bayferrox 3920	3.23			
	Titanium dioxide Kronos 2310	37.73			
	COLOUR BLACK FW 200	0.06			
3	Novoperm Yellow F2G	20.44	15	medium	
	Hostaperm Green GNX	37.48			
	Bayferrox 3920	7.13			
	Titanium dioxide Kronos 2310	34.95			
4	Hansa Yellow 10G	27.15	15	low	only for air-drying paints
	Hansa Brilliant Yellow 2GX 70-S	4.61			
	Hostaperm Green GNX	31.97			
	Bayferrox 3920	9.14			
	Titanium dioxide Kronos 2059	27.13			

# RAL 6032-GL

## SIGNAL GREEN

## SIGNALGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	27.09	30	high	metamerism free
	Hostaperm Green GNX	15.81			
	Bayferrox 3920	7.76			
	Titanium dioxide Kronos 2310	49.02			
	COLOUR BLACK FW 200	0.32			
2	Novoperm Yellow 5GD 71	10.74	30	medium	
	Hostaperm Green GNX	18.47			
	Bayferrox 3920	13.38			
	Titanium dioxide Kronos 2310	57.14			
	COLOUR BLACK FW 200	0.27			
3	Novoperm Yellow F2G	10.43	30	medium	
	Hostaperm Green GNX	18.13			
	Bayferrox 3920	12.24			
	Titanium dioxide Kronos 2310	58.93			
	COLOUR BLACK FW 200	0.27			
4	Novoperm Yellow F2G-EDS	9.80	30	medium	
	Hostaperm Green GNX-EDS	18.00			
	Bayferrox 3920	12.30			
	Titanium dioxide Kronos 2310	59.90			
5	Hansa Yellow 10G	16.43	30	low	only for air-drying paints
	Hostaperm Green GNX	15.31			
	Bayferrox 3920	18.22			
	Titanium dioxide Kronos 2059	49.30			
	LAMP BLACK 101	0.74			

# RAL 6033-GL

## MINT TURQUOISE

## MINTTÜRKIS

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue B2G-L Bayferrox 3920 Titanium dioxide Kronos 2059 LAMP BLACK 101	4.58 19.33 75.43 0.66	45	high	metamerism free

# RAL 6034-GL

## PASTEL TURQUOISE

## PASTELLTÜRKIS

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue B2G-L	1.18	45	high	
	Bayferrox 3920	4.53			
	Titanium dioxide Kronos 2059	93.87			
	LAMP BLACK 101	0.42			

# RAL 6035-GL

## PERL GREEN

## PERLGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Irgazin Yellow L 2040	10.72	40	high	
	Heliogen Green L 9361	75.58			
	Iriodin 9235 WR Rutile Green Pearl	11.69			
	Titanium dioxide Kronos 2310	1.97			
	COLOUR BLACK FW 200	0.04			



# RAL 6036-GL

## PERL OPAL GREEN

## PERLOPALGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Heliogen Green L 9361	53.53	25	high	
	Iriodin 9602 WR II Silver Grey	19.82			
	Iriodin 9612 WR II Silver Fine Grey	19.82			
	Graphitan 7525	6.83			

# RAL 6037-GL

## PURE GREEN

## REINGRÜN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Oxide Yellow BV 02 Hostaperm Yellow H4G 70 Hostaperm Green GNX	32.78 54.77 12.45	25	high	

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# RAL 7000-GL

## SQUIRREL GREY

### FEHGRAU

<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Yellow H3G	1.54	45	high	
	Hostaperm Blue BT-627-D	0.63			
	Bayferrox 130 BM	4.47			
	Titanium dioxide Kronos 2310	92.75			
	COLOUR BLACK FW 200	0.61			

# RAL 7001-GL

## SILVER GREY

## SILBERGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue BT-627-D	0.06	45	high	metamerism free
	Bayferrox 3920	0.33			
	Titanium dioxide Kronos 2310	98.78			
	COLOUR BLACK FW 200	0.83			

