

## Technical Data Sheet

### BAYFERROX® 316

#### Description

Type	Black pigment
Delivery form	Powder
Chemical class	Synthetic iron oxide Fe <sub>3</sub> O <sub>4</sub>
Colour Index	Pigment black 11 (77499)
CAS-No.	1317-61-9
REACH registration no.	01-2119457646-28

#### Specified Color Data

Colour values and tinting strength		
Standard	Bayferrox 316	
Year	1998	
<b>Binder:</b> Test paste based on a non drying alkyd resin	<b>Reduction</b> <sup>45</sup> with titanium dioxide (1:5)	<b>Test method</b> No. 001 <sup>41</sup>
	<b>min</b>	<b>max</b>
Δ a*	-0.7	0.7
Δ b*	-0.9	0.9
Δ E* <sub>ab</sub>		1.0
Relative tinting strength [%]	95	110

#### Specified Technical Data

Technical Data	min	max	Test method
Water-soluble content [%]		0.8	similar to DIN EN ISO 787-3:2000
Sieve residue (0.045 mm sieve) [%]		0.1	DIN EN ISO 787-7:2009
pH value	4.0	8.0	DIN EN ISO 787-9:1995

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### Informative Technical Data (guide values)

			Test method
Fe <sub>3</sub> O <sub>4</sub> content [%] <sup>53</sup>	>	96.7	Information about the determination of iron oxide <sup>41</sup> DIN 55913-2:1972
Loss on ignition at 1000 °C, 0.5 h [%] <sup>5</sup>	<	4.0	DIN EN ISO 787-2:1995
Moisture content (after production) [%]	<	3.0	Electron micrographs
Particle shape		spherical	Electron micrographs
Predominant particle size [µm]	~	0.3	DIN EN ISO 787-5:1995
Oil absorption [g/100 g]	~	21	similar to DIN EN ISO 787-11:1995
Tamped density [g/ml]		0.9 - 1.3	DIN EN ISO 787-10:1995
Density [g/ml]	~	4.6	

<sup>5</sup> In iron oxide black pigments, a chemical transformation (oxidation) is also recorded when determining the loss on ignition.

<sup>41</sup> Obtainable from LANXESS Deutschland GmbH, Business Unit Inorganic Pigments, <mailto:ipg.product-information@lanxess.com>

<sup>45</sup> Colour values after matching of the tinting strength parameter Y, i.e.  $\Delta L^*=0$

<sup>53</sup> Minor elements may arise from the raw materials used. However, these are firmly bound to the crystal lattice as ions.

## BAYFERROX® 316

### Packaging

Grades are delivered in different packaging materials. Please ask your local contact about the packaging for the grade in question or send an enquiry mailto: [ipg.product-information@lanxess.com](mailto:ipg.product-information@lanxess.com)

### Transport and Storage

General storage conditions:	Protect against weathering. Store in a dry place and avoid extreme fluctuations in temperature.
Maximum storage temperature:	During storage, temperatures above 80 ° C are to be avoided since irreversible changes in the color of the pigment can occur.
Special conditions for opened packaging:	Close bags after use to prevent the absorption of moisture and contamination.
Shelf life:	<p>This product has an excellent shelf life. We recommend that this product is used within ten years of the date of manufacture and limit our product warranty to this period. During the first ten years after the date of manufacture we are able to ensure compliance with this specification, provided the material has been stored as stated above and the packaging materials remain undamaged. It must be taken into account that the packaging mean can have a shelf life considerably shorter than the one for this product. All recommendations and warnings given on the packaging must strictly be adhered to. Deviations from storage conditions can lead to undesired changes on side of the packaging materials. These succumb to ageing which may also lead to compromising their capability. Concerning their estimated service life we differentiate between the following packaging materials:</p> <p>All kinds of bags (Paper and PE) ..... 5 years All kinds of Bulk bag ..... 3 years</p> <p>With respect to our Bulk Bags we recommend to avoid UV-radiation because the sewing material of the lifting loops is stabilized against degradation by UV-radiation for appr. 1000 h incident sun radiation for the climate of Central Europe. A more intense sun radiation can shorten this period significantly. In cases of doubt the lifting loops must be checked thoroughly.</p>

