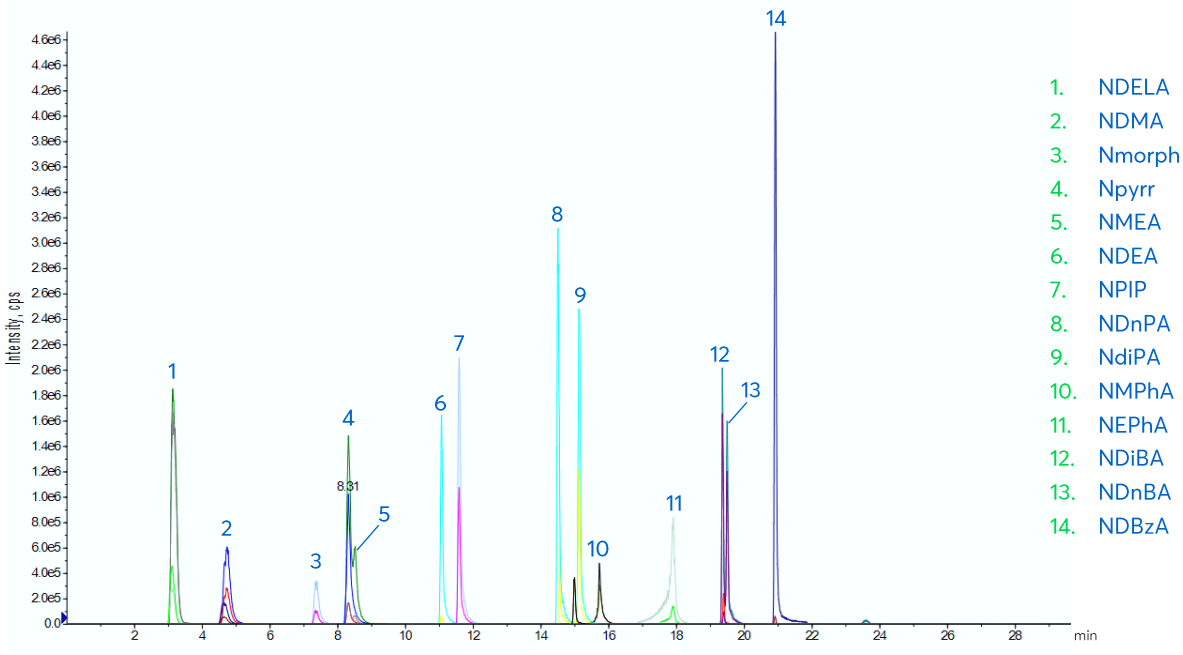
Chromatography Solutions

Application note #1110

Nitrosamines European Toy Standard Method by LC-MS/MS



Avantor® ACE®

Method Details

CONDITIONS

Column: Avantor® ACE® Excel® 2 C18-PFP

Particle Size: 2 µm

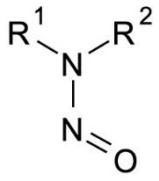
Dimensions: 150 x 3.0 mm

Mobile Phase: A: 0.1 % formic acid in H_2O

B: 0.1 % formic acid in MeOH

Gradient:

Time (mins)	%B
0.0	5
1.0	5
10.0	65
14.0	65
15.0	90
20.0	90
21.0	5
30.0	5



Nitrosamine Structure

Flow Rate: 0.35 mL/min

Injection: 20 µL

Temperature: 40 °C

Sample Temperature: 4 °C

Detection: Applied Biosystems 4000 Q-Trap MS

Source: APCI (positive mode)

Collision energy: 10-30 V

Source temperature: 300 °C

Method: European Union EN 71-12 Safety of Toys: N-Nitrosamines and N-nitrosatable substances e.g. Analysis of nitrosamines in balloon extracts

Method Details

MS CONDITIONS

Peak	Analyte	Transition 1 (m/z)	Transition 2 (m/z)
1	NDELA	135.2 > 74.2	135.2 > 104.2
2	NDMA	74.9 > 43.2	74.9 > 58.2
3	Nmorph	117.1 > 86.3	117.1 > 73.3
4	Npyrr	101.2 > 55.3	101.2 > 59.2
5	NMEA	89.2 > 61.1	89.2 > 43.3
6	NDEA	103.1 > 75.2	103.1 > 47.2
7	NPIP	115.1 > 69.1	115.1 > 41.2
8, 9	NDnPA/NDiPA	131.2 > 89.2	131.2 > 43.3
10	NMPhA	137.2 >107.2	137.2 > 66.1
11	NEPhA	151.1 > 77.1	151.1 > 95.3
12	NDiBA	159.3 > 57.2	159.3 > 103.2
13	NDnBA	159.3 >103.2	159.3 > 57.2
14	NDBzA	227.2 > 91.1	227.2 > 181.2

ORDERING TABLE

Product	Details	Size	Part Number
Avantor® ACE® Excel® 2 C18-PFP	UHPLC Column	150 x 3.0mm	EXL-1010-1503U

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