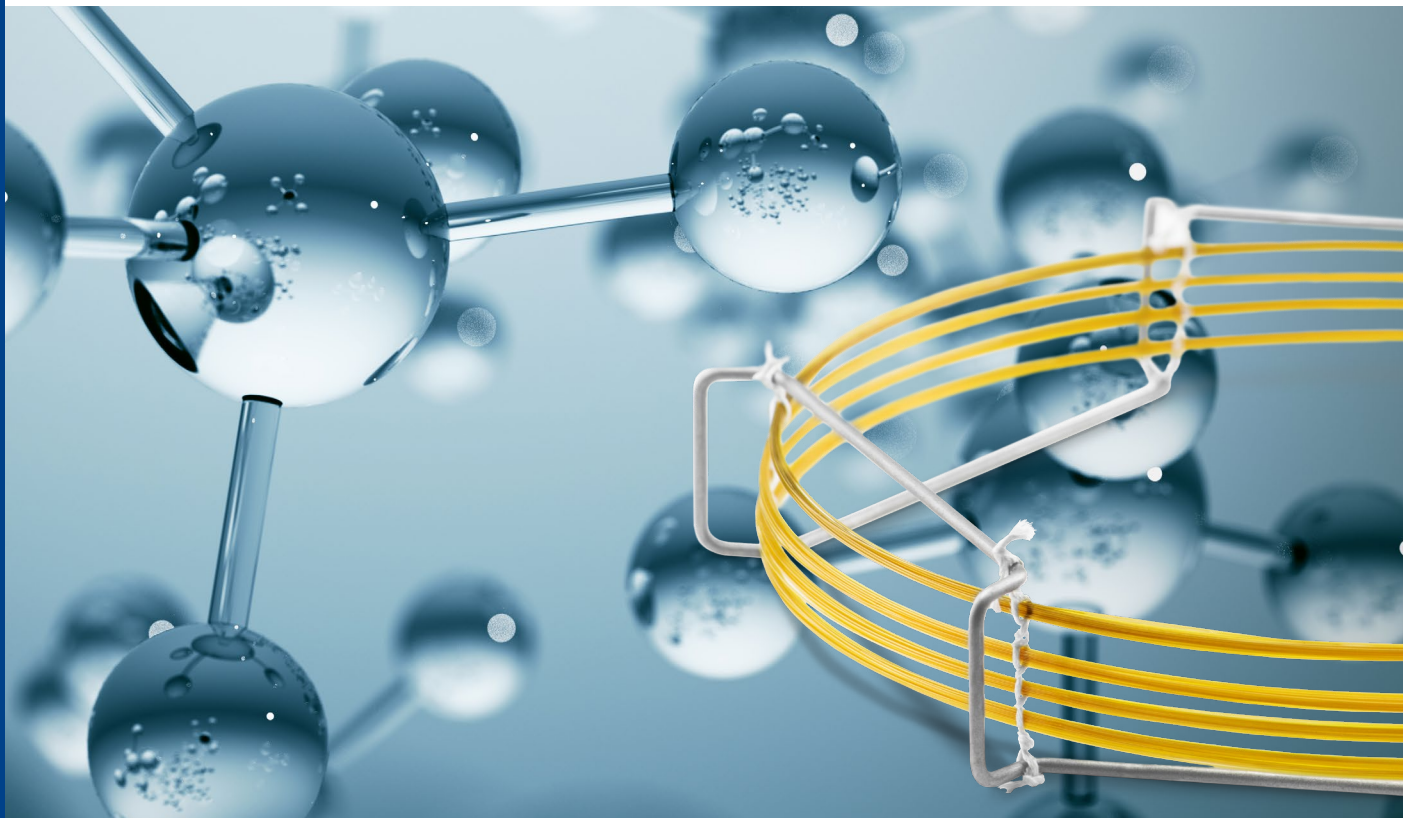


MACHEREY-NAGEL

OPTIMA[®] 35 MS

Chromatography



The mid-polar ultra low bleed GC capillary column

- Silarylene phase with very low bleeding
- Polarity similar to 35 % diphenyl – 65 % dimethylpolysiloxane
- Ideal for GC/MS

