

Carbon Black Pigment for food packaging printing inks

Technical Information 1453



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Introduction

The safety of food is vital to all consumers. Regulations governing the actual food products and packaging materials are well established and enforced. However, it was only in the last 20 years that any regulations relating to Carbon Black Pigments used for food packaging were issued – and initially only for plastics.

In the past the printing ink market has shown a very high growth rate for printed products for convenience foods and especially for flexible packaging. This also applies to developing countries. Increased customer demand to display more information on the packaging (e.g. best before dates, nutrition information etc.) consequently lead to higher ink consumption.

Although this is good news for the printing ink manufacturers, some ink components are not suitable for food packaging, as these require special safety regulations to protect consumer's health. Therefore it is necessary to further improve printing inks for food packaging and find alternatives that are suitable and comply with European standards.

European regulations primarily apply to toluene extractables and Benzo(a)pyrene content.

We at Orion Engineered Carbons supply several products recommended for food packaging, which are suitable for indirect food contact. Our products fulfill the requirements of European regulations.

Relevant regulations

Relevant regulations for printing inks for food packaging are:

1) Commission Regulation (EU) No. 10/2011

"Carbon Black", FCM*-substance No 411, Ref. No. 42080 is listed as additive in Annex I "Union list" of Commission Regulation (EU) No. 10/2011 on plastic materials and articles intended for food contact with the following specification:

- Primary particles of 10 – 300 nm which are aggregated to a size of 100 – 1200 nm which may form agglomerates within the size distribution of 300 nm – mm
- Toluene extractables: maximum 0.1 %, determined according to ISO method 6209
- UV absorption of cyclohexane extract at 386 nm: < 0.02 AU for a 1 cm cell or < 0.1 AU for a 5 cm cell, determined according to a generally recognised method of analysis
- Benzo(a)pyrene content: max 0.25 mg/kg Carbon Black

The following restriction applies to FCM-substance No. 411:

- Maximum use level of Carbon Black in the Polymer: 2.5 % w/w



*) FCM = Food Contact Material

2) Swiss Ordinance 817.023.21

The Swiss Federal Department of Home Affairs (FDHA) recently adopted an amendment to the Ordinance of November, 23rd 2005 on materials and articles (SR 817.023.21) detailing certain provisions relating to packaging inks. Within this amendment, introduced on March, 7th 2008 and coming into force on April, 1st 2010, Article 26 g details the requirement that only permitted substances should be used in manufacturing of packaging inks.

In amendment of SR 817.023.21 (dated February, 1st 2011), Annex 6, list II, part A, Carbon Black is listed to packaging inks. The purity specifications for pigments are defined in list III, item 9 (November, 23rd 2005).

Product recommendations

Application	Recommendation*
Sheetfed	PRINTEX® 45 powder PRINTEX® 35 powder PRINTEX® Nature
Solvent based packaging	PRINTEX® 35 powder or beads SPECIAL BLACK 350 powder SPECIAL BLACK 535 beads PRINTEX® Nature
Water based packaging for cardboards	PRINTEX® 3 powder PRINTEX® 30 powder PRINTEX® Nature
Water based packaging for film	PRINTEX® 45 powder PRINTEX® 35 powder PRINTEX® Nature
UV curing systems	SPECIAL BLACK 350

* Valid only for grades manufactured in Germany

Recommendation is based on the physico chemical data and the resulting performance in the particular printing ink systems.

3) French AVIS Séance du 07.11.1995 (encres et vernis pour l'impression des emballages)

Specification for "Carbon Black"

Toluene extractables: max. 0.15 %

Benzo(a)pyrene content: ≤ 30 µg/kg Carbon Black

Even though this regulation is the strictest, Orion Engineered Carbons products meet these requirements.

Details on specific product recommendations can be found in the table below:

Product safety information

If you want to know more about the product safety status of our products, please contact us. We will be happy to answer individual questions.



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