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Product Specification Sheet

Eco DetectaPen |

The DetectaPen Range

The DetectaPens are industry renowned as the highest quality choice of stationery for use in hygiene critical food processing environments. Every feature of the pen is designed with the food industry in mind, resulting in a truly unique set of properties designed to minimise contamination risks and improve food safety. The DetectaPen range is manufactured using our flagship XDETECT plastic compound – optimised for metal and x-ray detection in the food and pharmaceutical industries. Our DetectaPen range also incorporates silver ion antibacterial technology, which is effective against E-Coli, MRSA & Salmonella. All materials used in the construction of our pens feature extensive food contact approvals including FDA, EU and Japanese compliance, with full documentation including migration test data. The DetectaPens are also Kosher and Halal certified. Our Eco style DetectaPen® has a hexagonal profile to stop the pen rolling from surfaces. All our DetectaPen® designs feature minimal germs traps and are ergonomically designed making them easy to hold, so less ikely to be dropped.
All DetectaPens® are available with or without a dual detectable clip. The clip is moulded in to the pen making it near impossible to snap off without the use of tools. They all feature high quality metal, fully detectable ink cartridges, further adding to the detectability of the pen.

The Product Description

The Eco DetetaPen® is the best value for money detectable pen available. The beautifully simple design comprises of only two components, the ink cartridge and the pen body. The solid brass ink cartridge is permanently encased within the detectable pen body.

The Eco pen features a hexagonal profile, which assists with grip and also stops the pen rolling on uneven work surfaces. Available with a nickel plated or brass nib, with a 1mm stainless steel writing ball that offers a smooth and smudge free writing experience.

The Eco pen is also available with or without a clip. Please note that the clip does not constitute an additional pen component, as clipped pens are moulded from one piece material, meaning the clip will not fall off and become a potential contaminant. The clip is also designed to bend – not snap off.

PRODUKTINFORMATIONEN

DetectaPen Range Advantages

- ✓ Detectable by in-line metal detection systems & x-ray inspection systems
- ✓ Incorporates antibacterial technology to protect against pathogenic germs and moulds
- ✓ Available in up to 9 bold colours for easy visual identification (Varies per model)
- ✓ Available with or without clip, clipless options are available in blue and red bodies only
- ✓ Strong, durable, shatter resistant & chemically resistant material
- ✓ Compliant with EU & FDA food contact legislation, including mandatory EU migration test standards
- ✓ Available in a variety of body colours and ink colours to suit specific requirements
- ✓ Can be used as part of HACCP and BRC procedures
- ✓ Displays due diligence in the prevention of foreign body contamination

Product and Packaging Information

Brass w Clip:	8900112-
Brass w/o Clip:	
Nickel w Clip:	8900102-, 8900103-, 8900105-, 8900106
Nickel w/o Clip:	8900002-, 8900006-
Pack Size:	50
Pack Weight:	0.35 kg
Body Colours:	B, R, G, Y, W, K, OR, PN, P
Ink Colours:	B, K, R*, G* (*brass only)
Detectability:	Metal & X-Ray Visible
AntiBacterial:	Yes
Housing Material:	XDETECT
Cartridge Material:	Brass
Write Out Length:	2800m +/- 20%
Commodity Code:	96081010

Ink Specification

Unpressurised ink
MITI Listed (Japan)
ISO 12575 - 2 DOC G2
ISO 12575 - 2 DOC A2
ISO 12575 - 1
ISO 12575 - 2 DOC H
ISO 12575 - 1 A M
ISO 12757-2
ISO 12575-2 G2 M
TSCA Listed (USA)

Safety Certificates / Approvals

FDA Approved

EU Compliant

Kosher Certified

Incorporates SteriTouch

BRC Compliant

ISO 9001:2015

Food Contact Status (EU)

