

# Metal Detectable Pocket Calculator

Part Number: MDCALC



## Product Description:

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.

Our detectable Calculator solves this problem with metal detectable and x-ray visible casing and buttons. Internal circuitry and wiring is also potentially detectable by metal detections systems, making this pocket calculator a comprehensively detectable plastic calculator for food production areas.

This product is designed for food production from the outset, with minimal germ traps, fully detectable food grade casing & buttons, a big display and big buttons.

## Product 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

<b>Casing Material:</b>	Food Grade ABS
<b>Button Material:</b>	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 with stainless steel lanyard
<b>Dimensions:</b>	120 x 68 x 8 mm
<b>Battery:</b>	1 x LR1130 Battery / 1.5 Volts Alkaline

• **DETECTAPRO** •  
Metal Detectable Products

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## **Important Product Safety Information**

### **Calculator Casing**

Detectapro 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 Detectapro 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 Detectapro 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 the product is designed to come into frequent contact with food. detectable pocket calculator features metal detectable silicone buttons only containing ingredients checked against the latest update of CFR21 FDA 177- 2600 and are present below the levels permitted.

### **Food Contact Status**

Hereby we declare that the materials ABS are 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 meet the relevant requirements of EU Framework Regulation 1935/2004 on materials and articles intended to come into contact with food.

The monomers, starting substances and additives used are listed in Annex I of the consolidated Commission Regulation No.10 (2011) as amended by 321/2011/EC (restriction of use of BPA in plastic infant feeding bottles), 1282/2011/EC, 1183/2012/EC, 202/2014/EC, 174/2015/EC, 1416/2016/EC, and 752/2017/EC, respectively, related to Plastic Materials and Articles intended to come into contact with foodstuffs.

The colourant used in the formulation of the ABS is 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). The carbon black used in the formulation of the ABS Black is specifically tested to by the supplier to ensure continuous compliance with carbon black (CAS 1333-86-4, FCM Substance No 411) purity requirements and specific restrictions/specifications mentioned in Annex I of the Commission Regulation (EU) No 10/2011 (replacing Dir. 2002/72/EC) and its current amendments, concerning Plastics coming into contact with food.

### **Migration Testing**

The following overall migration results for Food Grade ABS 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: ABS-2016/047

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



## Metal Detectability (FOR GUIDANCE ONLY)

Detectapro uses 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 Detectapro recommend all our products be thoroughly tested on your metal detection systems by a trained and certified professional. It may be the case 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. The Detectable Calculator 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

4.0 mm<sup>3</sup> Cube  
6.0 mm<sup>3</sup> Cube  
7.0 mm Ø Sphere  
8.0 mm<sup>3</sup> Cube  
11.0 mm Ø Sphere

### Advised Minimum Ferrous Sensitivity for Detection

2.0 mm FE  
2.5 mm FE  
2.5 mm FE  
3.5 mm FE  
4.0 mm FE

### Detectable Silicone

Whole Button

### Contaminant Size

10 x 7 x 4 mm 2.5 mm FE

### Advised Minimum Ferrous Sensitivity for Detection

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.** We highly recommend all our products be thoroughly tested on your xray inspection systems by a trained and certified professional. It may be the case 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.



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