



### C3.5.3 REDOX TITRATIONS

#### C3.5.3.2 Manganometric determination of iron(II) ions

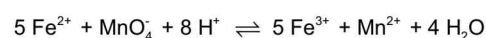
Manganometric determination of iron(II) ions (C3.5.3.2)

Cat. No.	Description	C3.5.3.2
524 005W	Mobile-CASSY 2 WiFi	1
524 220	CASSY Lab 2	1
524 0672	pH adapter S	1
667 416	Single-rod redox probe BNC	1
667 7977	Electronic Balance 440-3N, 200 g : 0.01 g	1
607 105	Magnetic stirrer mini	1
664 103	Beaker, DURAN, 250 ml, squat	2
300 42	Stand rod, 47 cm, 12 mm diam.	1
300 02	Stand base, V-shaped, small	1
665 997	Graduated pipette 10 ml	1
666 003	Pipetting ball (Peleus ball)	1
665 845	Burette, clear glass, 25 ml	1
665 816	Burette filling funnel plastic, 35 mm Ø	1
666 559	Burette clamp for 1 burette, roller clamp	1
666 543	Double, crossed boss head, 0...16 mm	1
666 555	Universal clamp 0...80 mm	1
671 9100	Iron(II) sulfate-7-hydrate, 100 g	1
672 7000	Potassium permanganate, 100 g	1
674 7920	Sulfuric acid, diluted, approx. 2 N (= 10 %), 500 ml	1
674 4670	Buffer solution pH 7.00, 250 ml	1
674 6900	Hydrochloric acid, 1 mol/l, 500 ml	1*
675 3500	Hydrogen peroxide, 30 %, 250 ml	1*
	additionally required: PC with Windows 7 or higher with WIFI or USB connection	1

\* additionally recommended

In redox titrations, a redox reaction takes place as an assay reaction. Similar to the pH indicator in acid-base titrations, the equivalence point is determined with redox indicators. Oxidation or reduction makes them change their colour at a specific "endpoint potential". Similar to the pH electrode, a redox electrode is used in the instrumental titration.

Manganometry requires no redox indicator because a potassium manganate solution is used as a reference solution. It has a deep violet colour and serves as an oxidising agent. In experiment C3.5.3.2, an iron(II) solution is titrated with a potassium permanganate solution.



The endpoint is reached when the solution retains a constant violet colour. At the same time, a redox electrode is used to measure the potential of the solution.