Hereby we declare that the material XDETECT®in various colours is manufactured in line with the relevant requirements of 2023/2006/EC as amended by Commission Regulation (EC) 282/2008, 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 (XDETECT® in various colours) 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 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 as amended by (EU) 321/2011, (EU) 1282/2011, (EU)1183/2012, (EU) 202/2014, (EU) 2015/174, (EU) 2016/1416, (EU) 2017/752, (EU) 2018/79, (EU) 2018/213, (EU) 2018/831, (EU) 2019/37, (EU) 2019/1338), and (EU) 2020/1245 respectively, related to Plastic Materials and Articles intended to come into contact with foodstuffs

Colourants used are compliant with European Council Resolution AP(89) 1 on the use of colourants in plastic materials coming into contact with food, and also with German BfR Recommendations (IX)

We 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.

Food Contact Status (FDA)

The polypropylene base resin used in HDPE meets the FDA (Food and Drug Administration) requirements contained in the Code of Federal Regulations in 1 CFR 177.1520. 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.

Food Contact Status (Japan)

The base resin (PP copolymer) used in the manufacturing process of the above mentioned compounds is listed in the Positive List of Base Polymers (Table 1). The additives used in the manufacturing process of the PP-C resin are listed in the Positive List of Additives (Table 2) authorised for use in this base resin.

Animal Derivatives

To the best of our knowledge there are no ingredients in the formulation of this material that is of animal origin. As such, this material should not pass on any animal derived disease like BSE (Bovine Spongiform Encephalopathy) or other TSE (Transmissible Spongiform Encephalopathy).

Migration Testing

The following overall migration results for XDETECT® 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/dm2	0.5 mg/dm2	19.4 mg/dm2	0.8 mg/dm2
Replicate #2	0.3 mg/dm2	0.5 mg/dm2	21.0 mg/dm2	0.9 mg/dm2
Replicate #3	0.0 mg/dm2	0.3 mg/dm2	20.8 mg/dm2	0.6 mg/dm2
Mean Result	0.2 mg/dm2	0.4 mg/dm2	20.4 mg/dm2	0.8 mg/dm2
EU Limit	10.0 mg/dm2	10.0 mg/dm2	#20.0 mg/dm2	10.0 mg/dm2
Tolerance			#6.0 mg/dm2	

#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 regard 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.

DetectaPen® Antibacterial Technology

DetectaPen Products are manufactured from XDETECT with built in silver ion antimicrobial technology, supplied by our partner. This technology offers continuous protection against cross infection, reducing the risk of spreading pathogenic germs such as MRSA, E.Coli and Salmonella. The antibacterial surface protection harnesses the natural sterilising properties of silver; this protection is permanently embedded into the XDETECT compound and will not wear off over time.

These antibacterial properties have been laboratory tested and proven to be effective against harmful bacteria and mould including but not limited to:

Bacterium
Bacillus Cereus
Bacillus Subtilis
Campylobacter
Klebsiella Pneumonia
Pseudomonas Aeruginosa
Steptococcus Mutavs
Streptococcus Pyogenes
Vibri Parahaemolyticus
MRSA
E.Coli
Salmonella

Fungus
Aspergillus Niger
Aureobasidium Pullulans
Candida Albicans
Cladosporium Cladosporioides
Fusarium Solani
Penicillium Funiculosum

DetectaPen® Antibacterial Technology Continued

The antibacterial additive used in XDETECT® complies with the relevant requirements of Regulation 1935/2004/ EC (Framework Regulation), applicable to intermediate materials (e.g. plastic powders, plastic granules or plastic flakes) and also with the relevant requirements of Regulation 10/2011/EC (PIM), applicable to intermediate materials (e.g. plastic powders, plastic granules or plastic flakes).

The monomers and additives used to produce the antibacterial additive are listed in the Union List of Authorized Substances of Regulation 10/2011/EC. Dual use additives subject to restrictions in food as defined in Regulation 10/2011/EC are not intentionally used in the manufacture of or formulation of this product.

Antibacterial Laboratory Testing Method

All testing is conducted by an independent laboratory using the JIS Z 2801:2000 test method. Where possible, all test materials are taken from samples of the actual product. Samples typically measure 50mm x 50mm as specified by the JIS Z 2801:2000 method, although where this is impractical it is permissible to use smaller samples with the method being modified accordingly.

