HEUCOSIN[™] & HEUCOSIN[™] SPECIAL & HEUCO[®] FIT LR



DRY PIGMENT PREPARATIONS FOR COATING APPLICATIONS





THE HEUCO® FIT CONCEPT

HEUCO® FIT is a pigment preparation concept consolidating Sudarshan's extensive pigment and pigment preparation know-how into ultimate and comprehensive pigment preparation lines offering customized color and performance solutions.

OUR HEUCO® FIT CONCEPT PRODUCT LINES

HEUCOSIN™: Solutions for RAL- and customized colors. These additive-free preparations are used in paints, coatings and plastics.

HEUCOSIN™ Special: RAL- and customized color solutions which are recommended for

high layer thickness systems such as floor coatings.

HEUCO® FIT LR: Direct replacements for chrome yellow and molybdate red pigments, suitable for coatings as well as for plastics applications.







UNIQUE TECHNOLOGY

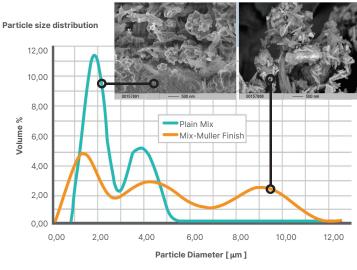
The very specific properties of HEUCOSIN™ preparations result from a unique finish technology. A combined co-finishing process including the mix mulling technology allows for intensive mixing and grinding. The resulting physical interlocking of the pigment surfaces minimizes the separation of

the predispersed pigments as well as the floating and flooding phenomenon later during film formation

In comparison to ordinary pigment blends the HEUCO® FIT preparations also exhibit outstanding batch-to-batch consistency. This allows to achieve perfectly uniform colors with the existing milling equipment used by the industrial paint manufacturers.

It is worthwile to mention that this ease of processing is based on the physical modification of the pigment.

Consequently, there is no negative influence on general film properties which is frequently observed when using ionic dispersing additives.



Mix Mulling Technology easy dispersion even at construction sites



HEUCOSIN™

The HEUCOSIN™ products are ready-to-use and customized multi-pigment preparations which are predispersed and adjusted to the most frequently used shades.

All grades exhibit universal processing characteristics and can easily be dispersed in most common binder systems.

To achieve an exceptionally homogeneous structure the different components of a color shade are powdery mixed and milled in a three step process resulting in interlocked pigments.

Excellent fastness properties

HEUCOSIN™ pigment preparations not only exhibit very good light and weather fastness but also excellent resistance to solvents, acids and alkalis. Additionally, they are adjusted to all kinds of required fastness and resistance properties.

Value-in-use

Formulation costs with HEUCOSIN™ are lower when compared to the total costs of handling and testing of several monopigments or monopigmented pastes on a commercial scale.

Customer demands

We are able to adjust HEUCOSIN $^{\text{\tiny M}}$ pigment preparations to any color shade with all kind of required fastness and resistance properties on customer demands.







	Shade	Name	Fastness Properties					
RAL			Wea- ther	Over- pain- ting	Acid	Alkali	Heat [°C]	
1001		G 6191	4 - 5	5	5	5	180	
1007		G 5891	4	5	5	4	180	
1018		G 7670	4	5	5	3	200	
1019		G 2186	4 - 5	5	5	5	180	
1021		G 7632	4	5	5	3	200	
1023		G 7632	4	5	5	3	200	
1028		G 7604	4	5	5	5	200	
2000		G 7626	4	4 - 5	5	5	180	
2004		G 7627	4	5	5	5	200	
3000		G 14676	4 - 5	5	5	5	200	
3002		G 14677	4 - 5	5	5	5	200	
3003		G 14678	3 - 4	5	5	5	180	
3020		G 14697	4 - 5	5	5	5	200	
5002		G 1737	4 - 5	5	5	5	160	
5002		G 2171	4 - 5	5	5	5	160	
5003		G 2017 N	4	5	5	5	160	
5007		G 1782	4 - 5	5	5	5	180	
5010		G 5303 N	4 - 5	5	5	5	180	
5012		G 14555	4 - 5	5	5	5	180	
5014		G 3276 N	4 - 5	5	5	5	180	
5015		G 1780 N	4 - 5	5	5	5	180	
6001		G 6861	4 - 5	5	5	5	160	
6002		G 6862	4	5	5	5	200	
6005		G 6865	4 - 5	5	5	5	180	
6010		G 6860	4 - 5	5	5	5	180	
6011		G 1901	4 - 5	5	5	5	180	