### Safety

Classification	<p>The product is not classified as dangerous under the relevant EC Directives and corresponding national regulations valid in the individual EU member states. It is not dangerous according to transport regulations.</p> <p>In countries outside the EU, compliance with the respective national legislation concerning the classification, packaging, labelling and transport of dangerous substances must be ensured.</p>
Additional Information	<p>The safety data sheet should be observed. This contains information on handling, product safety and ecology.</p> <p>The safety data sheet is available at <a href="http://www.bayferrox.com">www.bayferrox.com</a>.</p>

## BAYFERROX® 316

### Information concerning food contact regulations

This product complies with the regulatory requirements listed hereafter or may be used in accordance with those.

**Remark:**

We can only refer to regulations dealing directly with pigments or colourants. The compliance with laws and regulations dealing with the finished article lies completely in the responsibility of the manufacturer of those articles.

Council of Europe	<b>Resolution AP(89)1</b> on the use of colourants in plastic materials coming into contact with food
France	<b>Circulaire n°176</b> consolidée du 2 décembre 1959 modifiée relative aux pigments et colorants des matières plastiques et emballages.
Germany	<b>BfR IX</b> Empfehlung IX des Bundesinstituts für Risikobewertung vom 1. Juni 2019
Italy	<b>Decreto Ministeriale del 21/03/1973</b> Disciplina igienica degli imballaggi, recipienti, utensili, destinati a venire in contatto con le sostanze alimentari o con sostanze d'uso personale.
Netherlands	<b>Warenwetregeling verpakkingen en gebruiksartikelen:</b> Regeling van de Minister van Volksgezondheid, Welzijn van 14 maart 2014, kenmerk 328583-117560-VGP, houdende vaststelling van de Warenwetregeling verpakkingen en gebruiksartikelen die in contact komen met levensmiddelen.
Spain	<b>Real Decreto 847/2011,</b> de 17 de junio, por el que se establece la lista positiva de sustancias permitidas para la fabricación de materiales poliméricos destinados a entrar en contacto con los alimentos.
Switzerland	<b>817.023.21</b> Verordnung des EDI über Materialien und Gegenstände, die dazu bestimmt sind, mit Lebensmitteln in Berührung zu kommen (Bedarfsgegenständeverordnung) vom 16. Dezember 2016 (Stand am 1. Dezember 2019)
Australia	<b>AS 2070-1999</b> Plastic materials for food contact use
Brazil	<b>RDC Nº 52</b> Dispõe sobre corantes em embalagens e equipamentos plásticos destinados a estar em contato com alimentos.
China	Black iron oxides are listed in <b>GB 9685-2016</b> with FCA number 1161. For detailed information about limitations please refer to the standard itself.
Japan	<b>JHOSPA</b> Self-Restrictive Requirements on Food-Contacting Articles made of Polyolefins and certain Polymers PART 2 POSITIVE LISTS, 2-3 COLORANTS
MERCOSUR	<b>GMC/RES. Nº 15/10</b> REGLAMENTO TÉCNICO MERCOSUR SOBRE COLORANTES EN ENVASES Y EQUIPAMIENTOS PLÁSTICOS DESTINADOS A ESTAR EN CONTACTO CON ALIMENTOS
USA	<b>FDA 21 CFR § 178.3297</b> (Colorants for polymers)

## BAYFERROX® 316

### Status of Registration

The components of this product are listed on the following inventories:				
Europe: EINECS	USA: TSCA	Canada: DSL	Australia: AICS	New Zealand: NZIOC
Philippines: PICCS	Japan: ENCS + ISHL	Korea: ECL	China: IECSC	Taiwan: NECSI