

Application note

Extraction of explosives and metabolites from water using BAKERBOND SDB 1 or Speedisk® H₂O-Phobic DVB column

Field	Environmental	
Sample	Hexogen Octogen 1,3-Dinitrobenzol 2-Nitrotoluol 4-Nitrotoluol 2,6-Dinitrotoluol 2-Amino-4-nitrotoluol 2-Amino-4, 6-dinitrotoluol	Nitropenta Tetryl 1,3,5,4-Trinitrobenzol 3-Nitrotoluol 2,4-Dinitrotoluol 2,4,6-Trinitrotoluol 2-Amino-6-nitrotoluol
Matrix	Water	
Extraction Column	BAKERBOND spe™ SDB-1, 3 mL, 200 mg or Speedisk® H ₂ O-Phobic DVB, 3 mL, 100 mg	
Sample Preparation	1 L of sample.	
Column Conditioning	Add 2 x 1 mL of acetonitrile followed by 2 x 1 mL of methanol to the column and slowly aspirate. Followed by 2 x 1 mL HPLC grade water. Do not allow the column to run dry during and after conditioning the column.	
Sample Addition/Wash	With vacuum off, add 3 mL of sample to the column. Attach adaptor and 75 mL reservoir to the column and add sample to it. Aspirate the sample through the column at 10 mL/min. Wash the column with 2 x 1 mL of HPLC grade water.	
Sample Elution	Elute with 2 x 1 mL of acetonitrile. Evaporate at 40°C under a gentle stream of nitrogen to 1 mL. Reconstitute to 2 mL with water.	
Final Analytical Method	HPLC	

Results recoveries:

Compound	Spiked concentration [g/L]	Recovery [%]
Hexogen	7.9	94
Nitropenta	7.6	85
Octogen	7.8	85
Tetryl	7.2	102
1,3-Dinitrobenzol	8.1	95
1,3,5,4-Trinitrobenzol	9.2	94
2-Nitrotoluol	7.9	102
3-Nitrotoluol	8.2	106
4-Nitrotoluol	7.9	94
2,4-Dinitrotoluol	7.8	97
2,6-Dinitrotoluol	8.2	92
2,4,6-Trinitrotoluol	8.0	93
2-Amino-4-nitrotoluol	8.0	97
2-Amino-6-nitrotoluol	7.9	94
2-Amino-4,6-dinitrotoluol	7.2	95

Reference Chemisches Labor Dr Wirts u. Partner GmbH, Rutenbergerstraße 59,
D-30559 Hannover

Product list

Description	Cat. No.
Speedisk® H ₂ O-Phobic DVB, 3 mL, 100 mg	JT81096
Water, BAKER ANALYZED® HPLC Reagent	JT4218-3
Methanol, BAKER ANALYZED® HPLC Reagent	JT9093-3
Acetonitrile, BAKER ANALYZED® HPLC Reagent	JT9017-3
BAKER spe-12G System	JT6998-0
SPE Adaptor	JT7300-0
BAKERBOND® Narrow Pore Octadecyl (C ₁₈) HPLC Column, 4.6 × 250 mm	JT7098-0