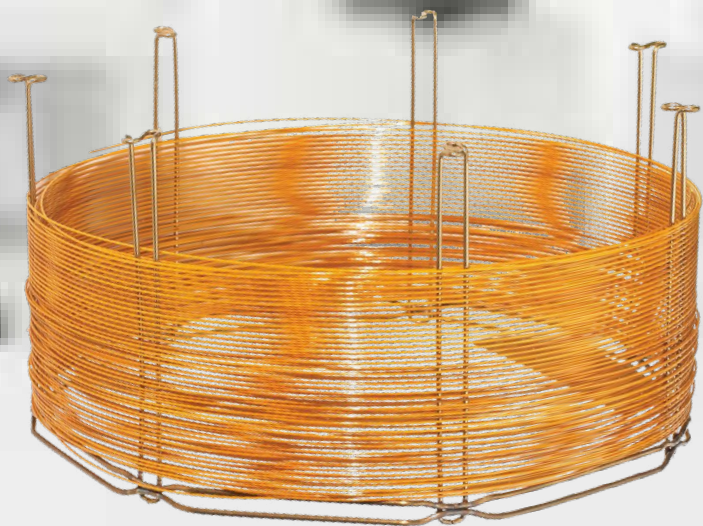
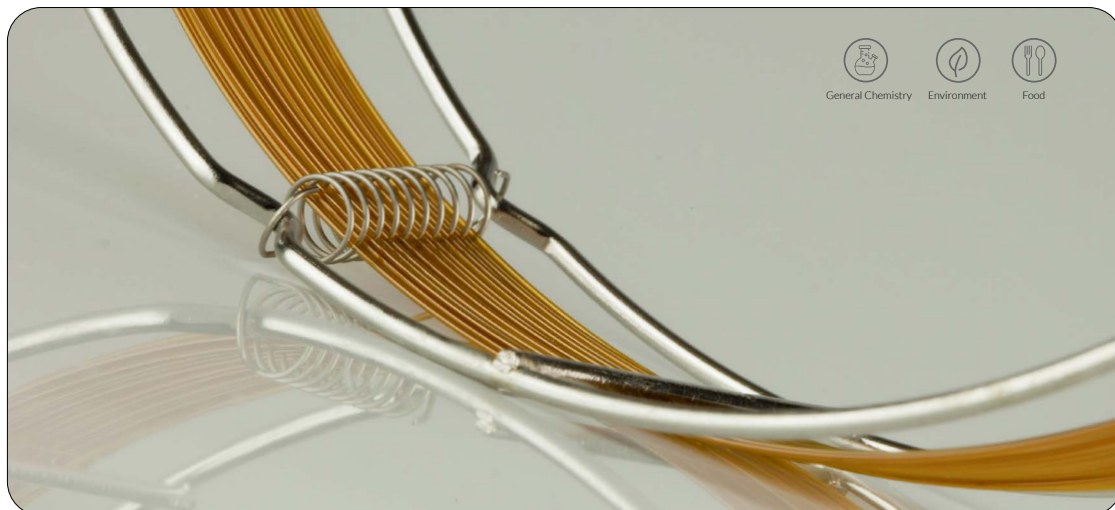


GC Columns

Decades of innovation delivering unmatched separation solutions for every application!





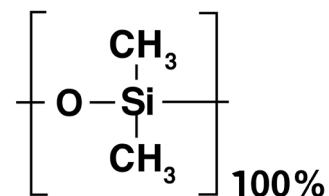
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Classic crosslinked dimethyl polysiloxane technology.
- Excellent general purpose GC column.
- Low bleed.
- Non-polar.
- Suitable for all routine analyses.

Recommended Applications:

