

# BST DETECTACALC® POCKET CALCULATOR

FULLY DETECTABLE DUAL POWER POCKET CALCULATOR

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## Product Specifications

Revised July 2015



**DETECTACALC** 

### Introducing the BST DetectaCalc®

Pocket calculators are an essential production area item but have long been identified as a foreign body contamination risk. Dropped and broken calculators can spread undetectable fragments within food, resulting in consumer hazard, product recall, penalties or even lawsuits for the food manufacturer.

The BST DetectaCalc® solves this problem by being the only plastic calculator available on the market with detectable casing and buttons. The XDETECT® polypropylene casing is both metal detectable and x-ray visible, whilst the food grade silicone keypad is metal detectable. Internal circuitry and wiring is also potentially detectable by metal detections systems, making the BST DetectaCalc® the most comprehensively detectable plastic calculator for food production areas.

This unique product is designed for food safety from the outset, with minimal germ traps, no need to disassemble for battery changing, fully detectable food grade casing & buttons, as well as a built in stainless steel safety lanyard.

### DetectaCalc Advantages

- ✓ XDETECT® Dual Detectable Casing
- ✓ Metal Detectable Silicone Keypad
- ✓ Reinforced attachment loop
- ✓ Compatible with HACCP processes
- ✓ Includes all standard mathematical functions
- ✓ Dual power system - no battery change
- ✓ Sealed unit with minimal germ traps
- ✓ Includes S/S lanyard with break-release clasp
- ✓ Displays due diligence in preventing contamination
- ✓ Bright Blue Colour for Easy Visual Identification



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<b>Product Order Code:</b>	ST1CAPKDB
<b>Casing Material:</b>	BST XDETECT Food Grade Polypropylene
<b>Button Material:</b>	BST Metal Detectable Food Grade Silicone
<b>Lanyard Material:</b>	316 Grade Stainless Steel
<b>Internal Materials:</b>	Assorted wiring & circuitry including lithium battery
<b>Pack Size:</b>	1 Calculator, complete with stainless steel lanyard, boxed
<b>Pack Weight:</b>	0.05 Kg
<b>Dimensions:</b>	120 x 68 x 8 mm
<b>Lanyard Length:</b>	1000mm (318mm Ø)

## Important Product Safety Information

### Calculator Casing

BST detectable pocket calculators feature a dual power system, comprising of a solar panel and battery, which removes the need for the products casing to ever be opened. The calculator is designed to be a permanently sealed unit, as such, no attempt should be made to open the casing of the calculator. If the calculator casing is opened, it is important that the calculator is disposed of and not used in a food production area.

### Lanyard Attachment

The BST detectable pocket calculator is supplied fitted with a stainless steel safety lanyard, designed to prevent the accidental dropping of the calculator by operatives. This lanyard features a clasp designed to break under a sudden pressure. An appropriate risk assessment should be carried prior to use of the product with the lanyard attachment.

### Food Contact

The casing and buttons of the BST detectable pocket calculator are manufactured from food grade metal detectable materials. This design feature is for the purpose of undertaking due diligence in the prevention of foreign body contamination, but does not mean that the product is designed to come into frequent contact with food. The BST detectable pocket calculator features metal detectable silicone buttons that only contain ingredients checked against the latest update of CFR21 FDA 177- 2600 and are present below the levels permitted. The XDETECT casing of the calculator features extensive food contact approvals detailed overleaf.



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## 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<sup>2</sup> 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.

The following overall migration results for XDETECT sample plaques were obtained using a UKAS accredited laboratory, with the full report available upon request.

### Overall migration according to EU Commission Regulation (EU) No. 10 (2011) on plastic materials and articles intended to come into contact with food:

Method	Simulant A (10% v/v Ethanol) (2 Hours @ 70°C)	Simulant B (3% w/v Acetic Acid) (2 Hours @ 70°C)	Simulant C (Olive Oil) (2 Hours @ 70°C)
Replicate #1	0.5 mg/dm <sup>2</sup>	0.1 mg/dm <sup>2</sup>	2.6 mg/dm <sup>2</sup>
Replicate #2	0.7 mg/dm <sup>2</sup>	0.0 mg/dm <sup>2</sup>	2.9 mg/dm <sup>2</sup>
Replicate #3	0.8 mg/dm <sup>2</sup>	0.2 mg/dm <sup>2</sup>	3.3 mg/dm <sup>2</sup>
Replicate #4	-	-	2.7 mg/dm <sup>2</sup>
<b>Mean Result</b>	<b>0.7 mg/dm<sup>2</sup></b>	<b>0.1 mg/dm<sup>2</sup></b>	<b>2.9 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>10.0 mg/dm<sup>2</sup></b>
<b>EU Compliance</b>	<b>COMPLIANT</b>	<b>COMPLIANT</b>	<b>COMPLIANT</b>

### Specific Migrations according to EU Commission Regulation (EU) No. 10 (2011) on plastic materials and articles intended to come into contact with food:

Substance	Test Simulant	Test Temperature	Time	EU Limit	Result	EU Compliance
Barium	3% Acetic Acid	40°C	1 Hour	1000 µg/kg	146 µg/kg	COMPLIANT
Bis(2-ethylhexyl)phthalate DEHP	Olive Oil	40°C	1 Hour	1500 µg/kg	-	COMPLIANT
Bis(n-butyl)phthalate DBP	Olive Oil	40°C	1 Hour	300 µg/kg	-	COMPLIANT

### Statement of EU Food Contact Compliance

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.

### 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.



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## Metal Detectability (FOR GUIDANCE ONLY)

BST 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 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 recalibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your metal detection system. DetectaCalc 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

Detectable Silicone Contaminant Size	Advised Minimum Ferrous Sensitivity for Detection
Whole Button      10 x 7 x 4 mm	2.5 mm FE
½ Button          5 x 7 x 4 mm	2.0 mm FE

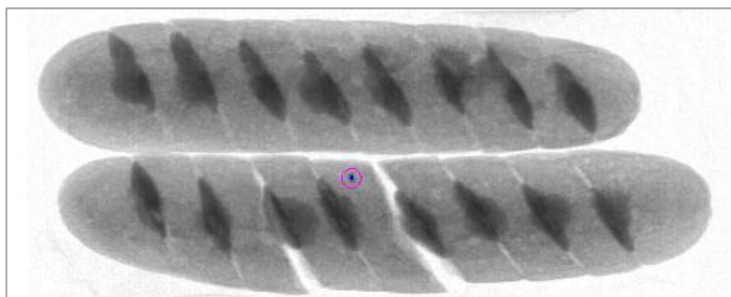


Please note that the above information is for guidance only, and performance will vary.

## 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, BS Teasdale & Son Ltd, cannot guarantee favourable results and assume no liability in connection with the use of our products. © 2014 BS Teasdale & Son Ltd. All Content, Data & Images are owned by BS Teasdale & Son Ltd and are protected by international copyright law.