MACHEREY-NAGEL

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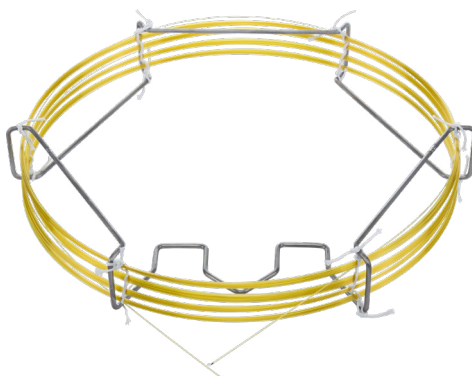
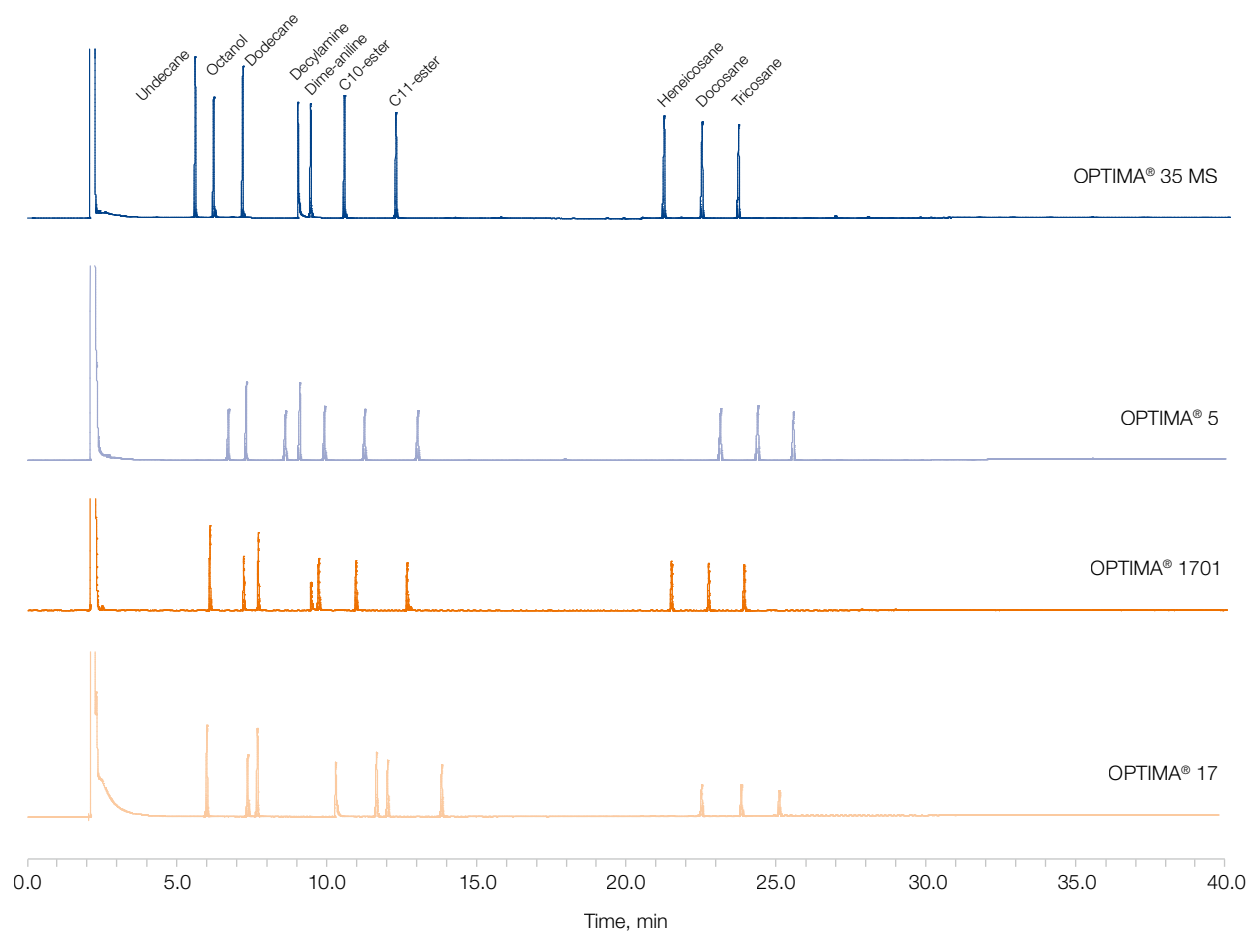
OPTIMA® 35 MS