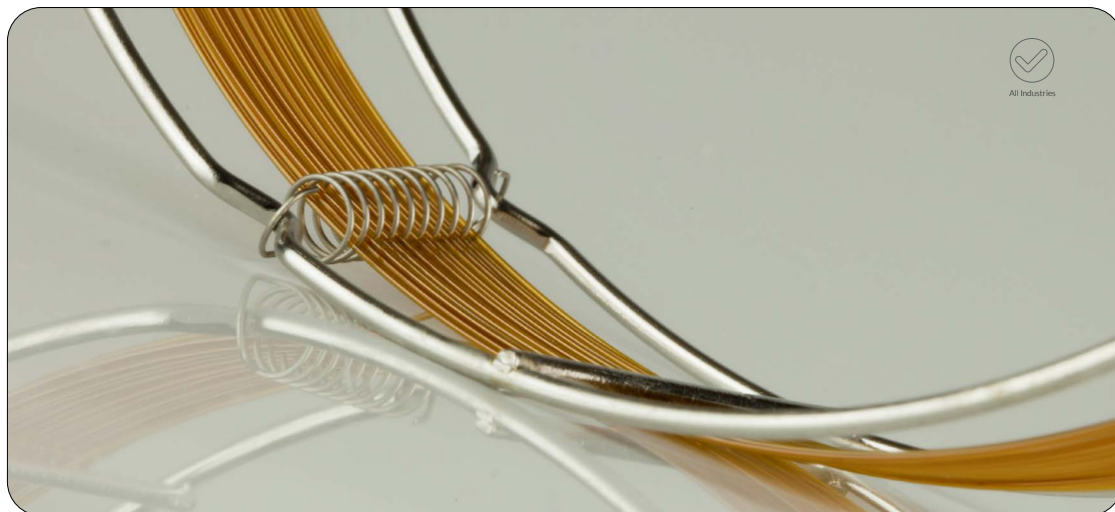
- Hydrocarbons.
- Aromatics.
- Pesticides.
- Phenol.
- Herbicides.
- Amines.



Film Thickness	Operating Temperature
0.1-1.0 μm	-60 °C to 340/360 °C
1.5-3.0 μm	-60 °C to 300/320 °C
4.0-5.0 μm	-60 °C to 280/300 °C

Product Specifications

100 % Dimethyl Polysiloxane. Suitable replacement for: DB-1, DB-Petro, HP-1, HP-1MS, Rtx-1, Ultra-1, SPB-1, SPB-1 Sulfur, Petrocol DH, CP-Sil 5CB, VB-1, ZB-1, VF-1ms.



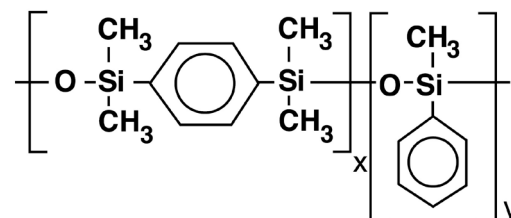
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- High temperature.
- General purpose GC column (suitable for over 80% routine GC analyses).
- Very low bleed – ideal for trace analysis.
- Non-polar.
- Extremely inert.
- Ideal for GC-MS.

Recommended Applications:

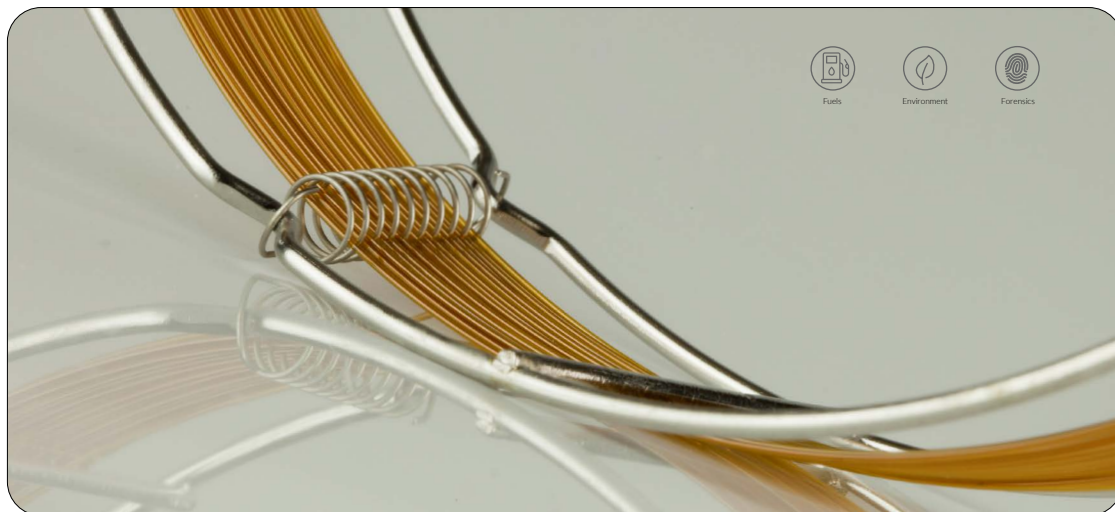
- Ultra trace analyses.
- Pesticides.
- Herbicides.
- Hydrocarbons.
- Solvents.
- Phenols.
- Amines.