# RAL 7002-GL

## OLIVE GREY

## OLIVGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Sicotan Yellwo L 1910	43.97	35	high	
	Bayferrox 3920	0.66			
	Bayferrox 130 BM	1.06			
	Titanium dioxide Kronos 2310	52.77			
	COLOUR BLACK FW 200	1.54			

# RAL 7003-GL

## MOSS GREY

## MOOSGRAU

<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Sicotan Yellow L 1910	22.29	30	high	
	Bayferrox 3920	5.87			
	Bayferrox 130 BM	0.38			
	Titanium dioxide Kronos 2310	69.23			
	COLOUR BLACK FW 200	2.23			

# RAL 7004-GL

## SIGNAL GREY

## SIGNALGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 3920	2.24	40	high	
	Bayferrox 130 BM	1.37			
	Titanium dioxide Kronos 2059	94.62			
	LAMP BLACK 101	1.77			



# RAL 7005-GL

## MOUSE GREY

### MAUSGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue B2G-L Sicotan Yellow L 1910 Titanium dioxide Kronos 2059 COLOUR BLACK FW 200	0.16 8.97 87.67 3.20	40	high	

# RAL 7006-GL

## BEIGE GREY

## BEIGEGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 3920	24.64	25	high	
	Bayferrox 130 BM	5.52			
	Titanium dioxide Kronos 2310	67.36			
	COLOUR BLACK FW 200	2.48			

# RAL 7008-GL

## KHAKI GREY

## KHAKIGRAU

<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Sicotan Yellow L 1910	54.87	30	high	
	Bayferrox 3920	25.39			
	Bayferrox 130 BM	3.20			
	Titanium dioxide Kronos 2310	14.71			
	COLOUR BLACK FW 200	1.83			

# RAL 7009-GL

## GREEN GREY

## GRÜNGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Green GNX Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	0.84 25.95 68.35 4.86	40	high	

# RAL 7010-GL

## TARPAULIN GREY

### ZELTGRAU

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Green GNX	0.45	40	high	
	Bayferrox 3920	14.56			
	Titanium dioxide Kronos 2059	79.44			
	COLOUR BLACK FW 200	5.55			

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# RAL 7011-GL

## IRON GREY

## EISENGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue A2R	1.62	40	high	
	Bayferrox 3920	5.21			
	Bayferrox 130 BM	3.34			
	Titanium dioxide Kronos 2310	85.15			
	COLOUR BLACK FW 200	4.68			

# RAL 7012-GL

## BASALT GREY

## BASALTGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue B2G-L	2.54	40	high	
	Bayferrox 3920	8.81			
	Bayferrox 130 BM	11.44			
	Titanium dioxide Kronos 2310	74.48			
	COLOUR BLACK FW 200	2.73			

# RAL 7013-GL

## BROWN GREY

## BRAUNGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue B2G-L	3.36	40	high	
	Hostaperm Violet RL spec.	0.67			
	Sicotan Yellow L 1910	64.19			
	Bayferrox 130 BM	20.28			
	Titanium dioxide Kronos 2310	11.22			
	COLOUR BLACK FW 200	0.28			



# RAL 7015-GL

## SLATE GREY

### SCHIEFERGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	1.47	15	high	
	Hostaperm Violet RL spec.	0.47			
	Hostaperm Blue A4R	1.03			
	Bayferrox 3920	4.57			
	Titanium dioxide Kronos 2310	86.17			
	COLOUR BLACK FW 200	6.29			

# RAL 7016-GL

## ANTHRACITE GREY

## ANTHRAZITGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue B2G-L	2.62	40	high	
	Bayferrox 3920	10.12			
	Titanium dioxide Kronos 2310	73.65			
	COLOUR BLACK FW 200	13.61			

# RAL 7021-GL

## BLACK GREY

## SCHWARZGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 3920	19.19	40	high	
	Bayferrox 130 BM	3.55			
	Titanium dioxide Kronos 2310	56.38			
	COLOUR BLACK FW 200	20.88			

