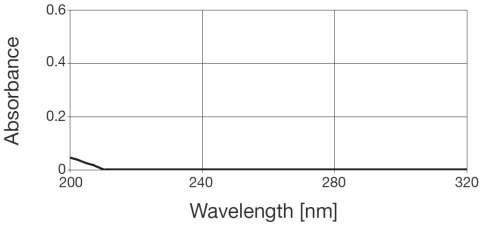
LiChropur® ion-pair reagents

What are ion-pair reagents?

These are ions with a strong hydrophobic character which form externally neutral associates with oppositely charged sample molecules. In this way it is possible to separate charged and unchargend molecules simultaneously.

The reagents in the LiChropur® range are specially selected for high UV transparency even at low detection wavelengths.

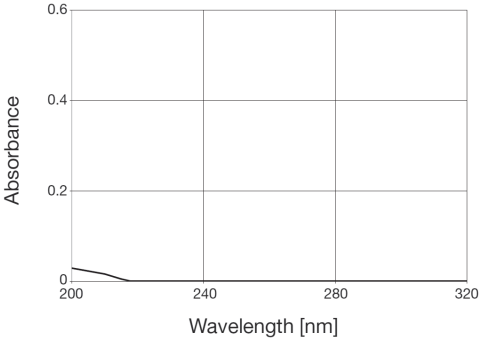


UV spectrum of tetrabutylammonium hydrogen sulfate LiChropur®

Concentration: 0.005 mol/l in water

Reference: water

Path length: 1 cm



UV spectrum of heptane-1-sulfonic acid sodium salt LiChropur®

Concentration: 0.005 mol/l in water

Reference: water

Path length: 1 cm

With which columns and eluents can they be used?

They can be used fundamentally with all stationary phases: the eluent should contain at least 10% water as otherwise there is a risk (particularly with acetonitrile as the organic component) of precipitation.

When using long-chain ion-pair formers, e.g. cetyltrimethylammonium hydrogen sulfate or the sodium salt of dodecane sulfonic acid, the column to be used for the separation should be reserved purely for this purpose, as some irreversible adsorption to the stationary phase takes place, which causes changes in the separating performance.

Instruction

For preparation of LiChropur® ion-pair reagents with buffer substance, we recommend the following instruction (according to the chromatographic requirement, the concentrations of LiChropur® ion-pair reagents can be optimized).

Buffer substance pH 3.5:

1. Composition:

50 mM NaH_2PO_4, 2.2 mM $NaHSO_4$,
5 mM ion-pair reagent [1-Butane sulfonic acid (Cat. No. 118303),
pentane sulfonic acid (Cat. No. 1.18304),
hexane sulfonic acid (Cat. No. 1.18305),
heptane sulfonic acid (Cat. No. 1.18306), or
octane sulfonic acid (Cat. No. 1.18307)]

or

50 mM NaH_2PO_4, 2.2 mM $NaHSO_4$,
0.5 mM ion-pair reagent [Dodecane sulfonic acid (Cat. No.1.18308)].

2. Instruction:

Dissolve 138 g $NaH_2PO_4 \times 1\ H_2O$ and
6,07 g $NaHSO_4 \times 1\ H_2O$ in H_2O and
fill up to 1.0 l with H_2O = Solution 1.

Dissolve 5 mmol ion-pair reagent (1-Butane sulfonic acid, pentane sulfonic acid, hexane sulfonic acid, heptane sulfonic acid or octane sulfonic acid) in 50 ml of solution 1.
Dilute with H_2O up to 1 l

or

dissolve 0.5 mmol ion-pair reagent (Dodecane sulfonic acid) in 50 ml of solution 1.
Dilute with H_2O up to 1 l.

Buffer substance pH 6.5:

1. Composition:

50 mM Na_2HPO_4/NaH_2PO_4 buffer +
5 mM ion-pair reagent [Tetramethylammonium bisulfate (Cat. No. 87724, Sigma-Aldrich), Tetrabutylammonium hydrogen sulfate (Cat. No. 1.18312)],

or

50 mM Na_2HPO_4/NaH_2PO_4 buffer +
0.5 mM ion-pair reagent [Cetyltrimethylammonium hydrogen sulfate (Cat. No. 52371, Sigma-Aldrich)].

Ordering information

Designation	Cat. No.	Content
1-Butanesulfonic acid sodium salt	1.18303.0025 1.18303.0100	25 g 100 g
1-Pentanesulfonic acid sodium salt	1.18304.0025 1.18304.0100	25 g 100 g
1-Hexanesulfonic acid sodium salt	1.18305.0025 1.18305.0100	25 g 100 g
1-Heptanesulfonic acid sodium salt	1.18306.0025 1.18306.0100	25 g 100 g
1-Octanesulfonic acid sodium salt	1.18307.0025 1.18307.0100 1.18307.1000	25 g 100 g 1000 g
1-Dodecanesulfonic acid sodium salt	1.18308.0025 1.18308.0100	25 g 100 g
Tetramethylammonium bisulfate (Sigma-Aldrich)	87724-10G-F 87724-50G-F	10 g 50 g
Tetrabutylammonium hydrogen sulfate	1.18312.0025 1.18312.0100	25 g 100 g
Cetyltrimethylammonium hydrogen sulfate (Sigma-Aldrich)	52371-5G-F	5 g

Status: 2026-01-02
Made in Germany

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