

Рутинный анализ (контроль качества) (ГХ)

Zebtron ZB-1

100% диметилполисилоксан

Преимущества ZB-1:

Надежная неполярная колонка

- Обеспечивает разделение по истинной точке кипения
- Высокая чувствительность обеспечивается за счет малоуносимой фазы
- Превосходная разрешающая способность при анализе критических паров в сложных нефтехимических образцах
- Оптимальное разделение целевых соединений, таких как наркотические вещества, эфирные масла, углеводороды и бензины
- Эквивалент фазы **USP G2**
- Диапазон рабочих температур **от -60 до 370 °C**

Методы

Фаза	USP
ZB- 1	G1; G2; G38

Фаза	EPA
ZB-1	504.1; 505;

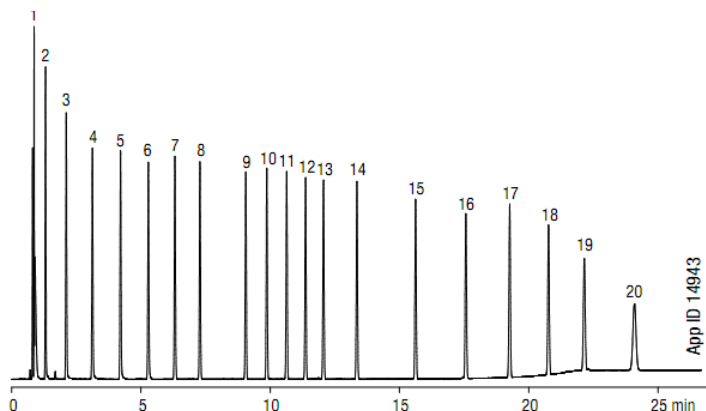
Фаза	ASTM
ZB-1	D2268; D2426; D2998; D2999; D3054; D3168; D3328; D3432; D3447; D3465; D3606; D3876; D4275; D4367; D4420; D5134; D5501; D5580; E0202

Альтернативы

Производитель	Колонка	Альтернатива от Phenomenex
Restek	Rtx®-1, Rtx-1PONA, Rtx-1 F&F	ZB-1
Agilent Technologies (J&W)	DB-1, DB-2887, DB-1 EVDX	
Supelco	SPB-1, SPB-1 TG, SE-30, MET-1, SPB-1 Sulfur, SPB-HAP	
Agilent Technologies (HP)	HP-1, HP-101, HP-PONA, Ultra 1	
Alltech	AT-1, AT-Sulfur, EC-1	
SGE	BP1, BP1-PONA, BPX1-SimD	
Varian (Chrompack)	CP-Sil 5 CB	
OV	OV-1	

Примеры хроматограмм

Simulated Distillation Markers: ASTM Method D 2887



Column: Zebron ZB-1
Dimensions: 10 meter x 0.53 mm x 2.65 μ m
Part No.: 7CK-G001-35
Injection: Split 10:1 @ 360 °C, 1 μ L
Carrier Gas: Helium @ 8.1 mL/min (constant flow)
Oven Program: 35 °C to 360 °C @ 15 °C/min for 5 min
Detector: FID @ 360 °C

Sample:

1. Pentane (C5)	11. Hexadecane (C16)
2. Hexane (C6)	12. Heptadecane (C17)
3. Heptane (C7)	13. Octadecane (C18)
4. Octane (C8)	14. Eicosane (C20)
5. Nonane (C9)	15. Tetracosane (C24)
6. Decane (C10)	16. Octacosane (C28)
7. Undecane (C11)	17. Dotriacontane (C32)
8. Dodecane (C12)	18. Hexatriacontane (C36)
9. Tetradecane (C14)	19. Tetracontane (C40)
10. Pentadecane (C15)	20. Tetratetracontane (C44)