# RAL 7022-GL

## UMBRA GREY

## UMBRA GRAU

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Bayferrox 3920	29.18	40	high	
	Bayferrox 130 BM	5.18			
	Titanium dioxide Kronos 2310	56.70			
	COLOUR BLACK FW 200	8.94			

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# RAL 7023-GL

## CONCRETE GREY

## BETONGRAU

Recipe number	FORMULATION	Parts	Pigmentation level related to solid binder	Durability	Remarks
		[%]	[approx.%]		
1	Hostaperm Green GNX	1.27	45	high	
	Sicotan Yellow L 1910	18.41			
	Bayferrox 130 BM	6.35			
	Titanium dioxide Kronos 2310	73.09			
	COLOUR BLACK FW 200	0.88			

# RAL 7024-GL

## GRAPHITE GREY

## GRAPHITGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Violet RL spec. Hostaperm Blue B2G-L Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	3.81 1.51 5.69 57.56 31.43	40	high	

# RAL 7026-GL

## GRANITE GREY

## GRANITGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Green GNX	6.41	40	high	
	Bayferrox 3920	5.62			
	Titanium dioxide Kronos 2310	75.88			
	COLOUR BLACK FW 200	12.09			

# RAL 7030-GL

## STONE GREY

## STEINGRAU

<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Bayferrox 3920	6.27	40	high	
	Bayferrox 130 BM	0.56			
	Titanium dioxide Kronos 2310	92.00			
	COLOUR BLACK FW 200	1.17			



# RAL 7031-GL

## BLUE GREY

## BLAUGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue A4R Bayferrox 3920 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	1.23 3.32 91.79 3.66	40	high	

# RAL 7032-GL

## PEBBLE GREY

### KIESELGRAU

Recipe number	FORMULATION	Parts	Pigmentation level related to solid binder	Durability	Remarks
		[%]	[approx. %]		
1	Hostaperm Yellow H3G	1.59	45	high	metamerism free
	Bayferrox 3920	2.54			
	Bayferrox 130 BM	0.43			
	Titanium dioxide Kronos 2310	95.19			
	COLOUR BLACK FW 200	0.25			

# RAL 7033-GL

## CEMENT GREY

## ZEMENTGRAU

Recipe number	FORMULATION	Parts	Pigmentation level related to solid binder	Durability	Remarks
		[%]	[approx. %]		
1	Hostaperm Green H3G	7.74	40	high	metamerism free
	Hostaperm Green GNX	0.35			
	Bayferrox 130 BM	2.65			
	Titanium dioxide Kronos 2310	87.92			
	COLOUR BLACK FW 200	1.34			

# RAL 7034-GL

## YELLOW GREY

### GELBGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Yellow H3G	5.98	35	high	metamerism free
	Irgazin Yellow L 2060	6.19			
	Bayferrox 130 BM	0.66			
	Titanium dioxide Kronos 2310	85.95			
	COLOUR BLACK FW 200	1.22			
2	Novoperm Yellow F2G	4.39	35	medium	
	Novoperm Yellow HR 71	2.84			
	Bayferrox 130 BM	1.38			
	Titanium dioxide Kronos 2310	90.16			
	COLOUR BLACK FW 200	1.23			

# RAL 7035-GL

## LIGHT GREY

## LICHTGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Blue B2G-L Sicotan Yellow L 1910 Titanium dioxide Kronos 2059 COLOUR BLACK FW 200	0.01 2.36 97.48 0.15	40	high	

# RAL 7036-GL

## PLATINUM GREY

## PLATINGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E Sicotan Yellow L 1910 Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	0.58 10.62 87.78 1.02	45	high	metamerism free
2	Bayferrox 3920 Bayferrox 130 BM Titanium dioxide Kronos 2059 LAMP BLACK 101	3.79 2.40 91.68 2.13	50	high	

