



C5.3.3

WATER CYCLE

C5.3.3.1
Recording a breakthrough curve
of activated carbon filters

Recording a breakthrough curve of activated carbon filters (C5.3.3.1)

Cat. No.	Description	C5.3.3.1
524 005W	Mobile-CASSY 2 WiFi	1
524 220	CASSY Lab 2	1
300 11	Saddle base	1
300 41	Stand rod, 25 cm, 12 mm Ø	1
301 09	Bosshead S	1
666 555	Universal clamp 0...80 mm	1
524 069	Immersion photometer S	1
665 592	Chromatography column, 235 x 20 mm diam.	1
665 796	Volumetric flask, Boro 3.3, 1000 ml	1
664 131	Beaker Boro 3.3, 400 ml, squat	1
666 968	Spoon-ended spatula, stainless steel, 180 mm	1
667 7977	Electronic Balance 440-3N, 200 g : 0.01 g	1
604 009	Laboratory beaker PMP 25 ml, tall shape	1
672 1000	Glass wool, 10 g	1
661 0821	Stopcock grease (grease stick)	1
670 2000	Activated charcoal, granulated, 100 g	1
672 3400	Indigo carmine, 10 g	1
671 9720	Ethanol, denaturated, 1 l	1

Water can be purified with the help of activated carbon. Impurities, e.g. organic substances, adsorb on activated carbon and are thus filtered out of the water. A filter loses its filtering properties when it can no longer adsorb a substance. Then a so-called breakthrough occurs and the filter no longer has any filtering properties for this impurity.

In this experiment the breakthrough curve of the dye indigocarmine on activated carbon is determined. For this purpose, the dye is placed on activated carbon and the colour of the filtrate is measured until it returns to the initial value of the unfiltered solution.