			Fastness Properties					
RAL	Shade	Name	Wea- ther	Over- pain- ting	Acid	Alkali	Heat [°C]	
6018		G 7671	4 - 5	5	5	3 - 4	200	
7000		G 1802 N	4 - 5	5	5	5	180	
7001		G 1882	4 - 5	5	5	5	180	
7005		G 1927	4 - 5	5	5	5	180	
7011		G 2033 N	4 - 5	5	5	5	180	
7012		G 14329	4 - 5	5	5	5	200	
7016		G 1978	4 - 5	5	5	5	180	
7023		G 2216 N	4 - 5	5	5	5	180	
7030		G 2229	4 - 5	5	5	5	180	
7031		G 1792	4 - 5	5	5	5	180	
7032		G 7748 N	4 - 5	5	5	5	180	
7035		G 1803	4 - 5	5	5	5	180	
8012		G 3489	4 - 5	5	5	5	180	
8015		G 4489 N	5	5	5	5	180	
8017		G 1700 N	4 - 5	5	5	5	180	
	Other H	EUCOSIN	™- Pre	eparat	ions			
Red		G 14500	4	5	5	5	200	
Red		G 7001	4 - 5	5	5	5	200	
Blue		G 5000	4 - 5	5	5	5	200	
Green		G 5005 N	4 - 5	5	5	5	200	
Grey		G 14739	4 - 5	5	5	5	180	
Black		G 5205	5	5	5	5	200	
Black		G 5955	5	5	5	5	200	

Suitability for food contact applications on request.

Due to limitation of printing process some slight variations between the color as illustrated may be observed.



POLYMER FLOOR COATINGS

HEUCOSIN™ Special pigment preparations is our principal product line developed to meet the specific requirements of thickfilm systems especially for polymer floor coatings. In most cases the desired color shades can only be obtained by blending color pigments with significant differences regarding surface characteristics and specific weights. As a consequence they tend to separate during the film forming process. This well-known

phenomenon is either called floating (horizontal separation) or flooding (vertical separation).

The first causes undesirable surface texturing (Bénard cells) whereas the latter alters the color shade as a result of pigments being distributed unevenly in the direction perpendicular to the pigment surface (rub-out test). These effects are frequently observed in thickfilm formulations.

MULTIPIGMENT PREPARATIONS

The HEUCOSIN™ Special products are ready-to-use pigment preparations which have been pre-dispersed and adjusted to the most commonly used RAL shades.

All grades exhibit universal processing characteristics and can easily be dispersed in solvent-free EP, PU, PMMA systems and waterborne EP formulations..



Minimized floating & flooding due to interlocking of the pigment surfaces.



			EP Coatings	ΡΟ	PMMA	Light	Weather	Acid	Alkali
	Full Shade	RAL	Арр		elds	1	Fastness	Properties	5
HEUCOSIN™ Special Beige G 10121 (Beige RAL 1001)		1001	• •	• •	• •	8	5	5	5
HEUCOSIN™ Special Yellow G 6514 N (Sand yellow RAL 1002)		1002	• •	• •	• •	8	5	5	5
HEUCOSIN™ Special Beige G 6515 N (Brown beige RAL 1011)		1011	• •	• •	• •	8	5	5	5
HEUCOSIN™ Special Yellow G 6530 N (Olive yellow RAL 1020)		1020	••	• •	• •	8	5	5	5
HEUCOSIN™ Special Red G 10345 (Tomato red RAL 3013)		3013	• •	• •	• •	7 - 8	4 - 5	5	5
HEUCOSIN™ Special Blue G 10248 (Azure blue RAL 5009)		5009	• •	• •	• •	7 - 8	4	5	5
HEUCOSIN™ Special Green G 6557 N (Leaf green RAL 6002)		6002	••	• •	• •	7 - 8	4 - 5	5	5
HEUCOSIN™ Special Green G 6516 N (Pale green RAL 6021)		6021	••	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 6555 N (Silver grey RAL 7001)		7001	••	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 10256 (Basalt grey RAL 7012)		7012	••	• •	• •	7 - 8	4	5	5
HEUCOSIN™ Special Grey G 10120 (Anthracite grey RAL 7016)		7016	••	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 6556 N (Concrete grey RAL 7023)		7023	••	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 6517 N (Stone grey RAL 7030)		7030	• •	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 6528 N (Blue grey RAL 7031)		7031	••	• •	• •	7 - 8	4 - 5	5	5
HEUCOSIN™ Special Grey G 6518 N (Pebble grey RAL 7032)		7032	• •	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 6531 N (Cement grey RAL 7033)		7033	• •	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 10139 (Light grey RAL 7035)		7035	• •	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 10140 (Dust grey RAL 7037)		7037	••	• •	• •	8	5	5	5
HEUCOSIN™ Special Grey G 10135 (Agate grey RAL 7038)		7038	••	• •	• •	8	5	5	5
		• • Recom	nmended	●Poten	itial Use	> Specia	al shades a	available o	n request

Due to limitation of printing process some slight variations between the color as illustrated may be observed.