- High temperature stability (360 °C for isothermally operated runs / 370 °C for short isothermal runs in temperature programmed GC)
- Very low bleed characteristics, mid-polar phase, suitable for ion-trap detection systems
- Application areas: "all round" phases for environmental analysis, trace analysis, EPA methods, pesticides, PCBs, food and drug analysis
- Chemically bonded, cross-linked silarylene phase, polarity index according to 35 % Phenyl / 65 % Methyl-Polysiloxane
- Similar phases: DB-35 MS, HP-35, SPB-35, Rtx®-35, 007 – 35, BPX-35, MDN-35, AT™-35 MS, ZB-35, OV-11, VF-35 MS
- USP G 42

Your benefits

- Alternative to 17- or 1701 phases in the mid-polar range, often used to back the results obtained on 1- or 5 MS columns.
- Ion-Trap and Quadrupol-MS-compatibility without limitation and increased selectivity spectrum
- No limits for the use of ECD and NPD-detectors, aqueous stable phase
- Shorter retention times and a longer column lifetime due to temp. stability up to 370°C
- Reliable quantification even for critical samples at ultra trace levels due to excellent deactivation

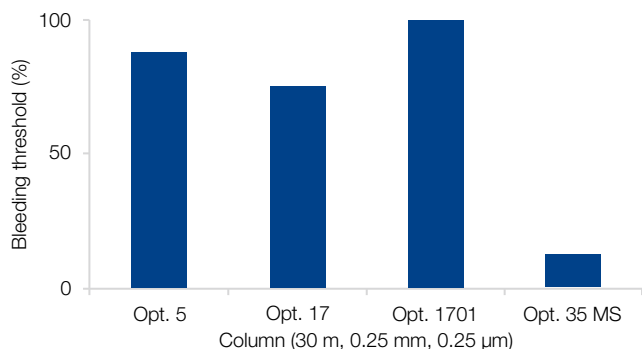
Unique selectivity in the mid-polar region



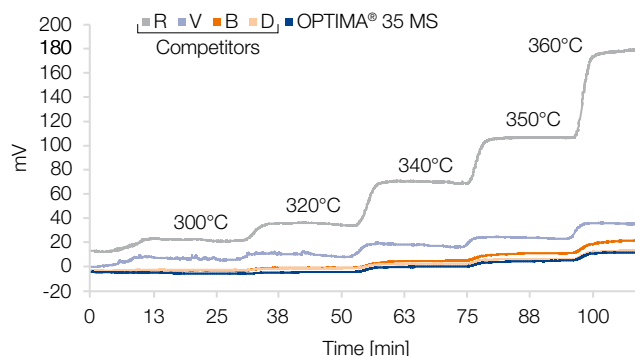
Lowest column bleed

Reduced contamination of the detection system, improved detectability of solutes in trace analysis

In a bleed comparison test between OPTIMA® 35 MS with a conventional 5-, 17- or 1701- phase, the outmatched performance of the silarylene phase can be shown. Measurements up to 360 °C result in the lowest bleeding values, even in comparison with competitor 35 MS phases.