GC Column Dimensions (mm)	Film Thickness	Operating Temperature
0.1, 0.15, 0.18, 0.22, 0.25, 0.32, 0.53	0.1, 0.25, 0.5, 1 µm	10 °C to 330/360 °C

Product Specifications

5% Phenyl / 95% Dimethyl Polysiloxane (equivalent). Suitable replacement for: DB-5, DB-5ms, DB-5.625, XTI-5, Rtx-5ms, Ultra-2, HP-5, HP-5MS, HP5-TA, SPB-5, MDN-5S, CP-Sil8CB, Rxt-Sil 5MS, AT-5ms, VB-5, ZB-5, VF-5ms.



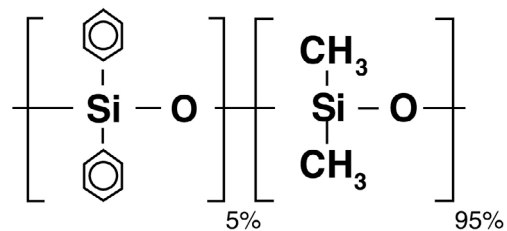
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Excellent general purpose GC column.
- Low bleed.

Recommended Applications:

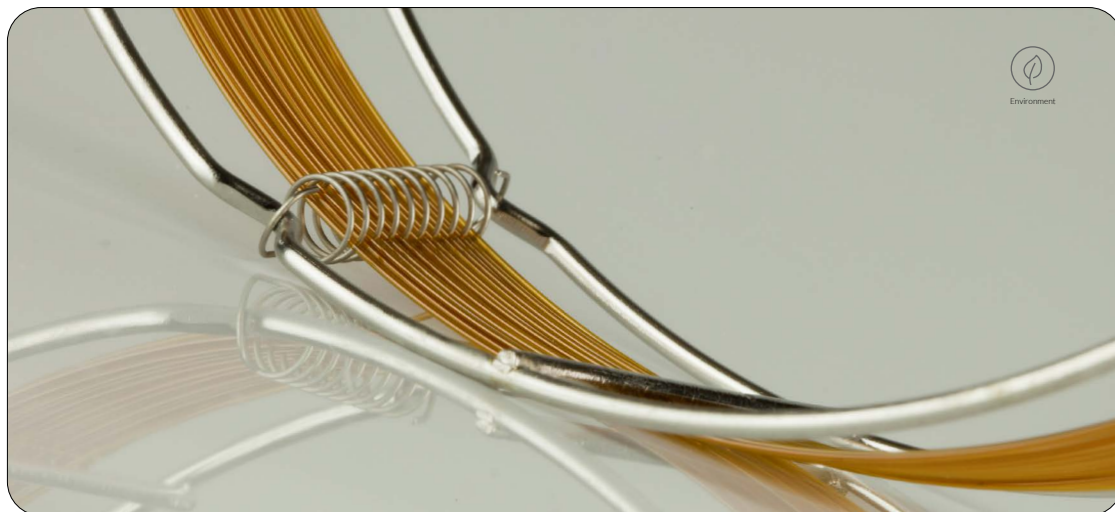
- General purpose.
- Aromatics.
- Pesticides.
- Herbicides.
- Drugs of abuse.
- Hydrocarbons.
- Solvent impurities.
- PCB congeners.
- Aroclor mixes.
- Essential oils.
- Semivolatiles.



Film Thickness	Operating Temperature
0.25-1.5 μm	-60 °C to 320/340 °C
> 1.5 μm	-60°C to 280/300°C

Product Specifications

5% Phenyl / 95% Dimethyl Polysiloxane. Suitable replacement for: DB-5, Rtx-5, HP-5, Ultra-2, PTE-5, SPB-5, MDN-5, CP-Sil 8CB, VB-5, ZB-5, VF-5ms.



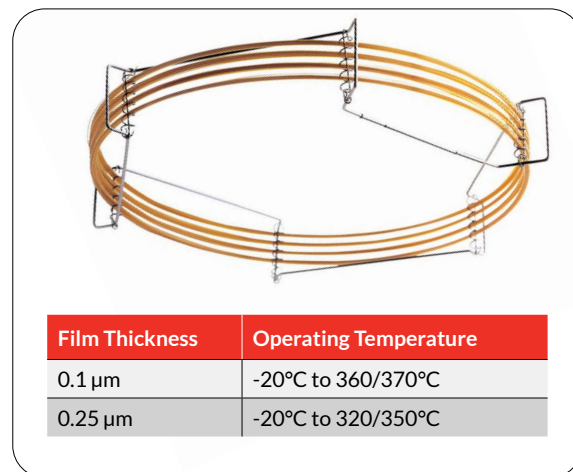
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Preferred column for polychlorinated biphenyl (PCB) compounds.
- Separates PCBs on ortho ring substitution as well as boiling point.
- Ideal for environmental analysis.
- Unique high temperature phase suited for the analysis of persistent organic pollutants (POPs).