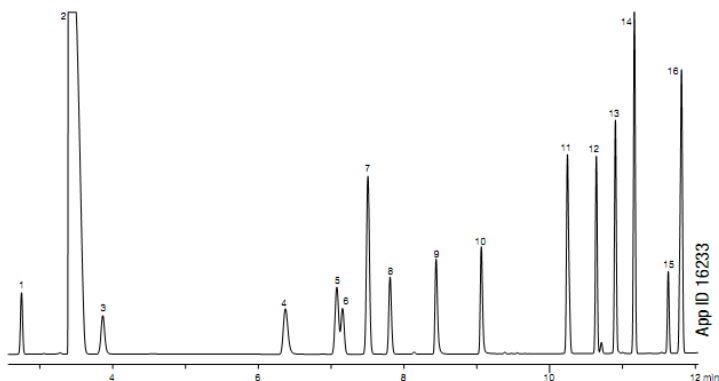
Промышленная химия

Industrial Chemicals: Nitrogen Based Compounds

Column: Zebron ZB-1
Dimensions: 30 meter x 0.53 mm x 3.00 μ m
Part No.: 7HK-G001-36
Injection: Split 10:1 @ 250 °C, 1 μ L
Carrier Gas: Helium @ 3.8 mL/min (constant flow)
Oven Program: 70 °C for 6 min to 250 °C @ 30 °C/min for 12 min
Detector: FID @ 300 °C

Sample: 100 ppm per analyte in Carbon Disulfide (CS₂)

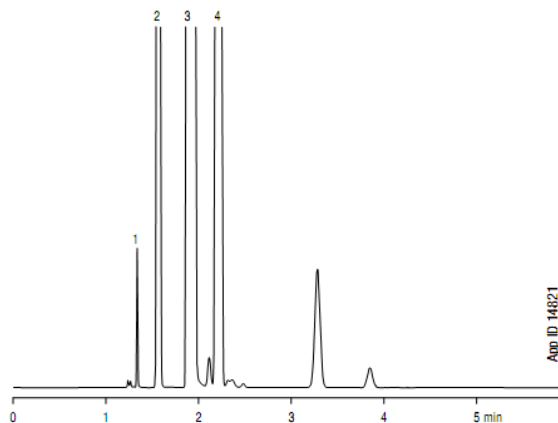
1. Acetonitrile	9. Dimethyl sulfoxide
2. Solvent / Carbon disulfide	10. Hexylamine
3. Diethylamine	11. Dibutylamine
4. 1-Methylpyrrolidine	12. Benzylamine
5. N,N-Dimethylbutylamine	13. Methylbenzylamine
6. Nitropropane	14. Nitrobenzene
7. Pyridine	15. Contaminant
8. Dimethylformamide	16. Tributylamine



ГСМ и топлива

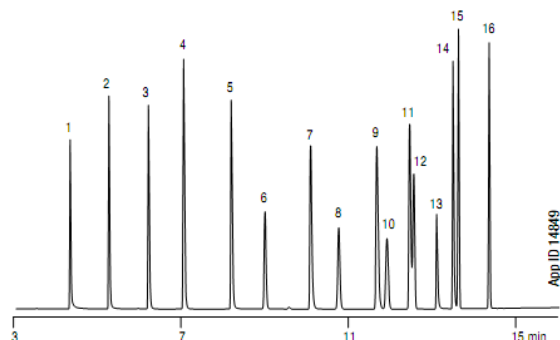
Butane Purity

Column: Zebron ZB-1
Dimensions: 60 meter x 0.32 mm x 3.00 μ m
Part No.: 7KM-G001-36
Injection: Split 10:1 @ 200 °C, 5 μ L
Carrier Gas: Hydrogen @ 6.5 mL/min (constant flow)
Oven Program: 40 °C Isothermal
Detector: FID @ 200 °C
Sample: 1. Ethane
 2. Propane
 3. Isobutane
 4. Butane



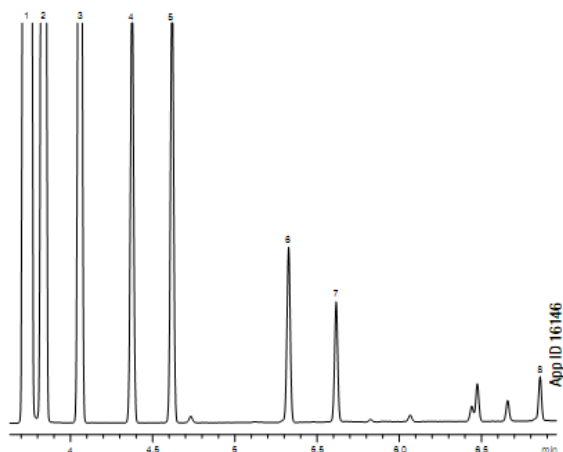
Petroleum Oxygenates: ASTM Method D 4815