The bleeding is a result of the signals at 320 °C and 80 °C. Measuring condition: 0.8 bar Helium



Conditions:

Column dimensions 30 m, 0.25 mm, df 0.25 µm 0.5 mL/min He, FID.

Temperature program:

220 °C (8 °C/min) – 300 °C (20 min), (8 °C/min) – 320 °C (20 min), (8 °C/min) – 340 °C (20 min), (8 °C/min) – 350 °C (20 min), (8 °C/min) – 360 °C (20 min)

High temperature stability

Extended column lifetime, applicable for high boiling compounds

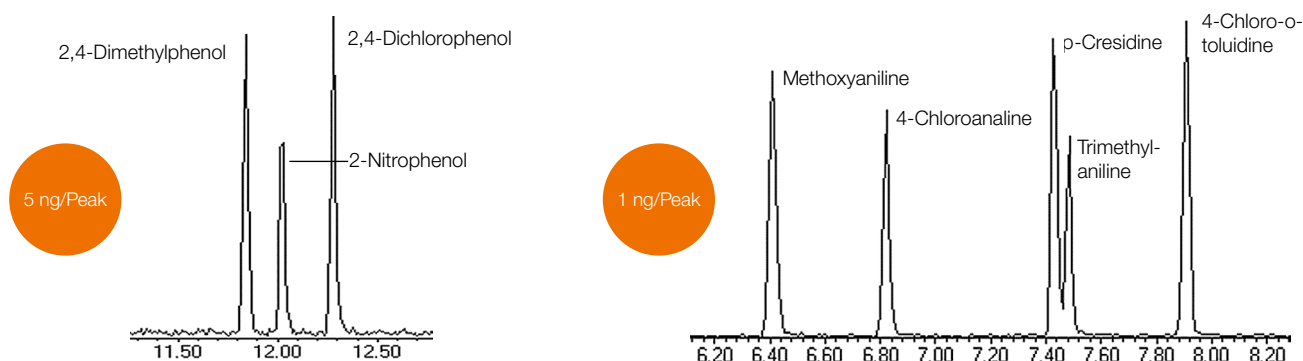
Column	Isotherm Max. temp.	Max. temp. in program
OPTIMA® 35 MS	360 °C*	370 °C*
Agilent DB 35 MS	340 °C*	360 °C*
Restek Rtx-35	300 °C*	320 °C*
SGE BPX 35	360 °C*	370 °C*
Phenomenex ZB-35	340 °C*	360 °C*
Varian FactorFour VF-35ms	340 °C*	360 °C*

* as indicated from manufactures in 2007 product catalogues

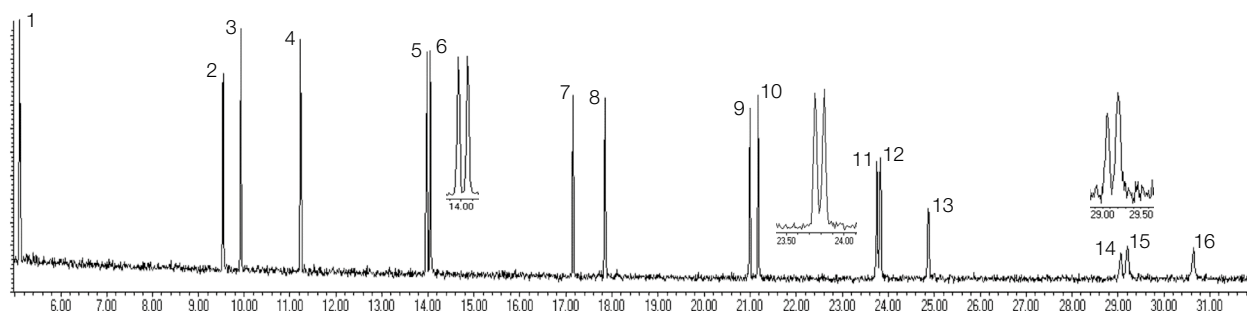
Optimized tubing surface deactivation

Reduced tailing of polar compounds

OPTIMA® 35 MS exhibits excellent peak shapes and asymmetries for phenols or aromatic amines, even without previous derivatization.



