

**Test Report Number : R19-051**

**Date Issue** 19. February 2019

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**Title** **Analysis of Spirits for Haloanisole Taints**

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**Sample Details**

<b>SWRI No.</b>	<b>Client Reference</b>	<b>Description</b>
S19-0121	MS 231 1405	Milagro Tequila
S19-0122	MS 224 1204	Milagro Tequila
S19-0123	Rotation 7030 27/06	Balvenie Doublewood 12yo
S19-0124	Rotation 8045 07/11	Balvenie Doublewood 12yo
S19-0125	Rotation 6587 10/04	Balvenie Doublewood 12yo

**Analysis Methods** Determination of congeners - OP 283 using mass spectrometry

**Comments** The analysis used headspace solid phase micro-extraction (SPME) couple with gas chromatography - mass spectrometry to test for the presence of haloanisole taints.

The limit of detection for this analysis was  
0.015µg/l for 2,4,6-trichloroanisole,  
0.044µg/l for 2,3,4,5-tetrachloroanisole,  
0.058µg/l for 2,3,5,6-tetrachloroanisole and  
0.050µg/l for 2,4,6-tribromoanisole.

**Comments (cont).** Quantification used only headspace peak areas due to interferences with the internal standard, particularly in S19-0121 and S19-0122. The concentrations therefore are representative of the odour impact of the anisole as opposed to a measure of the solution concentration.

**Conclusions** The levels of 2,4,6-trichloroanisole in samples S19-0122 and S19-0125 would give rise to a noticeable musty taint in these products.

The concentrations of chloro- and bromoanisoles in the remaining products were below the limit of detection.

**Signatories**

For and on behalf of  
SWRI Services Limited

**Name** John Conner BSc PhD  
**Position** Senior Scientist

**Signature**  
**Date**

**Name** Shona Harrison BSc, Dipl.Distil  
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**Table No. 1**  
**Determination of congeners****Sample (SWRI No.)****S19-0121**

No analytes were present above their limits of detection.

**Sample (SWRI No.)****S19-0122**

The concentration of 2,4,6-trichloroanisole was above the calibration range used for this analysis. Extrapolation of the calibration gives an estimated concentration of 1.7µg/l. At this level 2,4,6-trichloroanisole would cause a serious taint in the product.

**Sample (SWRI No.)****S19-0123**

No analytes were present above their limits of detection.

**Sample (SWRI No.)****S19-0124**

No analytes were present above their limits of detection.

**Sample (SWRI No.)****S19-0125**

2,4,6-trichloroanisole was present at a concentration of 0.11µg/l. This concentration would cause a noticeable taint in the product.