Each test sample is inoculated with a suspension of the test organism (for example MRSA). The inoculum is held in contact with the test sample using a sterile polyethylene film. All test samples are inoculated in triplicate, with an additional three replicates of the control.

The bacterial population on three control replicates is evaluated immediately following inoculation. This is assumed to be the initial population on all test samples. The remaining samples are incubated for the test period (typically 24 hours) at 35°C, at which time the bacterial population is evaluated.

Antibacterial Laboratory Testing Results

Salmonella Results Table

Sample Material	Bacterium	CFU at 0 Hours	CFU at 24 Hours	Comparison
Control	Salmonella, enteritidis	150000	140000	N/A
XDETECT	Salmonella. enteritidis	150000	<10	99.999% reduction

MRSA Results Table

Sample Material	Bacterium	CFU at 0 Hours	CFU at 24 Hours	Comparison
Control	MRSA	100000	470000	N/A
XDETECT A	MRSA	100000	<10	99.998% reduction
XDETECT B	MRSA	110000	<10	99.998% reduction
XDETECT C	MRSA	110000	<10	99.998% reduction

E.Coli Results Table

Sample Material	Bacterium	CFU at 0 Hours	CFU at 24 Hours	Comparison
Control	E.Coli	140000	11000000	N/A
XDETECT A	E.Coli	140000	<10	99.999% reduction
XDETECT B	E.Coli	140000	<10	99.999% reduction
XDETECT C	E.Coli	140000	<10	99.999% reduction

DetectaPen Metal Detectability

The DetectaBoards are made using XDETECT, an electromagnetically detectable and x-ray visible plastic compound. The metal detectability of this product will vary based on, but not limited to:

- Calibration Levels
- Product Type (E.g. Wet, Dry, Frozen, Liquid)
- Aperture Dimensions
- Orientation

Orientation is a highly influential factor for the metal detectability of a contaminant that is non spherical, i.e. it will be easier to detect the contaminant when passing in one orientation compared to another - this is known as the orientation effect.

During testing of the DetectaPen we used a worst case scenario which is through the geometric centre of the aperture and in the worst caste orientation.

For ease of calibration, we have equated the full pen and pen parts to their ferrous ball test piece equivalents, which are widely used for metal detector testing and calibration. UKAS accredited test pieces are available to purchase

Component	Dimensions	Worst Case Orientation	Test Piece Recommendet	Engineer Notes
J800 Full Pen	146 (L) x 12 (ø) mm	Short Edge Leading	5.00 mm	If the on-site detector Is detecting 5.00mm ferrous or smaller, then it will detect the pen regardless of orientation.
J800 Housing	146 (L) x 12 (ø) mm	Short Edge Leading	2.00 mm	If the on-site detector is detecting 2.00mm ferrous or smaller, then it will detect the pen housing regardless of orientation.
Pen Clip	17 x 6 x 2 mm	Short Edge Leading	1.00 mm	IF the on-site detector is detecting 1.0mm ferrous or smaller, then it will detect the pen clip regardless of orientation.

Please note that the pen clip cannot be detached from the pen without extreme force or the use of tools. Generally speaking, the only circumstances where by such a small pen component could be introduced to food product would be through deliberate action or the pen going through an extreme process such as crushing, blending, mincing etc.

The above table is based on our own testing using one type of metal detector, and is supplied purely for customer convenience. Different metal detectors will feature different sensitivity settings, as well as settings for different product types (E.g. Wet, Dry, Frozen, Liquid).

For this reason Niebling recommend that all our products be thoroughly tested on your metal detection system / x-ray inspection system by a trained and certified professional. Your equipment may need to be re-calibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your metal detection system.

DetectaPen X-Ray Visibility

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 both for whole pens and XDETECT fragments as small as 5mm. X-ray detection performance will be reduced when small fragments are buried in deeper, denser products – detection will depend on product type and density.

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.