Recommended Applications:

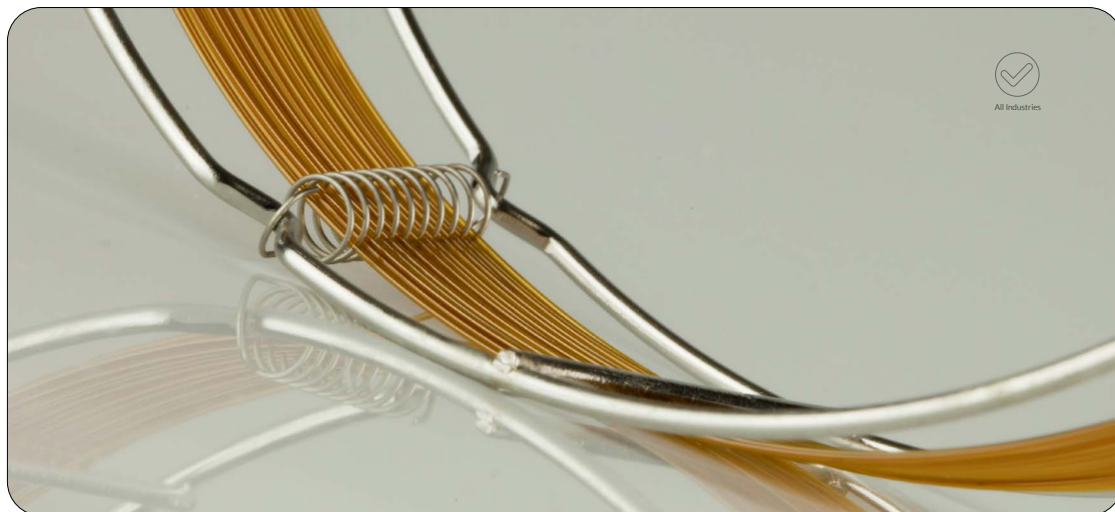
- PCB Aroclor and congener analyses.
- Nitro-substituted aromatics.
- Polynuclear aromatic hydrocarbons (PAHs).
- Pesticides/herbicides.



Film Thickness	Operating Temperature
0.1 μm	-20°C to 360/370°C
0.25 μm	-20°C to 320/350°C

Product Specifications

5% Phenyl / 95% Dimethyl Polysiloxane. 8% Phenyl Polycarborane-siloxane. Suitable replacement for: no equivalents, unique ultra high temperature column with single copolymer phase.



More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

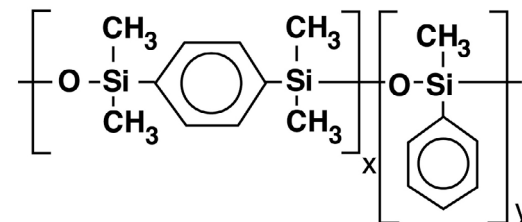
- Perfect for your 5% GC-MS analysis.
- Optimized Silphenylene content for general purpose MS analyses.

Recommended Applications:

- 5% GC-MS analyses.

Product Specifications

5% Phenyl Polysilphenylene-siloxane.
Suitable replacement for: DB-5ms, ZB-5ms, Rxi-5Sil MS, VF-5ms, CP-Sil 8 CB.