PAH acc. to EPA 610

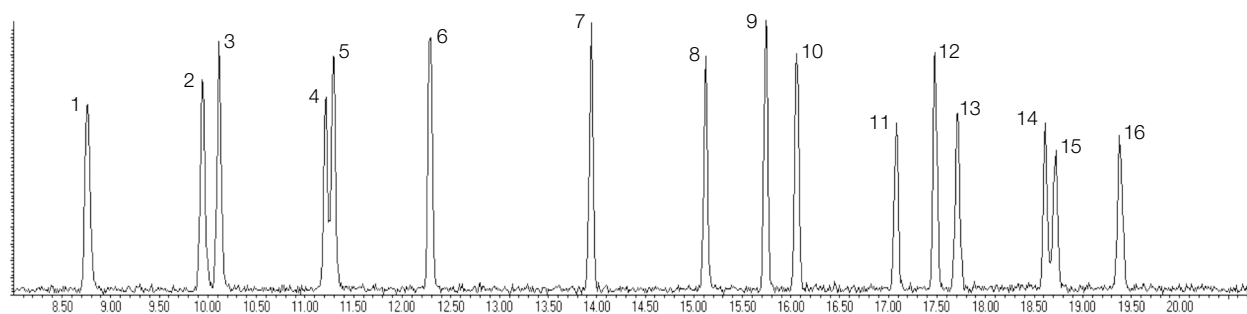


Peaks: 1. Naphthalene, 2. Acenaphthylene, 3. Acenaphthene, 4. Fluorene, 5. Phenanthrene, 6. Anthracene, 7. Fluoranthene, 8. Pyrene, 9. Benz(a)anthracene, 10. Chrysene, 11. Benzo(b)fluoranthene, 12. Benzo(k)fluoranthene, 13. Benzo(a)pyrene, 14. Indeno(1, 2, 3-cd)pyrene, 15. Dibenzo(ah)anthracene, 16. Benzo(ghi)perylene

Conditions: OPTIMA® 35 MS, 30 m x 0.25 mm, df 0.25 µm

Sample: 1 µL, H2, 0.6 bar, Split: 1:10, Temp.: 100 °C (3 min) – 300 °C (6 °C/min, 10 min), Det.: MSD

Pesticides EPA 608



Peaks: 1. α-BHC, 2. γ-BHC, 3. β-BHC, 4. Heptachlor, 5. d-BHC, 6. Aldrin, 7. Heptachlor epoxide, 8. Endosulfan I, 9. 4,4'-DDE, 10. Dieldrin, 11. Endrin, 12. 4,4'-DDD, 13. Endosulfan II, 14. 4,4'-DDT, 15. Endrin aldehyde, 16. Endosulfan sulphate

Conditions: OPTIMA® 35 MS, 30 m x 0.25 mm, df 0.25 µm

Sample: 1 µL, Helium, 0.8 mL/min, Split: 20 mL/min, Temp.: 160 °C – 260 °C (6 °C/min, 10 min iso), Det.: MS

Order information

REF	Length	ID (mm)	Film (µm)
726154.30	30	0.25	0.25
726154.60	60	0.25	0.25
726157.30	30	0.32	0.25
726157.60	60	0.32	0.25

Good to know

The MACHERY-NAGEL application database provides over 3000 chromatography applications examples from HPLC, GC, TLC and SPE and is freely accessible:



chromaAppDB.mn-net.com



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MACHERY-NAGEL



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