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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 27860-2011

**Chemicals -- Estimation of the adsorption coefficient (K_{oc}) on
soil and on sewage sludge using high performance liquid
chromatography (HPLC)**

化学品 高效液相色谱法估算土壤和污泥的吸附系数
(English Translation)

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 rules.

The Standards and Organisation for Economic Co-operation and Development (OECD) Guidelines for the Testing of Chemicals NO.121 (2001 Nian) "HPLC estimate Soil and sludge adsorption coefficient "(in English) count the same technical content.

This standard configuration and do the following editorial changes.

--- The example of chemical substances by the applicable body moved in Appendix B;

--- A unit of measurement instead of legal units of measurement;

--- Consistent with the existing standard series, the standard name to adsorption of soil and sludge "chemicals HPLC estimate coefficient".

This standard is managed by the National Standardization Technical Committee chemicals dangerous (SAC/TC251) and focal points.

This standard was drafted. Chemical Registration Center of the Ministry of Environmental Protection, Shenyang Research Institute of Chemical Safety Evaluation Center, Shanghai testing center.

1 Scope

This standard specifies a high performance liquid chromatography (HPLC) to estimate chemical terms and definitions in soil and sludge adsorption coefficient test Material information, an overview of methods, test preparation, testing, quality control, data and reports.

This standard applies to chemically stable during the test substance, especially for difficult to test substances other ways, such as. volatility Substance, since the poorly water-soluble and can not be analyzed to detect the concentration of the substance, of the assay vessel having a strong affinity for chemicals, also apply Containing mixture can not be completely separated from the elution system band (IgKoc test mixture should be given in its upper and

lower limits).

The adsorption coefficient ($IgKoc$) This standard applies to a range of 1.5 to 5.0.

This standard does not apply to materials with high performance liquid chromatography stationary phase or mobile phase reaction occurs, with some inorganic substances in a special way Substances play a role (eg, form complexes with clay minerals basis) and a surfactant, inorganic, strong acid and alkali.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 21851 detect chemical adsorption batch equilibrium method/desorption test GB/T 21852 Chemical Distribution coefficient (n-octanol - water) high performance liquid chromatography test

3 Terms and Definitions

The following terms and definitions apply to this document.

Distribution coefficient K_d partitioncoefficient Under equilibrium ratio between the concentrations of chemicals in the sorbent (soil or sludge) with the aqueous phase. Two-phase concentrations are mass concentration table when shown, K_d dimensionless; if the water phase concentration in mass/volume representation of, the K_d of milliliters per gram (mL/g). K_d values \u200b\u200bwith the adsorption Agents varies nature and concentration of the relevant adsorbent. See equation (1).

$K_d = C_{soil} / C_{water}$

Or C_{sludge}

C_{water}

Where.

KD --- partition coefficient, dimensionless or milliliters per gram (mL/g);

When C --- soil balance soil test substance concentration, in micrograms per gram ($\mu g/g$);

When C --- balance sludge test substance concentration, in micrograms per gram ($\mu g/g$);

When C --- water balance test substance concentration in the aqueous phase, in micrograms per gram ($\mu g/g$) or micrograms per milliliter ($\mu g/mL$).

Freundlich adsorption coefficient K_f Freundlichadsorptioncoefficient in the chemical equilibrium aqueous phase concentrations of $1\mu g/mL$, the chemical adsorbent (soil or

sludge) (x/m) the concentration.

Kf values \u200b\u200bwith properties of the adsorbent differ.