HEUCO® FIT LR

The "HEUCO® FIT Lead Replacement" dry pigment preparations have been developed for direct 1:1 replacement of chrome yellow and molybdate red pigments. In selecting the pigments, the focus was on a good balance of the colorimetric properties and the hiding power in the near-full shade color range.

This is particularly interesting in the area of industrial coatings, since good substrate hiding by a one-coat application of the paint with low layer thickness is necessary.

The visual assessment of the full shade coat confirms the good conformity found colorimetrically.

These cost-designed pigment preparations meet most of the requirements of general industrial and plastics applications including agricultural, construction and earthmoving equipment (ACE). Thus HEUCO® FIT LR permits smart – i.e. rapid and cost-effective formulation.







	Full Shade	Fa	stness Propert	Application		
Products for Coatings		Weather 1)	Overpain- ting ²⁾	Heat Resi- stance	General Industrial	Plastics
HEUCO® FIT LR Yellow 1006401 4)		4	5	150	• •	
HEUCO® FIT LR Yellow 1006402 4)		3 - 4	4	150	• •	
HEUCO® FIT LR Yellow 1007001 4)		4	5	150	• •	
HEUCO® FIT LR Yellow 1007002 4)		4	4	150	• •	
HEUCO® FIT LR Red 3022001		4 - 5	5	170	• •	•
HEUCO® FIT LR Red 3022002		4 - 5	5	170	• •	•

	Full Shade	Fa	stness Propert	Application		
Products for Plastics		Weather ⁵⁾	Migration ⁶⁾	Heat Resistance [°C] 7)	General Industrial	Plastics
HEUCO® FIT LR Yellow 1006401P		3 - 4	5	280		• •
HEUCO® FIT LR Yellow 1007001P		3 - 4	5	280		• •

Due to the limitation of printing process, some slight variations between the color as illustrated may be observed.

Our Recommendation Potential Use

Weather Fastness: Data on resistance to artificial xeno weathering (DIN EN ISO 16474-2, procedure A, cycle 1) is determined in a 2-comp. polyurethane test system after 2000 hours weathering time. Rating of change in color in accordance with DIN EN ISO 105-A02.
 Overpainting: Bleeding was rated, of a white alkyd-melamine topcoat on a pigmented 2-comp. acrylate base coat in accordance with DIN EN ISO 105-A02.
 Heat Resistance: Pigment was exposed at different temperatures up to 250°C in a 2-comp. acrylate base coat for 30 minutes. Temperature, above which, a noticeable shade

change can be observed.

4) Pigments partially contain P.Y. 83 and should not be used at processing temperatures exceeding 200°C due to potential cleavage to 3,3′ - dichlorobenzidine (DCB) under

^{**}Pignents partially contain P.Y. 33 and should not be used at processing temperatures exceeding 200 C due to potential cleavage to 3,3 - dictionoberizinine (DCB) under these conditions.

5 Weather Fastness: Data on resistance to artificial xeno weathering (DIN EN ISO 4892-2, cycle 1, climate M) is determined in a rigid PVC test system after 2000 hours weathering time. Rating of change in color in accordance with DIN EN ISO 105-A02.

6 Migration: Migration was tested in a plasticized PVC system and rated in accordance with DIN EN ISO 105-A02.

7 Heat Resistance: Pigment was exposed in an injection moulding process at different temperatures up to 300°C in a HDPE testing system according to DIN EN 12877-2,

procedure B.



Our Service

At Sudarshan, customer satisfaction comes first. As a supplier of high-quality pigment and pigment preparation solutions we support our customers anywhere where pigments are in use.

With active service centers both globally and regionally we provide our customers with the technical support essential for the implementation of customer-specific requirements and solutions.

Fully equipped technical laboratories and centers enable us to carry out tests for all relevant applications, such as printing inks, paints and coatings, including corrosion protection, coil and powder coatings and plastics.

Custom color adjustments play a significant role both in coatings and plastics applications.

We have extensive expertise in the development of colors for a variety of plastics, paint and coating systems. Depending on fastness properties, application or processing requirements, we can deliver the right color for your application, plastic compounds or even a specific paint system.









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