# RAL 7037-GL

## DUSTY GREY

## STAUBGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Sicotan Yellow L 1910	5.50	30	high	
	Bayferrox 3920	1.21			
	Bayferrox 130 BM	0.58			
	Titanium dioxide Kronos 2310	90.56			
	COLOUR BLACK FW 200	2.15			

# RAL 7038-GL

## AGATE GREY

## ACHATGRAU

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Sicotan Yellow L 1910	5.40	40	high	
	Bayferrox 130 BM	0.09			
	Titanium dioxide Kronos 2310	94.12			
	COLOUR BLACK FW 200	0.39			

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# RAL 7039-GL

## QUARTZ GREY

## QUARZGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 3920	13.08	40	high	
	Bayferrox 130 BM	1.91			
	Titanium dioxide Kronos 2310	81.64			
	COLOUR BLACK FW 200	3.37			

# RAL 7040-GL

## WINDOW GREY

### FENSTERGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	0.32	50	high	metamerism free
	Hostaperm Blue A4R	0.22			
	Sicotan Yellow L 1910	4.56			
	Titanium dioxide Kronos 2310	94.36			
	COLOUR BLACK FW 200	0.54			
2	Hostaperm Pink E	0.32	50	high	metamerism free
	Hostaperm Blue BT-627-D	0.22			
	Sicotan Yellow L 1910	4.56			
	Titanium dioxide Kronos 2310	94.36			
	COLOUR BLACK FW 200	0.54			

# RAL 7042-GL

## TRAFFIC GREY A

### VERKEHRSGRAU A

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<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Sicotan Yellow L 1910	1.05	40	high	
	Titanium dioxide Kronos 2310	97.69			
	COLOUR BLACK FW 200	1.26			

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# RAL 7043-GL

## TRAFFIC GREY B

## VERKEHRSGRAU B

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Green GNX	0.74	40	high	
	Bayferrox 3920	11.36			
	Titanium dioxide Kronos 2059	80.58			
	COLOUR BLACK FW 200	7.32			

# RAL 7044-GL

## SILK GREY

## SEIDENGRAU

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 3920 Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	2.47 0.18 97.07 0.28	40	high	

# RAL 7045-GL

## TELEGREY 1

## TELEGRAU 1

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	0.23	50	high	
	Hostaperm Blue B2G-L	0.13			
	Sicotan Yellow L 1910	3.08			
	Titanium dioxide Kronos 2310	95.58			
	COLOUR BLACK FW 200	0.98			

# RAL 7046-GL

## TELEGREY 2

## TELEGRAU 2

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Pink E	0.24	35	high	
	Hostaperm Blue B2G-L	0.25			
	Sicotan Yellow L 1910	2.17			
	Titanium dioxide Kronos 2310	95.71			
	COLOUR BLACK FW 200	1.63			

# RAL 7047-GL

## TELEGREY 4

## TELEGRAU 4

<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Hostaperm Pink E	0.03	40	high	
	Sicotan Yellow L 1910	0.98			
	Titanium dioxide Kronos 2310	98.87			
	COLOUR BLACK FW 200	0.12			



# RAL 8000 Colors

## RAL 8000 FARBTÖNE

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# RAL 8000-GL

## GREEN BROWN

## GRÜNBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Sicotan Yellow L 1910	14.88	15	high	metamerism free
	Bayferrox 3920	63.39			
	Bayferrox 130 BM	2.71			
	Titanium dioxide Kronos 2310	18.11			
	COLOUR BLACK FW 200	0.91			

# RAL 8001-GL

## OCHRE BROWN

## OCKERBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 3920 Bayferrox 130 BM COLOUR BLACK FW 200	94.79 5.15 0.06	40	high	

# RAL 8002-GL

## SIGNAL BROWN

## SIGNALBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 3920 Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	52.01 30.03 16.88 1.08	35	high	only for air-drying paints

