. .

6

[1], 啟[2], [1]
(1. , , 210023; 2. , , 210036)

: 、 (GPC) – 6 。
:10.34 MPa ,100 ℃ , 1∶1(*V*/*V*) / ,
10 min, 4 。GPC (*V*/*V*,1∶1) , 25 ~
35 min。 Cl – PAHs 1 ~ 500 μg/L , R^2 0.998 4 ~ 0.999 7; LOD LOQ 2.6 ~
25.1 pg/g 8.7 ~ 83.6 pg/g; 64.1% ~ 117.6% , RSD < 12.05% ; 59.1% ~
105.3% , RSD < 9.81% 。 , 。

: ; ; ;
:X833 :B :1674 – 6732(2015)06 – 0000 – 00

Method Development and Application for the Determination of Chlorinated Polycyclic Aromatic Hydrocarbons in Soil

YUAN Wen-ting[1], GAO Zhan-qi[2], SUN Cheng[1]
(1. *State Key Laboratory of Pollution Control and Resource Reuse, School of the Environment, Nanjing University, Nanjing, Jiangsu* 210023, *China*; 2. *State Environmental Protection Key Laboratory of Monitoring and Analysis for Organic Pollutants in Surface Water, Environment Monitoring Center of Jiangsu Province, Nanjing, Jiangsu* 210036, *China*)

Abstract: A method was developed for the determination of 6 chlorinated polycyclic aromatic hydrocarbons (Cl-PAHs) in soil by accelerated solvent extraction (ASE), gel permeation chromatography (GPC) coupled with GC-MS. The optimal ASE efficiency was obtained when using 1∶1 (*V*∶*V*) dichloromethane/n-hexane as the extraction solvent, and performing the static extraction under 10.34 MPa pressure for 10 min at 100 ℃ for four times repeatedly. The obtained extract was passed through GPC to clean up and eluted with 1∶ 1 (*V*∶ *V*) cyclohexane/ethyl acetate. The fraction was collected between 25 and 35 min. Good linearity was observed in the range of 1 to 500 μg/L of Cl-PAHs, with correlation coefficients varying from 0.9984 to 0.9997. The limits of detection and limits of quantification were 2.6 ~ 25 pg/g and 8.7 ~ 83.6 pg/g, respectively. The recoveries for the studied Cl-PAHs ranged from 64.1% to 117.6% with the relative standard deviations less than 12.05% when the spiked concentration was low. When the spiked concentration was high, the recoveries ranged from 59.1% to 105.3% with the relative standard deviations less than 9.81%. This method was shown to meet the requirement for quantification analysis. It was applied in the determination of Cl-PAHs in the soil of a chemical park.

Key words: Accelerated solvent extraction; Gel permeation chromatography; Cl-PAHs; Soil

(Cl – PAHs)
(PAHs)
, 噁
[1] 。 Cl – PAHs ,
,
[2 – 3] 。

:2015 – 06 – 12; :2015 – 07 – 31
: (1208)
: (1988 —), , ,
。
□ : E-mail: envidean@ nju. edu. cn