SmartNotes

Do you need to report LOD and LOQ calculation according to official regulations, with the DFS Magnetic Sector GC-HRMS?

Dioxins and POPs represent a global concern for environmental and human health. Official regulatory bodies, aiming at standardizing the monitoring of Dioxins and POPs in food, feed and environmental samples, require full transparency of analytical methods and results. Laboratories performing analysis in compliance with these methods need to report in a transparent way how they are applying the methods.

For example, when analyzing dioxins and POPs in food and feed, laboratories have to report LOQ and LOD values. The laboratory needs to be able to have full transparency on the calculation performed by their software. Unlike other technologies, for high resolution magnetic sector field systems such as the Thermo Scientific™ DFS™ Magnetic Sector GC-HRMS, the LOQ and LOD values are based on the Signal to Noise concept.

With the Thermo Scientific™ DFS™ TargetQuan Data Evaluation Software, the calculations of the signal to noise values according the official regulations are fully transparent and can be easily reported for audit.

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According to the method in use, you can define the parameters on which the signal to noise calculation is based, such as the sigma value. In the chromatogram the noise band is graphically displayed, for full transparency.

In the chromatogram in Figure 1 you can see that in the upper mass trace the pre-defined range is applied.

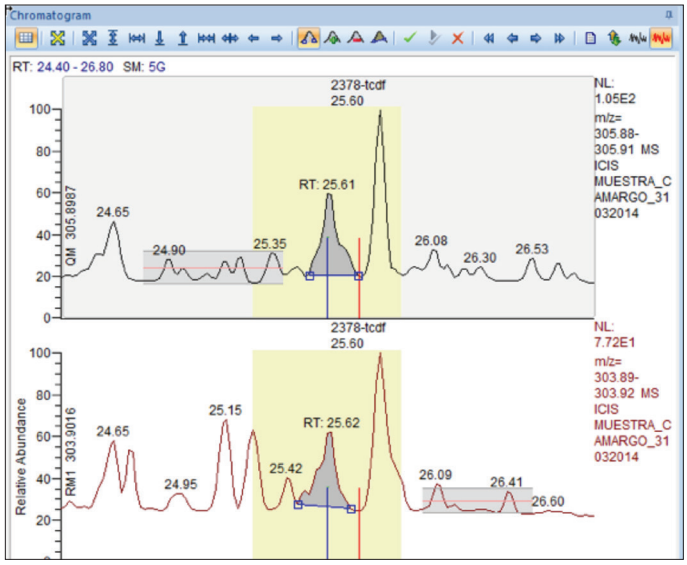

Figure 1. Chromatographic view with displayed noise range.

In the lower mass trace, however, the pre-defined range contains interferences. In such a case, the noise range can be manually set to suitable peak-free areas in the chromatogram, in front or behind the target peak (Figure 1).

Additionally, the formula and the values of its variables can be displayed for every calculated parameter.

		CAA		QMN	R1N	S2NH	QLA
Entry	Entry Identifier	Calculated Amount (A)	Noise Range QM	QM Noise	RM1 Noise	S/N	Quantitation Limit (A)
1	2378-tcdf	0.41	-0.97 - -0.34	8.26	14.13	3	0.3839

Figure 2. The DFS TargetQuan Data Evaluation Software provides you with the visibility of the calculation.

No matter the analysis, the DFS Magnetic Sector GC-HRMS performs compliant Dioxins and POPs analysis, supported by software features that are aimed at productivity and ease-of-use of your lab.

Find out more at **thermofisher.com/DFS**

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