# RAL 8003-GL

## CLAY BROWN

## LEHMBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	33.23	10	high	metamerism free
	Sicotan Yellow L 1910	53.59			
	Bayferrox 3920	9.89			
	Titanium dioxide Kronos 2310	1.48			
	COLOUR BLACK FW 200	1.81			

# RAL 8004-GL

## COPPER BROWN

## KUPFERBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	9.65	25	high	metamerism free
	Bayferrox 3920	47.65			
	Bayferrox 130 BM	28.47			
	Titanium dioxide Kronos 2310	13.92			
	COLOUR BLACK FW 200	0.31			
2	Hansa Red GG	6.37	25	low	only for air-drying paints
	Bayferrox 3920	52.43			
	Bayferrox 130 BM	28.01			
	Titanium dioxide Kronos 2059	12.88			
	LAMP BLACK 101	0.31			

# RAL 8007-GL

## FAWN BROWN

## REHBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	40.66	25	high	metamerism free
	Sicotan Yellow L 1910	13.29			
	Bayferrox 3920	39.22			
	Titanium dioxide Kronos 2310	4.18			
	COLOUR BLACK FW 200	2.65			

# RAL 8008-GL

## OLIVE BROWN

## OLIVBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Yellow HR 71	11.90	20	medium	
	Bayferrox 3920	68.11			
	Bayferrox 160 M	15.04			
	Titanium dioxide Kronos 2310	3.58			
	COLOUR BLACK FW 200	1.37			



# RAL 8011-GL

## NUT BROWN

## NUSSBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	26.65	25	high	metamerism free
	Bayferrox 3920	51.99			
	Bayferrox 130 BM	18.01			
	COLOUR BLACK FW 200	3.35			
2	Sicotan Yellow L 1910	24.26	20	high	
	Bayferrox 3920	28.74			
	Bayferrox 105 M	39.52			
	Titanium dioxide Kronos 2310	2.51			
	COLOUR BLACK FW 200	4.97			

# RAL 8012-GL

## RED BROWN

## ROTBRAUN

Recipe number	FORMULATION	Parts	Pigmentation level related to solid binder	Durability	Remarks
		[%]	[approx.%]		
1	Hostaperm Pink E	3.66	30	high	metamerism free
	Bayferrox 3920	30.74			
	Bayferrox 130 BM	59.11			
	Titanium dioxide Kronos 2310	4.61			
	COLOUR BLACK FW 200	1.88			

# RAL 8014-GL

## SEPIA BROWN

## SEPIABRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Sicotan Yellow L 1910 Bayferrox 130 BM COLOUR BLACK FW 200	20.42 56.83 14.88 7.87	25	high	metamerism free

# RAL 8015-GL

## CHESNUT BROWN

### KASTANIENBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Bayferrox 3920 Bayferrox 130 BM Titanium dioxide Kronos 2059 COLOUR BLACK FW 200	16.93 69.14 10.58 3.35	20	high	

# RAL 8016-GL

## MAHOGANY BROWN

## MAHAGONIBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	39.09	25	high	metamerism free
	Sicotan Yellow L 1910	26.18			
	Paliogen Maroon L 3920	16.39			
	Titanium dioxide Kronos 2310	12.39			
	COLOUR BLACK FW 200	5.95			

# RAL 8017-GL

## CHOCOLATE BROWN

## SCHOKOLADENBRAUN

Recipe number	FORMULATION	Parts	Pigmentation level related to solid binder	Durability	Remarks
		[%]	[approx.%]		
1	Novoperm Orange HL 70	4.01	40	high	
	Bayferrox 3920	44.30			
	Bayferrox 130 BM	39.92			
	Titanium dioxide Kronos 2310	2.44			
	COLOUR BLACK FW 200	9.33			

# RAL 8019-GL

## GREY BROWN

## GRAUBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Violet RL spec. Bayferrox 3920 Bayferrox 105 M Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	6.32 65.30 8.35 14.24 5.79	20	high	metamerism free

