



## C3.2.1 GAS CHROMATOGRAPHY

C3.2.1.1\_p  
Gas chromatographical analysis of  
cigarette lighter gas (butane gas)

C3.2.1.1\_s  
Gas chromatographical analysis of  
cigarette lighter gas (butane gas)  
using stand material

Gas chromatographical analysis of cigarette lighter gas (butane gas) (C3.2.1.1\_p)

Cat. No.	Description	C3.2.1.1_p	C3.2.1.1_s
665 580	Gas chromatograph LD 1	1	1
665 582	Hydrocarbon sensor	1	1
665 5831	Separation column silicone OV101	1	1
665 588	Base panel for gas chromatograph LD 1, CPS	1	
524 005W	Mobile-CASSY 2 WiFi	1	1
524 0036	Holder for Mobile-CASSY 2, CPS	1	
524 220	CASSY Lab 2	1	1
666 425	Panel frame C50, two-level, for CPS	1	
666 4660	Adhesive magnetic board 300 mm	1	
662 2861	Aquarium pump, 100 l/h	1	1
664 814	Bubble counter, with flash back valve	1	1
665 957	Disposable syringe, 1 ml, with Luer fitting	1	1
665 955	Disposable syringe, 5 ml, with Luer fitting	1	1
665 960	Cannula, 0.45 diam., 10 pcs., with Luer fitting	1	1
501 45	Connecting lead 19 A, 50 cm, red/blue, pair	1	1
666 503	Base plate for bunsen stand, 130 x 210 mm	1	1
666 523	Stand rod, 450 x 12 mm diam., M10 thread	1	1
666 555	Universal clamp 0...80 mm	1	1
301 09	Bosshead S	1	1
665 589	Septa, silicone, 13 mm diam., 10 pcs.	1	1
667 197	Silicone tubing, 4 mm diam., 1 m	1	1
660 980	Fine regulating valve for minican gas canisters	1	1
660 988	Minican pressurised gas canister, ethane	1	1
660 989	Minican pressurised gas canister, n-Butane	1	1
	additionally required: cigarette lighter(s)	1	

In use all around the world today, gas chromatography is a method for analyzing chemical substances and mixtures. Especially useful for identifying the components of gaseous hydrocarbons, e.g. natural gas, it can also be used to study volatile substances such as fragrances or alcohols. Substances are separated in a two-phase system comprising a stationary phase - the separation column with column material - and a mobile phase - the carrier gas. Samples are introduced into the carrier gas stream and travel along the column at different speeds depending on polarity, which makes it possible to separate them.

Cigarette lighter gas is a mixture of different gaseous hydrocarbons. They can be easily separated by gas chromatography techniques. The stationary phase is silicone oil OV-101 on silica gel. Air is used as the mobile phase. The proportions of the individual hydrocarbons in the gas mixture is different in every cigarette lighter - depending on the source of the natural gas. This is studied in experiment C3.2.1.1.