Product Specifications

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Product Name:	3 Flange Detectable Earplugs
Product Description:	These fully metal detectable re-usable silicone earplugs feature a 3 flange design, offering increased performance and comfort. The three flange design fits a wide size of ear canals & effectively spreads pressure through increased surface contact, making the ear plugs more comfortable than a two flanged variety. The metal detectable earplugs and the connecting chord are manufactured using soft, flexible, silicone rubber containing an evenly dispersed metal detectable additive. Each plug is contains a 3mm metal ball and a metal crimp around the end of the chord for added detectability. Both these metal components are completely encased within the detectable silicone plug. The detectable earplugs offer good attenuation throughout all frequencies, protecting the ears whilst displaying due diligence in the prevention of foreign body contamination.
Pack Size:	100 Pairs
Product Code:	8900203-B
Pack Weight:	0.550 Kg
Product Colour:	Blue
Product Materials:	Both the plugs and the cord are manufactured from food safe silicone rubber, with a non-hazardous metal detectable additive and metal inserts.
Product Advantages:	✔ Detectable by conventional metal detection systems ✔ Can be used as part of HACCP procedures ✔ Displays all due diligence in preventing foreign body contamination ✔ SNR 29dB protection rating ✔ Highly visible bright blue colour for easy visual identification

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Material Properties:

Property	Typical Value	Test Method
Hardness	67 Shore A	ASTM D2240
Magnetic Pull	6.5mm	SEWI/700 ISS 2
Tensile Strength	9.0 MPa	BS ISO 37
Elongation to Failure	340%	BS ISO 37
Tear Strength	15.7 N/mm	BS ISO 34-1 Method C
Compression Set *(25% for 24hrs @ 150°C)*	14.1%	BS 903 PT A6 type B
Temperature Range	-60°C ~ 200°C	

Fitting Instructions: It is important your hands are clean before handling the plug. Grasp the stem of the plug behind the largest flange and insert into the ear canal using a twisting motion, until a good seal is obtained.

Removal Instructions: Grasp the stem of the plug behind the largest flange and slowly pull outwards using a twisting motion.

Hygiene Instructions: To prevent cross contamination, it is recommended to tie a knot at one end of the cord to designate its use in a specific ear.

Washing Instructions: Wash the plugs regularly with mild detergent and rinse thoroughly in clean water, allowing to fully dry before re-using.

Choke Warning: KEEP AWAY FROM BABIES AND SMALL CHILDREN

Noise Performance:

Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1 KHz	2KHz	4KHz	8KHz
Mean Attenuation	27.6 dB	29.1 dB	28.8dB	31.0 dB	28.9dB	35.4 dB	37.6 dB	40.0 dB
Standard Deviation	5.1 dB	4.6 dB	4.1 dB	5.0 dB	4.0 dB	5.2 dB	8.6 dB	6.8 dB
Assumed Protection	22.5 dB	24.5dB	24.7 dB	26.0 dB	24.9 dB	30.2 dB	29.0 dB	33.2 dB

SNR = 29dB H = 29 dB M = 26 dB L= 26 dB Tested to EN352-2:2002 / DIN EN 352-2:2003

Niebling Technische Bürsten GmbH
Industriestraße 12 · 91593 Burgbernheim
Telefon +49 (0) 9843 9894-24 oder -27
Telefax +49 (0) 9843 9894-772
vertrieb@niebling.com
www.niebling.com

Standards Compliance

This grade of silicone range has been tested to and is in compliance with the American Food and Drugs Administration (FDA) 21 CRF 177-2600 and Directive EC 1935/2004.

Detectability

Both the plugs and connecting cord are manufactured from metal detectable silicone rubber, with an added metal grip and ball bearing embedded within the plug body for added metal detection performance. These plugs are detectable by conventional metal detection systems. Product samples gave the 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:

Sample Part	Reading Type	Test Piece Equivalent	Recommended Minimum Sensitivity
Single Earplug	FERROUS	5.0 mm	5.0 mm
Single Earplug	NON FERROUS	2.5 mm	2.0 mm
Single Earplug	STAINLESS STEEL	3.0 mm	2.5 mm
Chord Only (Coiled)	FERROUS	4.0 mm	3.5 mm
Chord Only (Coiled)	NON FERROUS	3.5 mm	3.0 mm
Chord Only (Coiled)	STAINLESS STEEL	3.5 mm	3.0 mm

The above tests were repeated three times in order to gain accurate readings, please bear in mind however that the above guidance does not take into account any product effect. The following factors can have considerable effects on detectability:

- Aperture dimensions
- Contaminant orientation
- Product Type (Wet / Dry / Frozen / Physical State)

Niebling recommend that all our products be thoroughly tested on your metal detection systems by a trained and certified professional. It may the case that your equipment may need 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.