



BST Eco V2.0 DetectaPen® | ST1EV22*



The DetectaPen® Range

BST 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 BST 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 and EU compliance, with full documentation including migration test data. The BST DetectaPens® are also Kosher certified.

All BST 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 feature high quality ink cartridges, further adding to the detectability of the pen. The DetectaPen® range is manufactured at the BST HQ in Doncaster, UK, where we hand assemble over 1.8 million units per year, destined for food manufacturers across the globe.

Product Description

Our Eco V2.0 style DetectaPen® boasts all the same properties as the original Eco but with an all new sleek matt design for ultimate writing comfort. All our DetectaPen® designs feature minimal germs traps and are ergonomically designed making them easy to hold, so less likely to be dropped.

The Eco V2.0 DetectaPen® is the best value for money detectable pen available from BST. 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. They are 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 V2.0 pen is available with a pocket clip or a lanyard loop. 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.

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 with pocket clip or lanyard loop
- ✓ 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 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 with Clip	ST1EV2210DB*	Detectability	Metal & X-Ray Visible
Brass with Loop	ST1EV2220DB*	AntiBacterial	Yes
Nickel with Clip	ST1EV22100DB*	Ink Colours	B,K,R*,G* (*brass only)
Nickel with Loop	ST1EV22200DB*	Housing Material	BST XDETECT®
Pack Size	50	Cartridge Material	Brass
Pack Weight	0.35kg	Write Out Length	2800m +/- 20%
Body Colours	B,R	Commodity Code	96081010

Ink Specification

- ✓ Unpressurised ink
- ✓ MITI Listed (Japan)
- ✓ ISO 12575 - 2 DOC G2
- ✓ ISO 12575 - 2 DOC A2
- ✓ ISO 12757 - 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	Kosher Certified	BRC Compliant	Made In Britain
EU Compliant	Incorporates SteriTouch®	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).

BST Detectable Products hereby declare that articles manufactured from BST 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 XDETECT® meets the FDA (Food and Drug Administration) requirements contained in the Code of Federal Regulations 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.

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/dm ²	0.5 mg/dm ²	19.4 mg/dm ²	0.8 mg/dm ²
Replicate #2	0.3 mg/dm ²	0.5 mg/dm ²	21.0 mg/dm ²	0.9 mg/dm ²
Replicate #3	0.0 mg/dm ²	0.3 mg/dm ²	20.8 mg/dm ²	0.6 mg/dm ²
Mean Result	0.2 mg/dm ²	0.4 mg/dm ²	20.4 mg/dm ²	0.8 mg/dm ²
EU Limit	10.0 mg/dm ²	10.0 mg/dm ²	#20.0 mg/dm ²	10.0 mg/dm ²
Tolerance			#6.0 mg/dm ²	

#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.

DetectaPen® Antibacterial Technology

DetectaPen® products are manufactured from XDETECT® with built in silver ion antimicrobial technology, supplied by our partners SteriTouch. 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
Streptococcus 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
BST 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
BST XDETECT® A	MRSA	100000	<10	99.998% reduction
BST XDETECT® B	MRSA	110000	<10	99.998% reduction
BST 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
BST XDETECT® A	E. Coli	140000	<10	99.999% reduction
BST XDETECT® B	E. Coli	140000	<10	99.999% reduction
BST XDETECT® C	E. Coli	140000	<10	99.999% reduction

DetectaPen® Metal Detectability

BST DetectaPens® are made using XDETECT®, an electromagnetically detectable and x-ray visible plastic compound. Within the pen housing is a stainless steel ink cartridge. 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.

For this reason BST 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 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.

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, BS Teasdale & Son Ltd, cannot guarantee favourable results and assume no liability in connection with the use of our products. © 2022 BS Teasdale & Son Ltd. All Content, Data & Images are owned by BS Teasdale & Son Ltd and are protected by international copyright law. SteriTouch® is a registered trademark of Radical Materials Ltd

BS Teasdale & Son Ltd. Unit 7, Delta Court, Sky Business Park, Robin Hood Airport, Doncaster, South Yorkshire, DN9 3GN

Tel: +44(0)1302 775208 **Email:** sales@bst-detectable.com **Web:** www.bst-detectable.com