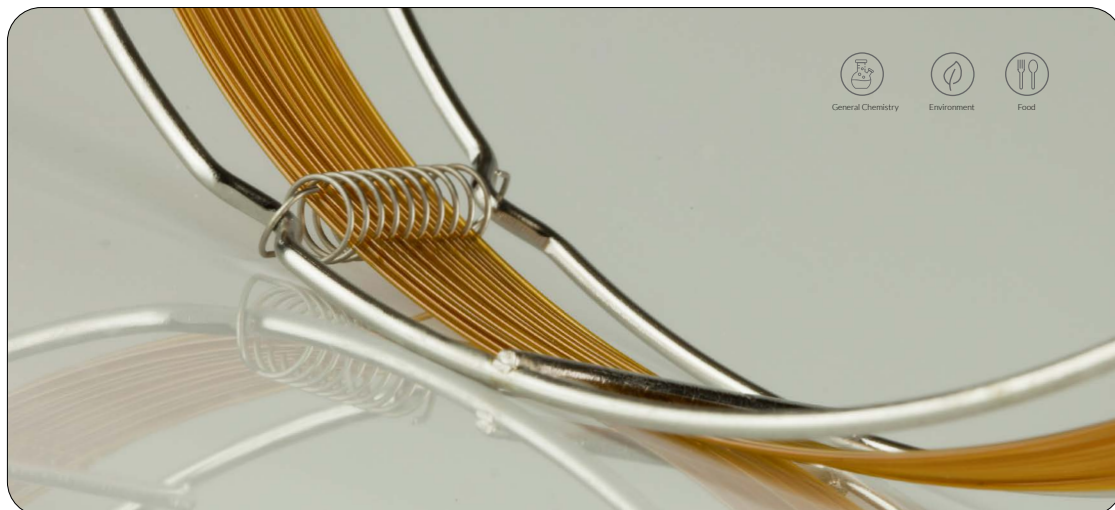


Film Thickness

0.1, 0.18, 0.25 μm

Operating Temperature

-40 °C to 330/350 °C



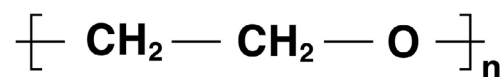
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Industry standard wax column
- Polar phase
- Cross-linked for stability and washing

Recommended Applications:

- Alcohol
- Free acids
- Fatty acid methyl esters (FAMES)
- Aromatics
- Solvents
- Essential oils

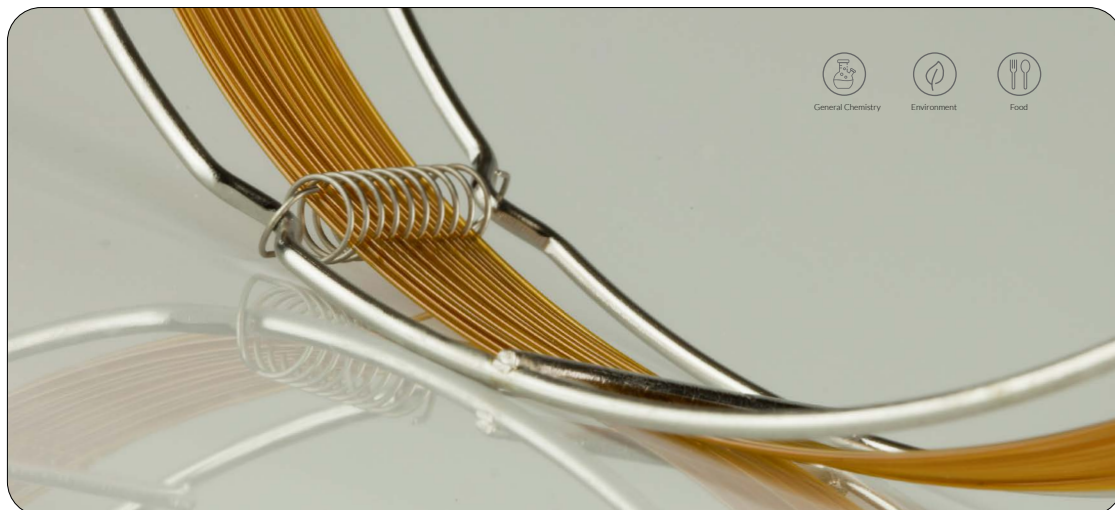


Film Thickness	Operating Temperature
0.1-1.0 μm	20 °C to 260/280 °C
1.0 μm	20 °C to 240/260 °C

Product Specifications

Polyethylene Glycol phase.

Suitable replacement for: Carbowax 20M, CP-Wax 52 CB, DB-WAX, Elite-WAX, HP-20M, HP-INNOWax RH-WAX, Rtx-Wax, Stabilwax, SUPELCOWAX 10, TG-WaxMS, VF-WAXms, ZB-WAX.



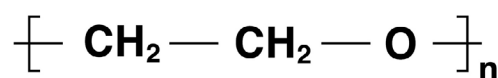
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Polar phase.
- Ideal for low molecular weight acids.
- Able to be solvent rinsed.
- Bonded and cross-linked.

Recommended Applications:

- Volatile free acids.
- FAMES.
- Alcohols.
- Aldehydes.
- Acrylates.
- Ketones.



