

## Product Specifications

| January 2020



### Introducing the Drinking Mug, made using XDETECT®

This 1 pint (568ml) drinking mug is ideal for sampling, scooping, testing, and of course drinking. The thick walls and strong, robust design makes this heavy duty mug ideal for the harshest production environments.

The mug is made using our own XDETECT polypropylene co-polymer formulation, which offers market leading detectability, impact resistance, visual brightness and food standards compliance.

### Product Advantages

- ✓ Heavy duty construction for use in harsh production environments
- ✓ Detectable by both metal detection and x-ray inspection systems
- ✓ Shatter Resistant Polymer means near impossible to break
- ✓ FDA Approved & EU Compliant for direct food contact
- ✓ Displays due diligence in the prevention of foreign body contamination

<b>Order Code:</b>	8950005-B
<b>Pack Size:</b>	1
<b>Product Material:</b>	XDETECT [Polypropylene Co-Polymer]
<b>Product Weight:</b>	0.08 Kg
<b>Mug Height:</b>	103 mm
<b>Mug External Diameter:</b>	95 mm
<b>Mug Internal Diameter:</b>	86 mm

## PRODUKTINFORMATIONEN

**Product Colours:** Blue - [Others available upon special request]

**Capacity:** 1 Pint / 568ml

### Food Contact Status

Hereby we declare that the material XDETECT in various colours is manufactured in line with the relevant requirements of 2023/2006/EC on good manufacturing practice (GMP) for materials and articles intended to come into contact with food. The raw materials used in the manufacturing process of the above mentioned materials can be considered suitable for food contact applications in terms of compliance with European regulations. The raw materials used meet the relevant requirements of EU Framework Regulation 1935/2004 as amended up to 202/2014/EC on materials and articles intended to come into contact with food.

All monomers, starting substances and additives used to manufacture these grades are listed in Commission Regulation (EU) No. 10 (2011) on plastic materials and articles intended to come into contact with food. Applicable restrictions on monomers, additives etc. (SML, QM) are available on request. The finished articles are required to meet the Overall Migration Limit (OML) of 10 mg/dm(sq) or 60 mg/kg food. Colourants used are compliant with European Council Resolution AP(89) 1 on the use of colourants in plastic materials coming into contact with food.

XDETECT (various colours) is compliant with Directive 1895/2005/EC on the restriction of use of certain epoxy derivatives (BADGE, BFDGE, NOGE), since the latter substances are not intentionally used in the manufacturing process of XDETECT.

Niebling hereby declare that articles manufactured from XDETECT are, according to EU regulations, authorised to come into direct contact with all types of foodstuffs at a maximum temperature of 40°C for a maximum time period of one hour.

### Migration Testing

The following overall migration results for XDETECT 2.0 were obtained using a UKAS accredited laboratory, with overall migration simulants and conditions as detailed in EU Regulation No 10/2011 as amended, on plastic materials and articles intended to come into contact with food.

**Sample:** PP-C-2013/393

**Test conditions:** Simulants A, B and 95%v/v ethanol: 10 days at 40°C. Iso-octane: 2 days at 20°C

Method	EN-1186-3 Migration into 10% v/v Ethanol (Simulant A)	EN-1186-3 Migration into 3% w/v Acetic Acid (Simulant B)	EN-1186-14§ Migration into Iso- octane (Substitute test)	EN-1186-14§ Migration into 95% Ethanol (Substitute test)
Replicate #1	0.2 mg/dm <sup>2</sup>	0.5 mg/dm <sup>2</sup>	19.4 mg/dm <sup>2</sup>	0.8 mg/dm <sup>2</sup>
Replicate #2	0.3 mg/dm <sup>2</sup>	0.5 mg/dm <sup>2</sup>	21.0 mg/dm <sup>2</sup>	0.9 mg/dm <sup>2</sup>
Replicate #3	0.0 mg/dm <sup>2</sup>	0.3 mg/dm <sup>2</sup>	20.8 mg/dm <sup>2</sup>	0.6 mg/dm <sup>2</sup>
<b>Mean Result</b>	<b>0.2 mg/dm<sup>2</sup></b>	<b>0.4 mg/dm<sup>2</sup></b>	<b>20.4 mg/dm<sup>2</sup></b>	<b>0.8 mg/dm<sup>2</sup></b>
<b>EU Limit</b>	<b>10.0 mg/dm<sup>2</sup></b>	<b>10.0 mg/dm<sup>2</sup></b>	<b>#20.0 mg/dm<sup>2</sup></b>	<b>10.0 mg/dm<sup>2</sup></b>
<b>Tolerance</b>			<b>#6.0 mg/dm<sup>2</sup></b>	

**#Limit and tolerance are quoted after the application of a fatty food reduction factor of 2 as quoted in EU Regulation 10/2011**

To summarise the overall migration test results, the PP-C-2013/393 complies with the overall migration requirements given in EU Regulation 10/2011, as amended, with regards to use with all non-fatty foods, aqueous foods and fatty foods that require a reduction factor of 2 (or greater), as given in EU regulation 10/2011, as amended.

