Chromatography

GC

OPTIMA® FFAPplus

New polar Nitroterephthalic acid modified polyethylene glycol column with innovative cross-linking!

- ✔ Improved temperature stability: operating range from 40 °C to 250 °C (isothermal), 260 °C for short periods of time during a temperature program
- ✔ Excellent solvent stability
- ✔ Extended column lifetime
- ✔ Low column bleed, better suited for MS than conventional FFAP columns
- ✔ Allows for injection of aqueous samples
- ✔ Enables the determination of free carboxylic acids without derivatization
- ✔ OPTIMA® FFAPplus follows USP G35

Fields of application:

- ➲ Alcohols
- ➲ Solvents
- ➲ Fragrances
- ➲ FAMEs
- ➲ Analysis of foods and natural substances
- ➲ BTEX analysis

MACHEREY-NAGEL

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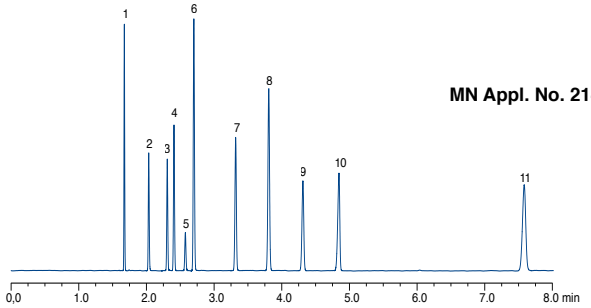
MN Since 1911

Solvents

OPTIMA® FFAPplus, 30 m, 0.25 mm, 0.25 µm
Carrier gas pressure: 1.1 bar He
Injection volume: 0.1 µL hot needle injection, Split: 1:200
Injection temperature: 230 °C
Detector temperature: FID 260 °C
Oven temperature: 60 °C (8 min), 15 °C/min, 150 °C (10 min)

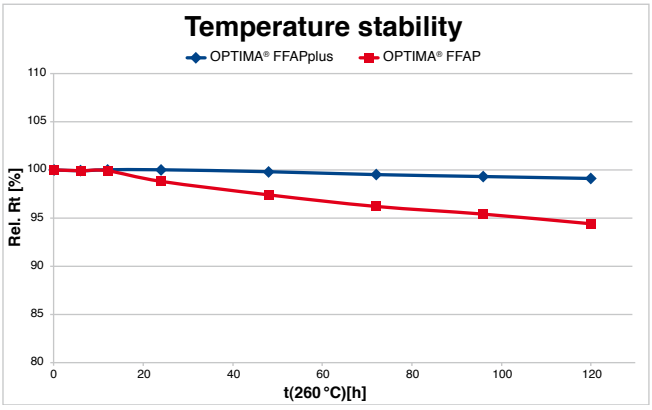


MN Appl. No. 214580

Peaks:
1 n-hexane, **2** acetone, **3** ethyl acetate, **4** methyl ethyl ketone (MEK), **5** dichloromethane, **6** benzene, **7** methyl isobutyl ketone(MIBK), **8** toluene, **9** *n*-butyl acetate, **10** undecane, **11** *o*-xylene

The columns are conditioned at T=260 °C for a longer period of time. At various times, the relative retention of methyl undecanoate is determined with a temperature gradient (80 °C → 240 °C). The relative retention time on the FFAPplus decreases insignificantly, compared with the FFAP.

OPTIMA® FFAPplus, 30 m, 0.25 mm, 0.25 µm
Carrier gas pressure: 0.8 bar He
Injection volume: 1µL, Split 1:50
Injection temperature: 260 °C
Detector temperature: FID 260 °C **MN Appl. No. 214600**



