

Making the 1000 ppm Nitrate Standard

Lab Guide

Task

Make the 1000 ppm stock nitrate-nitrogen standard for the quality control procedure using KNO_3 (potassium nitrate).

What You Need

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| <input type="checkbox"/> Potassium nitrate (KNO_3) | <input type="checkbox"/> 500-mL bottle or jar with lid |
| <input type="checkbox"/> Distilled water | <input type="checkbox"/> Balance |
| <input type="checkbox"/> Drying oven | <input type="checkbox"/> Chloroform (optional) |
| <input type="checkbox"/> 500-mL graduated cylinder | |

In the Lab

1. Dry KNO_3 (potassium nitrate) in an oven for 24 hours at 105 degrees C.
2. Measure 3.6 g of KNO_3
3. Dissolve 3.6 g of KNO_3 in 100 mL of distilled water.
4. Pour solution into a 500 mL graduated cylinder. Fill cylinder to the 500 mL line with distilled water.
5. Carefully swirl to mix. (Do not shake).
6. Pour into a jar and label as 1000 mg/L nitrate-nitrogen solution. Put the date on the label.
7. The stock nitrate solution can be preserved for up to six months using chloroform (CHCl_3). To preserve a stock nitrate standard add 1 mL of chloroform to 500 mL of stock nitrate solution.

Note: To calculate nitrate-nitrogen (NO_3^- -N), take into account the molecular composition of KNO_3 (the ratio of the molecular weight of N to NO_3 is 0.138): $7200 \text{ mg/L } \text{KNO}_3 \times 0.138 = 1000 \text{ mg/L nitrate nitrogen solution}$.