## PRODUKTINFORMATIONEN

### Statement of EU Food Contact Compliance

Nielbling hereby declare that articles manufactured from XDETECT are, according to EU regulations, authorised to come into direct contact with all types of foodstuffs at a maximum temperature of 40°C for a maximum time period of one hour.

### Statement of USA Food Contact Compliance

The polypropylene base resin used in XDETECT meets the FDA (Food and Drug Administration) requirements contained in the Code of Federal Regulations – latest revision (1/4-2011) - in 21 CFR 177.1520 (a) (3) (i) , (b) and (c)(3.1a).

At the same time this base resin grade meets the FDA criteria in 21 CFR 177.1520 for food contact applications, excluding cooking, listed under conditions of use C through H in 21 CFR 176.170 (c), Table 2., and can be used in contact with all food types as listed in 21 CFR 176.170 (c), Table 1. Also the mineral additives and the pigments used are GRAS (Generally Recognized As Safe) or are FDA cleared under specific FDA citations.

### Metal Detectability (FOR GUIDANCE ONLY)

XDETECT is an electromagnetically detectable and x-ray visible plastic compound. The metal detectability of this compound will vary based on, but not limited to the following factors:

- Detector Calibration Levels
- Food Product Type / Effect (E.g. Wet, Dry, Frozen, Liquid)
- Detector Aperture Dimensions
- Contaminant Orientation

For this reason Nielbling recommend that all our products be thoroughly tested on your metal detection systems by a trained and certified professional. It may be the case that your equipment needs to be recalibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your metal detection system. XDETECT samples gave following test piece equivalent readings when tested through the geometric centre of an Anritsu KD8124AW coaxial metal detection system with a 95 x 450 mm aperture:

XDETECT Contaminant Size	Advised Minimum Ferrous Sensitivity for Detection
4.0 mm <sup>3</sup> Cube	2.0 mm FE
6.0 mm <sup>3</sup> Cube	2.5 mm FE
7.0 mm Ø Sphere	2.5 mm FE
8.0 mm <sup>3</sup> Cube	3.5 mm FE
11.0 mm Ø Sphere	4.0 mm FE

Although designed to be detected as a ferrous contaminant, XDETECT will also trigger smaller readings as a non-ferrous and stainless steel contaminant. Please note that the above information is for guidance only, and performance will vary.

## PRODUKTINFORMATIONEN

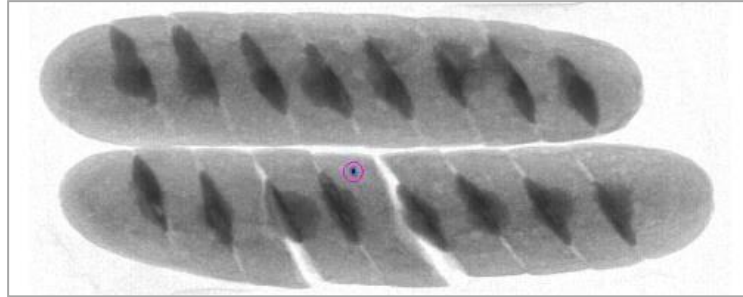
**X-Ray Visibility (FOR GUIDANCE ONLY)**

In contrast to metal detection, x-ray visibility is determined by material density. For this reason, XDETECT contains an additional, evenly dispersed, food safe, high density additive.

Based on our experience and testing, positive readings should be consistent for XDETECT fragments as small as 5mm<sup>3</sup>.

X-ray detection performance will be reduced when small fragments are buried in deeper, denser products.

**Detection will depend on product type and density.** This screenshot shows a 5mm<sup>3</sup> XDETECT fragment through a popular x-ray inspection system, inside a packaged garlic bread product.



We highly recommend that all our products be thoroughly tested on your x-ray inspection systems by a trained and certified professional. It may be the case that your equipment needs to be recalibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your x-ray inspection system.

**DISCLAIMER**

The information provided in this product specification sheet is based on our experience and knowledge to date and we believe it to be true and reliable. This information is intended as a guide for your use of our products, the use of which is entirely at your own discretion and risk. We, Niebling Technische Bürsten GmbH, cannot guarantee favourable results and assume no liability in connection with the use of our products.