Column: Zebron ZB-1
Dimensions: 60 meter x 0.25 mm x 1.00 μ m
Part No.: 7KG-G001-22
Injection: Split 40:1 @ 200 °C, 0.2 μ L
Carrier Gas: Helium @ 1.8 mL/min (constant flow)
Oven Program: 40 °C for 6 min to 50 °C at 5 °C/min for 4 min to 175 °C @ 25 °C/min for 5 min
Detector: FID @ 250 °C
Sample: 1. Methanol
 2. Ethanol
 3. Isopropanol
 4. tert-Butanol
 5. 1-Propanol
 6. Methyl tert-Butyl Ether
 7. sec-Butanol
 8. Isopropyl ether
 9. Isobutanol
 10. tert-Butyl ethyl ether
 11. tert-Pentanol
 12. Methylcyclopentane
 13. 1,2-Dimethoxyethane
 14. n-Butyl alcohol
 15. Benzene
 16. tert-Amyl methyl ether



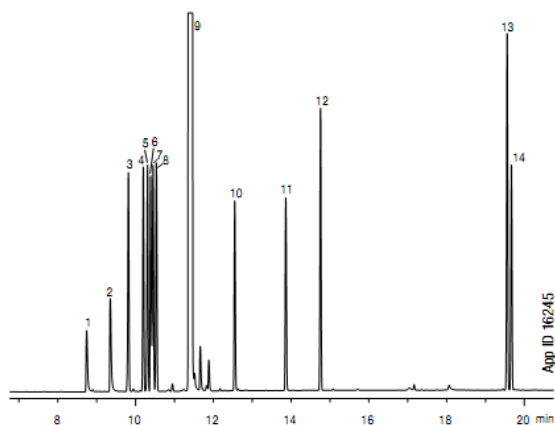
Extended Natural Gas: ASTM Method D 1945-96

Column: Zebron ZB-1
Dimensions: 60 meter x 0.32 mm x 1.00 μ m
Part No.: 7KM-G001-22
Injection: Split 50:1 @ 250 °C, 500 μ L
Carrier Gas: Helium @ 2 mL/min (constant flow)
Oven Program: 35 °C hold for 3 min to 200 °C ramp @ 30 °C/min
Detector: FID @ 250 °C
Sample: 1. Methane
 2. Ethane
 3. Propane
 4. Isobutane
 5. Butane
 6. Isopentane
 7. Pentane
 8. Heptane



Methyl-t-Butyl Ether (MTBE): ASTM Method D 5441-93

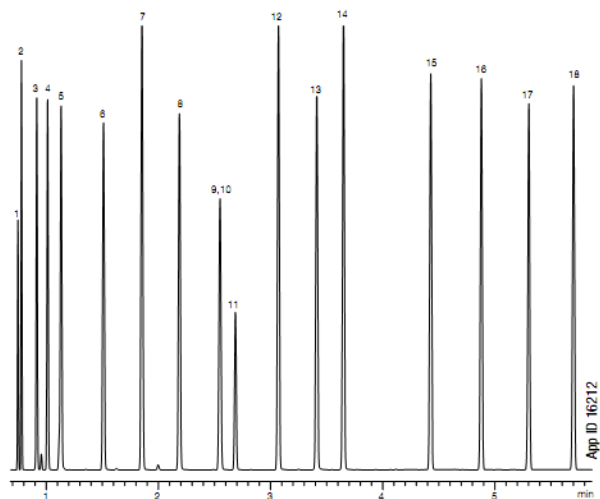
Column: Zebron ZB-1
Dimensions: 100 meter x 0.25 mm x 0.50 μ m
Part No.: 7MG-G001-17
Injection: Split 50:1 @ 200 °C, 1 μ L
Carrier Gas: Helium @ 1.4 mL/min (constant flow)
Oven Program: 50 °C for 8 min to 180 °C @ 30 °C/min for 9 min
Detector: FID @ 250 °C
Sample: 1. Methanol
 2. Contaminant
 3. 2-Methylbutane
 4. Pentane
 5. trans-2-Pentene
 6. t-Butanol
 7. cis-2-Pentene
 8. 2-Methyl-2-butene
 9. Methyl-t-butyl ether
 10. tert-Butyl ethyl ether
 11. tert-Amyl methyl ether
 12. 2,4,4-Trimethyl-1-pentene
 13. 4,4-Dimethyl-2-neopentyl-1-pentene
 14. 2,2',4,6,6'-Pentamethyl-3-heptene (cis, trans)