Film Thickness

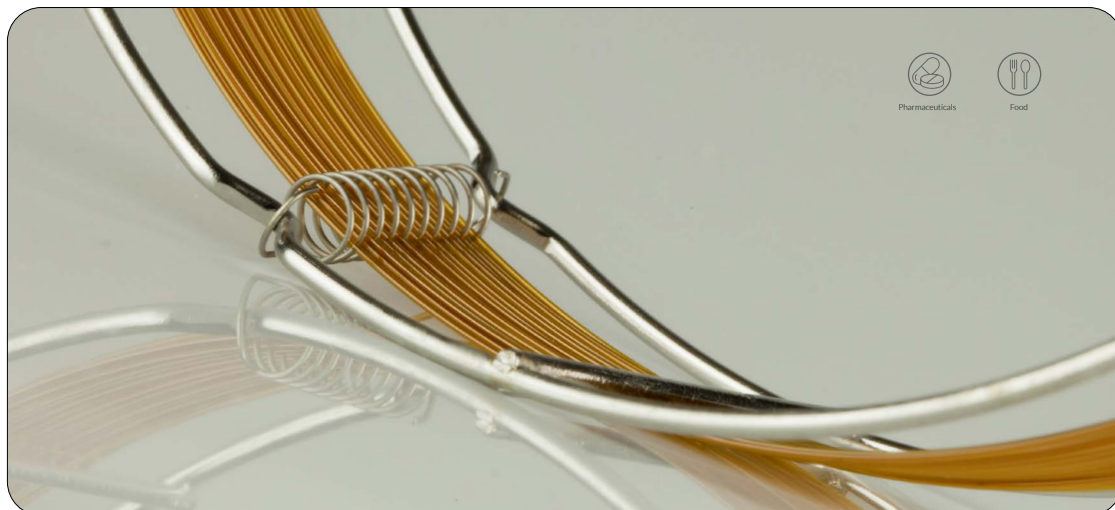
0.25, 0.5, 1 µm

Operating Temperature

35 °C to 240/250 °C

Product Specifications

Nitroterephthalic acid modified PEG. Suitable Replacement for: DB-FFAP, HP-FFAP, Stabilwax-DA, CPWax-58CB.



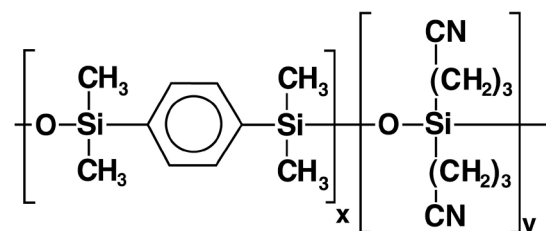
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Industry standard column for FAME analysis.
- Bonded and cross-linked. Able to be solvent rinsed.
- Long operating life.

Recommended Applications:

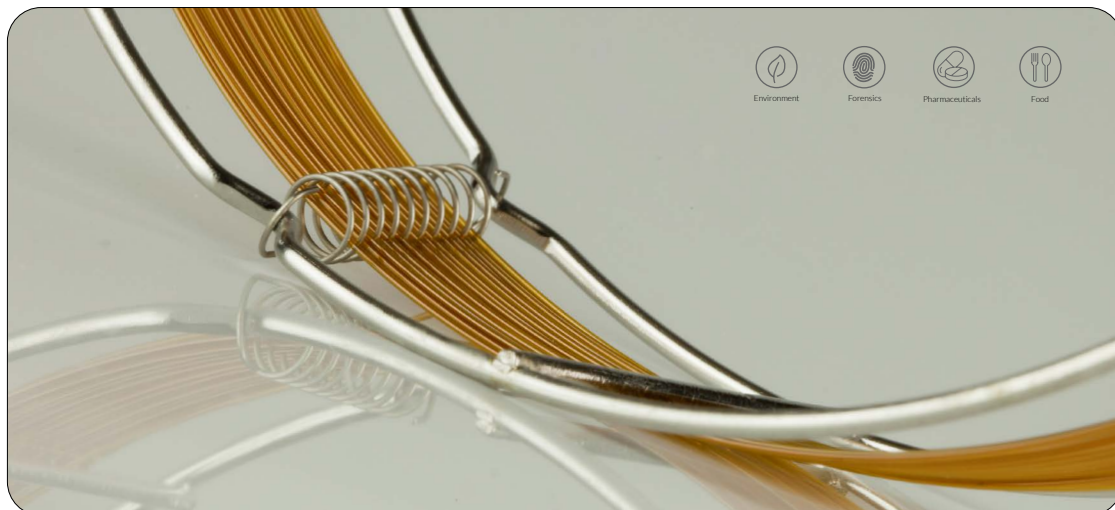
- Fatty acid methyl esters (FAMES).
- Carbohydrates.
- Pharmaceuticals.
- GC/MS applications.



Film Thickness	Temperature
0.2 to 0.5 μm	50 °C to 250/260 °C

Product Specifications

70% Cyanopropyl Polysilphenylene-siloxane. Suitable alternative to: DB-23, Rtx-2330, SP-2330, CP-Sil 88, SP2380, HP-23.