# RAL 8022-GL

## BLACK BROWN

## SCHWARZBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Sicotan Yellow L 1910	11.59	40	high	
	Bayferrox 130 BM	37.76			
	Titanium dioxide Kronos 2059	0.47			
	COLOUR BLACK FW 200	50.18			



# RAL 8023-GL

## ORANGE BROWN

## ORANGEBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Irgazin Yellow L 2060	51.66	20	high	metamerism free
	Hostaperm Scarlet GO	4.37			
	Bayferrox 130 BM	10.42			
	Titanium dioxide Kronos 2310	33.30			
	COLOUR BLACK FW 200	0.25			
2	Hansa Brilliant Yellow 2GX 70-S	31.40	30	low	only for air-drying paints
	Hansa Red GG	23.73			
	Bayferrox 130 BM	9.15			
	Titanium dioxide Kronos 2059	34.55			
	LAMP BLACK 101	1.17			

# RAL 8024-GL

## BEIGE BROWN

## BEIGEBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70	21.70	35	high	metamerism free
	Sicotan Yellow L 1910	21.61			
	Bayferrox 3920	21.63			
	Bayferrox 130 BM	5.39			
	Titanium dioxide Kronos 2310	27.86			
COLOUR BLACK FW 200	1.81				
2	Hansa Red GG	6.31	40	low	only for air-drying paints
	Bayferrox 3920	55.84			
	Bayferrox 130 BM	12.99			
	Titanium dioxide Kronos 2059	21.93			
	LAMP BLACK 101	2.93			

# RAL 8025-GL

## PALE BROWN

## BLASSBRAUN

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Novoperm Orange HL 70 Sicotan Yellow L 1910 Bayferrox 3920 Bayferrox 130 BM Titanium dioxide Kronos 2310 COLOUR BLACK FW 200	6.50 22.13 22.12 12.32 34.73 2.20	40	high	metamerism free
2	Bayferrox 3920 Bayferrox 130 BM Titanium dioxide Kronos 2059 LAMP BLACK 101	42.22 17.81 35.88 4.09	45	high	

# RAL 8028-GL

## TERRA BROWN

## TERRABRAUN

<b>Recipe number</b>	<b>FORMULATION</b>	<b>Parts</b>	<b>Pigmentation level related to solid binder</b>	<b>Durability</b>	<b>Remarks</b>
		[%]	[approx.%]		
1	Novoperm Orange HL 70	15.90	25	high	
	Bayferrox 3920	60.74			
	Bayferrox 130 BM	13.94			
	Titanium dioxide Kronos 2310	4.50			
	COLOUR BLACK FW 200	4.92			

# RAL 8029-GL

## PEARL COPPER

### PERLKUPFER

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Orange GR Iriodin 9502 WR Red Brown Iriodin 9505 WR Red Violet COLOUR BLACK FW 200	20.42 38.85 36.89 3.84	30	high	



# RAL 9000 Colors

## **RAL 9000 FARBTÖNE**

<b>RAL 9001-GL</b>	<b>CREAM / CREMEWEISS</b>	<b>208</b>
<b>RAL 9002-GL</b>	<b>GREY WHITE / GRAUWEISS</b>	<b>209</b>

# RAL 9001-GL

## CREAM

## CREMEWEISS

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Oxide Yellow BV 02	0.17	40	high	
	Bayferrox 3920	0.38			
	Bayferpx 130 BM	0.08			
	Titanium dioxide Kronos 2059	99.36			
	COLOUR BLACK FW 200	0.01			



# RAL 9002-GL

## GREY WHITE

## GRAUWEISS

Recipe number	FORMULATION	Parts [%]	Pigmentation level related to solid binder [approx. %]	Durability	Remarks
1	Hostaperm Oxide Yellow BV 02	0.25	40	high	
	Bayferrox 3920	0.41			
	Titanium dioxide Kronos 2059	99.27			
	COLOUR BLACK FW 200	0.07			

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PI2002ED | 03.2025