ASTM Method D 3710 - Fast

Column: Zebron ZB-1
Dimensions: 15 meter x 0.53 mm x 0.50 μ m
Part No.: 7EK-G001-17
Injection: Split 50:1 @ 200 °C, 0.1 μ L
Carrier Gas: Helium @ 7 mL/min (constant pressure)
Oven Program: 35 °C for 1 min to 200 °C @ 35 °C/min for 1 min
Detector: FID @ 220 °C

Sample:	1. Isopentane	10. p-Xylene
	2. Pentane	11. o-Xylene
	3. 2-Methylpentane	12. Propylbenzene
	4. Hexane	13. Decane
	5. 2,4-Dimethylpentane	14. Butylbenzene
	6. Heptane	15. Dodecane
	7. Toluene	16. Tridecane
	8. Octane	17. Tetradecane
	9. m-Xylene	18. Pentadecane



Zebron™ GC Columns



guarantee

If Zebron columns do not provide you with equivalent or better separations as compared to any other GC column of the same phase and comparable dimensions, send in your comparative data within 45 days and keep the column for FREE!

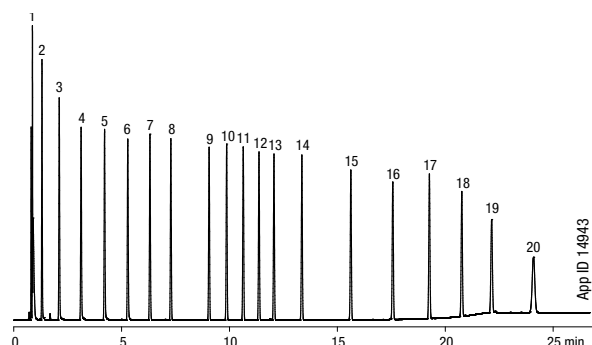
ZB-1

- Low polarity phase suited for true boiling point compounds
- Low bleed (MS Certified), low activity, and high efficiency
- Excellent resolving power of critical pairs in complex petrochemical samples
- Used for “fingerprinting” and routine quality control analyses (e.g., citrus oils)
- Equivalent to USP Phase G2
- Temperature Limits: -60 to 360/370 °C (Isothermal/TPGC)*

Alternative to Any 100 % Dimethylpolysiloxane Phase:

- | | | |
|-------------|-------------|---------------|
| • DB-1 | • HP-101 | • BP1 |
| • HP-PONA | • AT-1 | • SPB-1 |
| • DB-2887 | • Rtx-1PONA | • CP-Sil 5 CB |
| • DB-1 EVDX | • Rtx-1 F&F | • SE-30 |
| • Rtx-1 | • MET-1 | • 007-1 |
| • HP-1 | • Ultra 1 | • OV-1 |

Simulated Distillation Markers: ASTM Method D 2887



Column: Zebron ZB-1
Dimensions: 10 meter x 0.53 mm x 2.65 µm
Part No.: 7CK-G001-35
Injection: Split 10:1 @ 360 °C, 1 µL
Carrier Gas: Helium @ 8.1 mL/min (constant flow)
Oven Program: 35 °C to 360 °C @ 15 °C/min for 5 min
Detector: FID @ 360 °C
Sample:

