

Technical Data Sheet

BAYFERROX® 318 M

Description

Type	Black pigment - High Performance micronised
Delivery form	Powder
Chemical class	Synthetic iron oxide Fe_3O_4
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 318 M		
Year	2021		
Binder: Test paste based on a non drying alkyd resin	Reduction ⁴⁵ with titanium dioxide (1:5)	Test method No. 001 ⁴¹	
Δa^*	-0.5	0.5	
Δb^*	-0.6	0.6	
ΔC^*_{ab}	-0.6	0.6	
ΔH^*_{ab}	-0.7	0.7	
ΔE^*_{ab}		0.8	
Relative tinting strength [%]	95	105	

Specified Technical Data

Dispersibility		max	Test method
Fineness of grind [µm]		30/50/75	No. 004 ⁴¹
Technical Data	min	max	Test method
Water-soluble content [%]		0.7	similar to DIN EN ISO 787-3:2000
Sieve residue (0.045 mm sieve) [%]		0.005	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 ₃ O ₄ content [%] ⁵³	>	96.8	Information about the determination of iron oxide ⁴¹
Loss on ignition at 1000 °C, 0.5 h [%] ⁵	<	5	DIN 55913-2:1972
Moisture content (after production) [%]	<	2.5	DIN EN ISO 787-2:2021
Particle shape		spherical	Electron micrographs
Predominant particle size [µm]	~	0.2	Electron micrographs
Oil absorption [g/100 g]	~	21	DIN EN ISO 787-5:1995
Tamped density [g/ml]		0.8 - 1.2	similar to DIN EN ISO 787-11:1995
Density [g/ml]	~	4.6	DIN EN ISO 787-10:1995

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

⁴¹ Please use our contact form on the Internet at www.bayferrox.com for more information.

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

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

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Packaging

Our products are supplied in various types of packaging. To find out in which types of packaging this product is offered, please ask your local contact or use our contact form on the Internet at www.bayferrox.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 www.bayferrox.com.</p>

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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	Resolution AP(89)1 on the use of colourants in plastic materials coming into contact with food
France	Circulaire n°176 consolidée du 2 décembre 1959 modifiée relative aux pigments et colorants des matières plastiques et emballages.
Germany	BfR IX Empfehlung IX des Bundesinstituts für Risikobewertung vom 1. Juni 2019
Italy	Decreto Ministeriale del 21/03/1973 Disciplina igienica degli imballaggi, recipienti, utensili, destinati a venire in contatto con le sostanze alimentari o con sostanze d'uso personale.
Netherlands	Warenwetregeling verpakkingen en gebruiksartikelen: 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	Real Decreto 847/2011, 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	817.023.21 Verordnung des EDI über Materialien und Gegenstände, die dazu bestimmt sind, mit Lebensmitteln in Berührung zu kommen (Bedarfsgegenstandsverordnung) vom 16. Dezember 2016 (Stand am 1. Dezember 2019)
Australia	AS 2070-1999 Plastic materials for food contact use
Brazil	RDC Nº 52 Dispõe sobre corantes em embalagens e equipamentos plásticos destinados a estar em contato com alimentos.
China	Black iron oxides are listed in GB 9685-2016 with FCA number 1161. For detailed information about limitations please refer to the standard itself.
Japan	JHOSPA This product complies with Japanese Food sanitation law amended in June 2020. As there is no specific positive list for pigments the JHOSPA list for pigments remains valid until further announcement.
MERCOSUR	GMC/RES. Nº 15/10 REGLAMENTO TÉCNICO MERCOSUR SOBRE COLORANTES EN ENVASES Y EQUIPAMIENTOS PLÁSTICOS DESTINADOS A ESTAR EN CONTACTO CON ALIMENTOS
USA	FDA 21 CFR § 178.3297 (Colorants for polymers)

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Status of Registration

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