

Product Name: Sodium orthovanadate

CAS Number: 13721-39-6

IUPAC Name: Trisodium vanadate

Catalog No.: 2821

EC Number: 237-287-9

Batch No.: 1

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $\text{Na}_3\text{O}_4\text{V}$
Batch Molecular Weight: 183.91
Physical Appearance: White solid
Solubility: water to 100 mM
Storage: Store at RT
Batch Molecular Structure: Na_3VO_4

2. ANALYTICAL DATA

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Catalog No.: 2821

Batch No.: 1

CAS Number: 13721-39-6

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IUPAC Name: Trisodium vanadate

Description:

Inhibitor of protein tyrosine phosphatases, alkaline phosphatases and ATPases. Suppresses p53-mediated apoptosis by transcription-dependent and -independent pathways.

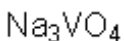
Physical and Chemical Properties:

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Batch Molecular Weight: 183.91

Physical Appearance: White solid

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

water to 100 mM

This compound should be activated for maximal inhibition of protein phosphotyrosyl-phosphatases. This procedure depolymerises the vanadate, converting it into a more potent inhibitor. Protocol: 1) Prepare a 200mM solution of Sodium Orthovanadate. 2) Adjust the pH to 10.0 using 1N NaOH or 1N HCl (the starting pH of the solution may vary). At pH 10.0 the solution will be yellow. 3) Boil the solution until it turns colourless (approximately 10 minutes) and allow to cool to room temperature. 4) Readjust the pH to 10.0 and repeat step 3 until the solution remains colorless and the pH stabilizes at 10.0. We recommend that activated Sodium Orthovanadate aliquots are stored as at -20°C.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Ai et al (2004) Inhibition of small-intestinal sugar absorption mediated by sodium orthovanadate Na₃VO₄ in rats and its mechanisms. *World J.Gastroenterol.* **10** 3612. PMID: 15534916.

Hasegawa et al (2006) Therapeutic time window and dose dependence of neuroprotective effects of sodium orthovanadate following transient middle cerebral artery occlusion in rats. *J.Pharmacol.Exp.Ther.* **317** 875. PMID: 16461588.

Matsumoto et al (2006) Sodium orthovanadate enhances proliferation of progenitor cells in the adult rat subventricular zone after focal cerebral ischemia. *J.Pharmacol.Exp.Ther.* **318** 982. PMID: 16782823.

Morita et al (2010) Sodium orthovanadate inhibits p53-mediated apoptosis. *Cancer Res.* **70** 257. PMID: 20048077.

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