Chromatography

OPTIMA® 35 MS

The new mid-polar ultra low bleed GC capillary column with unique selectivity

MACHEREY-NAGEL

www.mn-net.com

Why is the new OPTIMA® 35 MS an interesting phase for you?

Alternative to 17- or 1701 phases in the mid-polar range, often used to back the results obtained on 1- or 5 MS columns.

- ✔ **ultra low bleed silarylene phase with higher polarity**
  Your benefit -> Ion-Trap and Quadrupol-MS-compatibility without limitation, increased selectivity spectrum
- ✔ **no CN-groups in the polymer**
  Your benefit -> no limits for the use of ECD and NPD-detectors, aqueous stable phase
- ✔ **temperature stability up to 370°C**
  Your benefit -> shorter retention times and a longer column lifetime
- ✔ **excellent deactivation**
  Your benefit -> reliable quantification even for critical samples at ultra trace levels

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 manufacturers 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.

Phenols:

Aromatic Amines:

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. Dibenz(ah)anthracene, 16. Benzo(ghi)perylene

Conditions: OPTIMA® 35 MS, 30 m x 0.25 mm, df 0.25 µm
Sample: 1 µl, H_2, 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. g-BHC, 3. b-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

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

Cat. No.	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

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