1. Pentane (C5)	11. Hexadecane (C16)
2. Hexane (C6)	12. Heptadecane (C17)
3. Heptane (C7)	13. Octadecane (C18)
4. Octane (C8)	14. Eicosane (C20)
5. Nonane (C9)	15. Tetracosane (C24)
6. Decane (C10)	16. Octacosane (C28)
7. Undecane (C11)	17. Dotriacontane (C32)
8. Dodecane (C12)	18. Hexatriacontane (C36)
9. Tetradecane (C14)	19. Tetracontane (C40)
10. Pentadecane (C15)	20. Tetratetracontane (C44)

i Engineered Self Crosslinking™ (ESC) polymer technology.
 Zebron GC Columns MS Certification, see p. 386

i *Thicker films (≥1.0 µm df) are rated to 340/360 °C (Isothermal/TPGC).

Contact Phenomenex or your local Phenomenex distributor for additional GC products and applications.



Extend column lifetime. Add a Z-guard to your next Zebron GC order.

Column Profile

Low

High

Polarity

5

Bleed

Temperature Limits

Stability

Applications

- | | | |
|-----------------------|------------------------|----------------------------|
| • Amines | • Drugs of abuse | • Sulfur compounds (light) |
| • Ethanol | • Essential oils | • Solvent impurities |
| • Gases (refinery) | • Hydrocarbons | • Simulated distillation |
| • MTBE | • Natural gas odorants | • Semi-volatiles |
| • Oxygenates and GROs | • Pesticides | |
| • PCBs | • Mercaptans | |

Ordering Information

Zebron ZB-1 GC Columns

ID (mm)	df (µm)	Temp. Limits °C	Part No.	Price
10-Meter				
0.53	2.65	-60 to 340/360	7CK-G001-35	
15-Meter				
0.25	0.10	-60 to 360/370	7EG-G001-02	
0.25	0.25	-60 to 360/370	7EG-G001-11	
0.25	1.00	-60 to 340/360	7EG-G001-22	
0.32	0.25	-60 to 360/370	7EM-G001-11	
0.32	1.00	-60 to 340/360	7EM-G001-22	
0.53	0.15	-60 to 360/370	7EK-G001-05	
0.53	0.50	-60 to 360/370	7EK-G001-17	
0.53	1.50	-60 to 340/360	7EK-G001-28	
30-Meter				
0.25	0.10	-60 to 360/370	7HG-G001-02	
0.25	0.25	-60 to 360/370	7HG-G001-11	
0.25	0.50	-60 to 360/370	7HG-G001-17	
0.25	1.00	-60 to 340/360	7HG-G001-22	
0.32	0.25	-60 to 360/370	7HM-G001-11	
0.32	0.50	-60 to 360/370	7HM-G001-17	
0.32	1.00	-60 to 340/360	7HM-G001-22	
0.32	3.00	-60 to 340/360	7HM-G001-36	
0.32	5.00	-60 to 340/360	7HM-G001-39	
0.53	0.50	-60 to 360/370	7HK-G001-17	
0.53	1.50	-60 to 340/360	7HK-G001-28	
0.53	3.00	-60 to 340/360	7HK-G001-36	
0.53	5.00	-60 to 340/360	7HK-G001-39	
50-Meter				
0.25	0.50	-60 to 360/370	7JG-G001-17	
60-Meter				
0.25	0.25	-60 to 360/370	7KG-G001-11	
0.25	1.00	-60 to 340/360	7KG-G001-22	
0.32	0.25	-60 to 360/370	7KM-G001-11	
0.32	1.00	-60 to 340/360	7KM-G001-22	
0.32	3.00	-60 to 340/360	7KM-G001-36	
0.32	5.00	-60 to 340/360	7KM-G001-39	
0.53	1.50	-60 to 340/360	7KK-G001-28	
100-Meter				
0.25	0.50	-60 to 360/370	7MG-G001-17	

Note: If you need a 5 in. cage, simply add a (-B) after the part number, e.g., 7HG-G001-11-B. Some exceptions may apply. Agilent 6850 and some SRI and process GC systems use only 5 in. cages. See p. 86



ZB-1 Test Mix

Part No.: AG0-5155

Price: