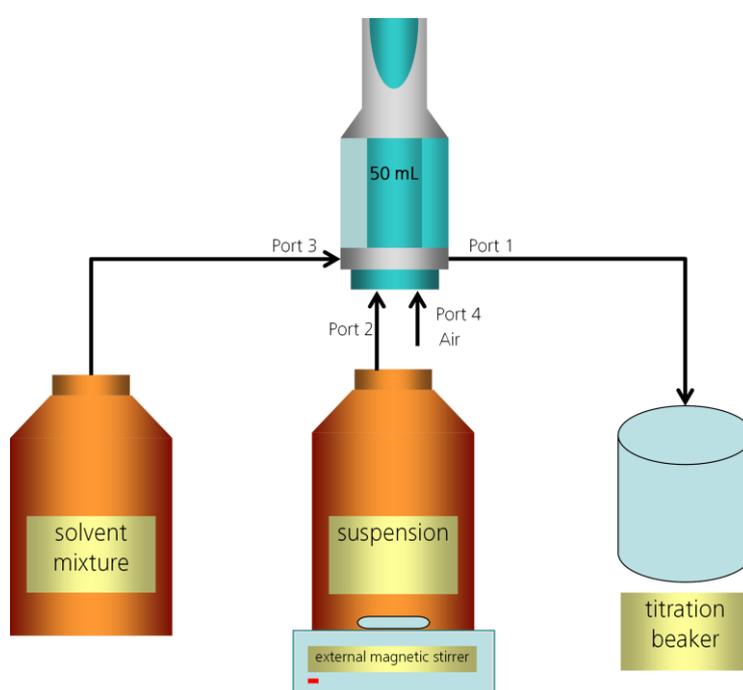


# Automated mixing of a suspension and a solvent using a 50 mL Dosing unit



Automated mixing of a suspension and a solvent in a 50 mL Dosing unit can be used to add a well-defined amount of a suspension to a sample solution without clogging the dosing unit and tubing by the undiluted suspension.

The method is explained by means of the TAN determination of a petroleum sample using thermometric titration. For a better endpoint recognition, small amounts of a paraformaldehyde-solvent suspension are added (catalyzed endpoint thermometric titration).

# Method description

## Instruments

Titrator with LQH mode	
800 Dosino	2.800.0010
50 mL Dosing unit	6.3032.250

The whole dosing system should be rinsed regularly with solvent, in order to prevent any memory effect.

## Solutions

Solvent mixture	$\Phi(\text{toluene}) = 50\% \text{ (v/v)}$ , $\Phi(\text{IPA}) = 50\% \text{ (v/v)}$ ,
Suspension	$\beta(\text{paraformaldehyde}) = 250 \text{ g/L}$ in solvent mixture

## General remark

For the preparation and the automated mixing, liquid handling (LQH) commands are used.

## Preparation

The dosing unit is prepared in such a way that the tubings from the suspension and the solvent mixture to the dosing unit are filled with the corresponding suspension/solution. Furthermore, the piston of the dosing unit has to be in the "eject to end" position.

## Automated mixing

2 mL suspension are aspirated through port 2 of the dosing unit, followed by 30 mL solvent mixture through port 3. For the remaining volume (18 mL), air is aspirated through port 4; this ensures a good mixing of the suspension and solution. The dosing unit is then completely emptied ("eject to end") through port 1 into the titration beaker.

The air is also dosed into the titration beaker in order to empty the tubing and prevent it from getting blocked by the suspension.

## Comments

The suspension has to be stirred all the time to ensure that the paraformaldehyde is continuously suspended.

The assignment of port 1 and 3 is only exemplary; the assignment depends on the individual definitions in the configuration of the IDU.

The filling and dosing rate has to be adjusted for every suspension. In any case, the suspension-mixture should be aspirated slowly.

No antidiffusion tip should be used for the dosing of the suspension-mixture.

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