



FACTSHEET: PREPARATION OF SO₂ CALIBRATORS

When preparing calibrators for use with Vintessential SO₂ Discrete Analyser Kits, the purity of the sodium metabisulfite used must be taken into account. This purity will depend on the grade of reagent that has been purchased in your laboratory. This value will be present on the reagent bottle, or on the manufacturers' Certificate of Analysis.

We recommend using analytical grade reagents ($\geq 99\%$), however the following calculation will allow users to determine the amount of sodium metabisulfite required to prepare a stock solution by simply substituting the **purity** of sodium metabisulfite below.

Amount of SMS required (g/L) for a 100 ml solution =

$$\text{stock solution concentration desired (g/L)} \times (190.107/128.132) \times (100/\text{purity of SMS})$$

Example Calculation:

To prepare a **0.3 g/L** stock solution of sodium metabisulfite using **98%** purity reagent:

- The molecular weight of sodium metabisulfite is 190.107 g/mol, of which 67.4% is SO₂ (128.132 g/mol)
- Therefore : $300 \text{ mg/L (0.3 g/L) SO}_2 = 0.3 \text{ g/L} \times (190.107/128.132)$
 $= 0.445 \text{ g/L}$
- For 98% purity : $100/98 \times 0.445 \text{ g/L} = 0.454 \text{ g/L}$
 $= 0.0454 \text{ g/100mL}$

For 98% purity sodium metabisulfite, weigh out 0.0454 g and add to a 100 mL volumetric flask. Make up to the mark with distilled water. This stock solution is 300 mg/L. Individual calibrators can then be prepared as outlined on the SO₂ DA Kit Inserts.