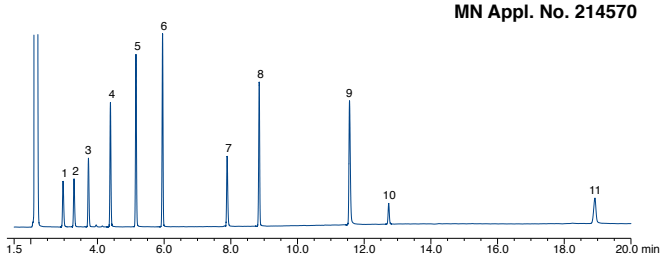
Ordering information

REF	Phase	ID	FD	Length
726241.30	**OPTIMA® FFAPplus**	0,25 mm	0,25 µm	30 m
726241.60	**OPTIMA® FFAPplus**	0,25 mm	0,25 µm	60 m
726242.30	**OPTIMA® FFAPplus**	0,25 mm	0,50 µm	30 m
726242.60	**OPTIMA® FFAPplus**	0,25 mm	0,50 µm	60 m
726243.30	**OPTIMA® FFAPplus**	0,32 mm	0,25 µm	30 m
726243.60	**OPTIMA® FFAPplus**	0,32 mm	0,25 µm	60 m
726246.30	**OPTIMA® FFAPplus**	0,32 mm	0,50 µm	30 m
726246.60	**OPTIMA® FFAPplus**	0,32 mm	0,50 µm	60 m

Carboxylic acids

OPTIMA® FFAPplus, 30 m, 0.25 mm, 0.25 µm
Carrier gas pressure: 1.0 bar He
Injection volume: 1 µL Injection, Split: 1:50
Injection temperature: 230 °C
Detector temperature: FID 260 °C
Oven temperature: 150 °C, 10 °C/min, 260 °C (10 min)

MN Appl. No. 214570



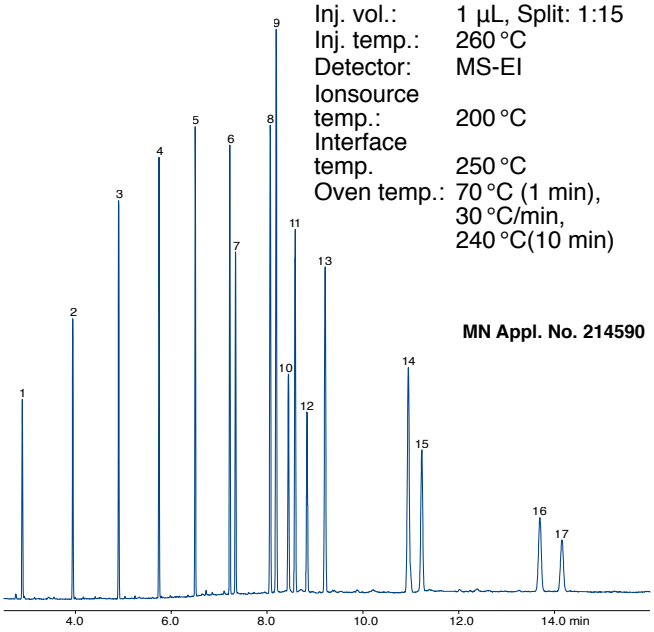
Peaks:
1 acetic acid, **2** propionic acid, **3** butyric acid, **4** valeric acid, **5** caproic acid, **6** 2-ethylcaproic acid, **7** sorbic acid, **8** capric acid, **9** hydratropic acid, **10** myristic acid, **11** stearic acid

FAMEs from biodiesel acc. DIN EN 14103:2011

OPTIMA® FFAPplus, 30 m, 0.25 mm, 0.25 µm

Flow rate: 40 cm/s He
Inj. vol.: 1 µL, Split: 1:15
Inj. temp.: 260 °C
Detector: MS-EI
Ionsource temp.: 200 °C
Interface temp. 250 °C
Oven temp.: 70 °C (1 min), 30 °C/min, 240 °C(10 min)

MN Appl. No. 214590



Peaks:
Methyl ester from:
1 caproic acid (C6:0), **2** caprylic acid (C8:0), **3** capric acid (C10:0), **4** lauric acid (C12:0), **5** myristic acid (C14:0), **6** palmitic acid (C16:0), **7** palmitoleic acid (C16:1), **8** stearic acid (C18:0), **9** oleic acid (C18:1 *cis*), **10** linoleic acid (C18:2 *cis*), **11** nonadecanoic acid (C19:0), **12** linolenic acid (C18:3), **13** arachidis acid (C20:0), **14** behenic acid (C22:0), **15** erucic acid (C22:1 *cis*), **16** lignoceric acid (C24:0), **17** nervonic acid (C24:1 *cis*)

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