



2,5-Hexanedione GC-MS Analysis Kit

n-Hexane is an important aliphatic compound. It is widely used in the industry to make glue, paints, varnishes, and printing inks and in shoe manufacturing and repair. Occupational or experimental exposure to n-hexane can lead to serious impairment of the nervous system, classified as a central-peripheral distal degenerative axonopathy. Occupational exposure level is monitored by measuring the urinary level of 2,5-Hexandione (2,5-HD), the major metabolite of n-Hexane. n-Hexane is metabolized to several intermediates besides 2,5-HD. Most of its intermediates undergo further transformation and are excreted as glucuronide conjugates. Transformation of n-Hexane intermediates to 2,5-HD by acid hydrolysis significantly increases the amount of 2,5-HD detected. The 2,5-HD measured as a result of free and acid hydrolysis is measured as the “total” amount.

Highlights of the Analysis Kit



Total run time 15 min.



Consuming small volume of urine sample



Long life span of GC column

Parameters

2,5-Hexanedione

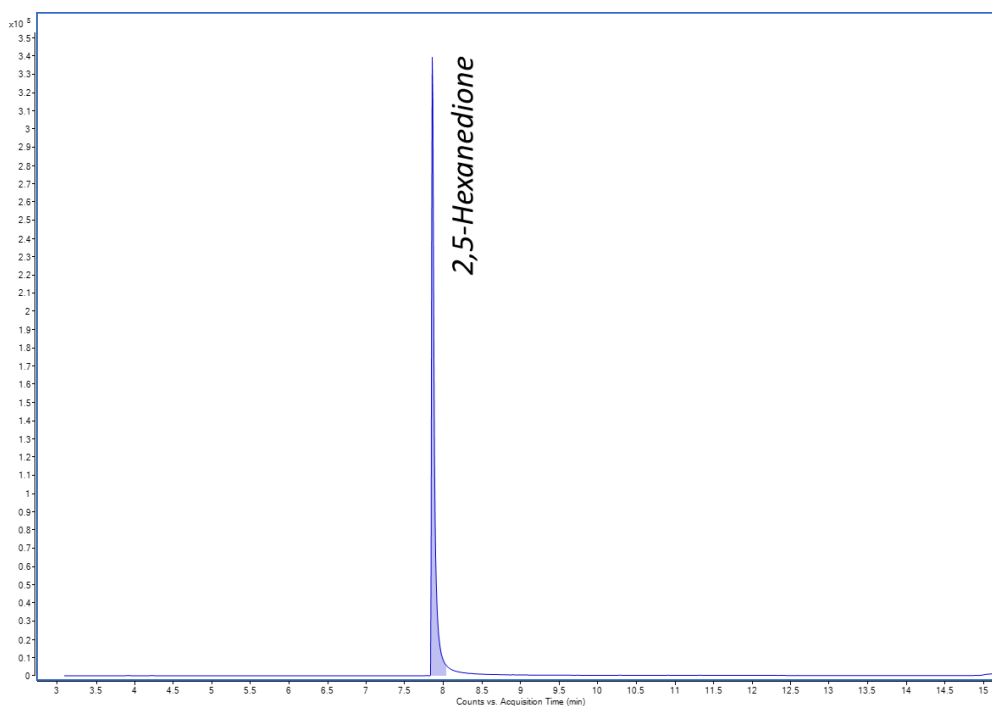
Sample Type

Urine

Sample Preparation

1	Pipette 1000 μ L of control/calibrator/urine sample into scraw cap glass tube
2	Add 175 μ l of Reagent-1, close the glass tube tightly with the cap, vortex 15 sec.
3	It is kept at 100°C for 30 min. in incubator
4	Add 500 μ l of Reagent-2, vortex 15 sec. It is centrifuged at 3500 rpm for 5 min.
5	Transfer the bottom phase into the insert of HPLC vials

Example Chromatogram



Extracted ion chromatogram of 2,5-hexandione.

Method Performance

All results were obtained using Agilent 8890B GC 5977B MSD instrument

Analyte	LOQ (mg/L)	Linearity (mg/L)	Recovery		Repeatability			
					intra-day		inter-day	
			LLQC* (%)	HLQC** (%)	LLQC (%CV)	HLQC (%CV)	LLQC (%CV)	HLQC (%CV)
2,5-Hexanedione	0.12	0.1 - 20.0	96	97	1.61	0.64	2.28	1.68

* LLQC: Low-level quality control

** HLQC: High-level quality control



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