



Product Information

Sodium perchlorate

Product Number **S 1513**
Store at Room Temperature

Replacement for Product Number 20,842-6

Product Description

Molecular Formula: NaClO_4
Molecular Weight: 122.4
CAS Number: 7601-89-0

Sodium perchlorate is a strong oxidizing reagent that is used in the production of perchloric acid and other perchlorate compounds, and in analytical chemistry and chromatography. In protein chromatography, the effect of perchlorate on the apparent hydrophilicity of positively charged amino acid side-chains in reversed phase LC at low pH has been studied.¹ NaClO_4 has also been used to probe peptide side-chain hydrophilicity/hydrophobicity in the binding interface of model ligand-receptor interfaces.² NaClO_4 has been utilized as a chaotropic agent to probe thermal stability of the elongation factor Ts from *Thermus thermophilus*.³

A protocol for the analysis of trace perchlorate levels in high-salinity water samples by ion chromatography coupled to on-line preconcentration has been published.⁴ An article has described the presence of elevated perchlorate levels in the lower Colorado River.⁵

An investigation of the retention of DL-tryptophan enantiomers on an immobilized teicoplanin column with respect to sodium perchlorate concentration has been reported.⁶ The preparation of nanotube-like structures from α -, β -, and γ -cyclodextrins on gold (^{119}Au) surfaces in NaClO_4 solution has been described.⁷

A detailed UV-vis spectrophotometric-potentiometric titration study of the lead(II)-hydroxide system in NaClO_4 media has been published.⁸

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (200 mg/ml), with heat and sonication as needed, yielding a clear to slightly hazy, colorless to faint yellow solution.

References

1. Sereda, T. J., et al., Use of sodium perchlorate at low pH for peptide separations by reversed-phase liquid chromatography. Influence of perchlorate ion on apparent hydrophilicity of positively charged amino acid side-chains. *J. Chromatogr. A*, **776(1)**, 153-165 (1997).
2. Mant, C. T., and Hodges, R. S., Reversed-phase liquid chromatography as a tool in the determination of the hydrophilicity/hydrophobicity of amino acid side-chains at a ligand-receptor interface in the presence of different aqueous environments. I. Effect of varying receptor hydrophobicity. *J. Chromatogr. A*, **972(1)**, 45-60 (2002).
3. Sedlak, E., et al., Effect of the central disulfide bond on the unfolding behavior of elongation factor Ts homodimer from *Thermus thermophilus*. *Biochemistry*, **40(32)**, 9579-9586 (2001).
4. Tian, K., et al., Determination of trace perchlorate in high-salinity water samples by ion chromatography with on-line preconcentration and preelution. *Anal. Chem.*, **75(3)**, 701-706 (2003).
5. Hogue, C., Rocket-Fueled River. *Chem. Eng. News.*, **81(33)**, 37-46 (2003).

6. Loukili, B., et al., Study of tryptophan enantiomer binding to a teicoplanin-based stationary phase using the perturbation technique. Investigation of the role of sodium perchlorate in solute retention and enantioselectivity. *J. Chromatogr. A*, **986(1)**, 45-53 (2003).
7. Ohira, A., et al., Comparison of nanotube structures constructed from α -, β -, and γ -cyclodextrins by potential-controlled adsorption. *J. Am. Chem. Soc.*, **125(17)**, 5057-5065 (2003).
8. Perera, W. N., et al., An investigation of the lead(II)-hydroxide system. *Inorg. Chem.*, **40(16)**, 3974-3978 (2001).

GCY/RXR 11/03

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