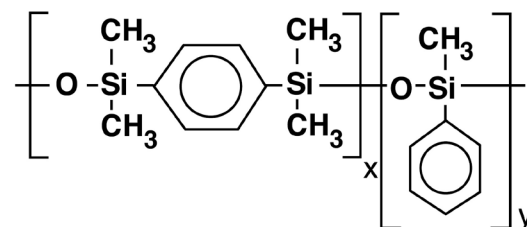
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Mid polarity column. Ideal for confirmational analysis.
- Inert.
- Equivalent to USP phase G42.
- High temperature.
- Very low bleed.
- Pharmaceutical specialist.
- Bonded and cross-linked. Able to be solvent rinsed.

Recommended Applications:

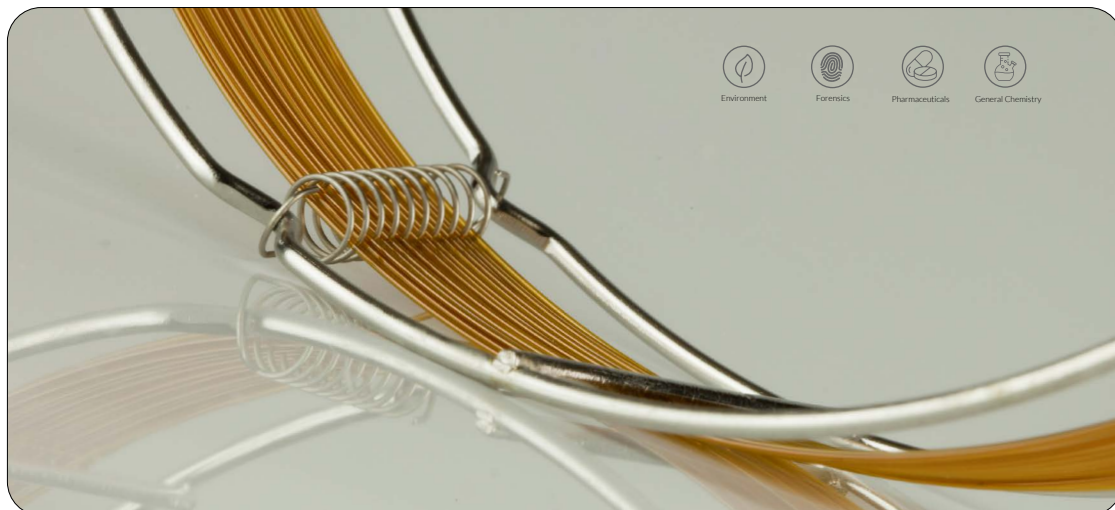
- Environmental analyses.
- Pesticides/herbicides.
- Drugs of abuse.
- Pharmaceuticals.
- Polynuclear aromatic hydrocarbons.
- GC/MS applications.



Film Thickness	Operating Temperature
0.1, 0.25, 0.5, 1 μm	10 $^{\circ}\text{C}$ to 330/360 $^{\circ}\text{C}$

Product Specifications

35% Phenyl Polysilphenylene-siloxane. Suitable Replacement for: DB-35, DB-35ms, Rtx-35, HP-35, HP-35MS, SPB-35, MDN-35.



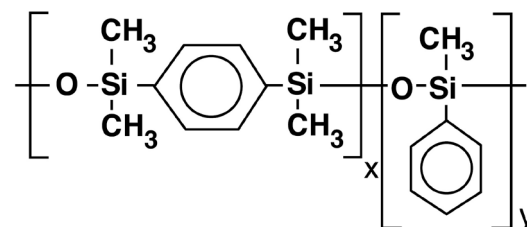
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Ideal for a range of EPA methods and pharmaceutical applications.
- Bonded and cross-linked. Able to be solvent rinsed.

Recommended Applications:

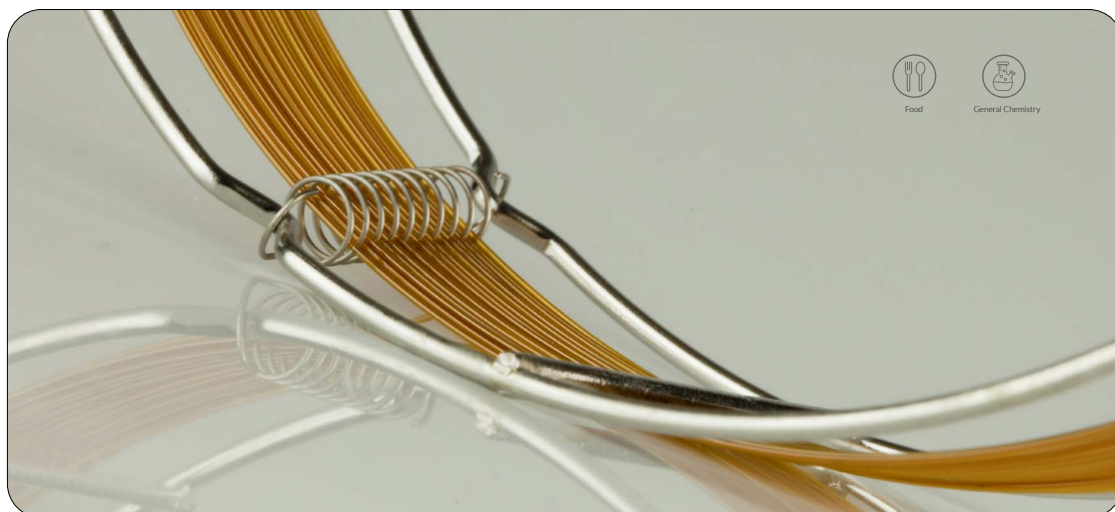
- EPA methods 604, 608, 8060, 8081.
- Triazines/herbicides.
- Drug screening.
- Steroids.
- A variety of pharmaceutical applications GC2D.



Film Thickness	Operating Temperature
0.1 to 1.0 μm	80 °C to 330/350 °C

Product Specifications

50% Phenyl Polysilphenylene-siloxane. Suitable replacement for: OV-17, SP-2250, DB-17, DB-17ms, DB-17ht, Rtx-50, SPB-50, HP-50+, HP-17.



More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Bonded polyethylene glycol.
- Very robust high-temperature column.
- Less susceptible to damage by oxygen than conventional wax phases.
- Polar phase.
- Low bleed and inert.
- Bonded and cross-linked. Able to be solvent rinsed.

Recommended Applications:

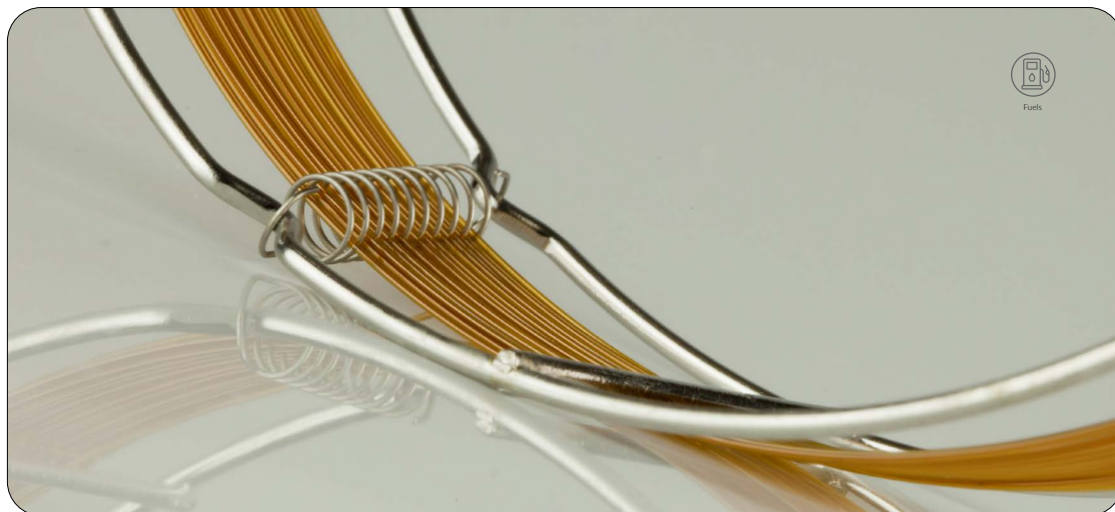
- Highly active compounds.



Film Thickness	Operating Temperature
0.1, 0.25, 0.5, 1 μm	30 °C to 260/280 °C

Product Specifications

Polyethylene Glycol (PEG) in a Sol-Gel matrix.
Suitable replacement for: DB-Wax, Rtx-Wax, Stabilwax, HP20M, HP-Wax, HP-INNOWax, Supelcowax-10, AT-Wax, Nukol, CP, Wax 52CB, VB-WAX, ZB-WAX.



More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- Non-polar column.
- Dimensionally stabilized phase.
- Low bleed.
- Specifically designed for high temperature hydrocarbon analysis.

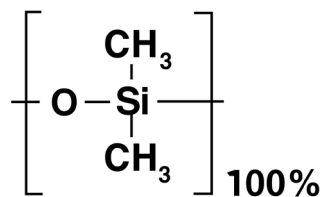
Recommended Applications:

- ASTM methods D2887 and D6532.

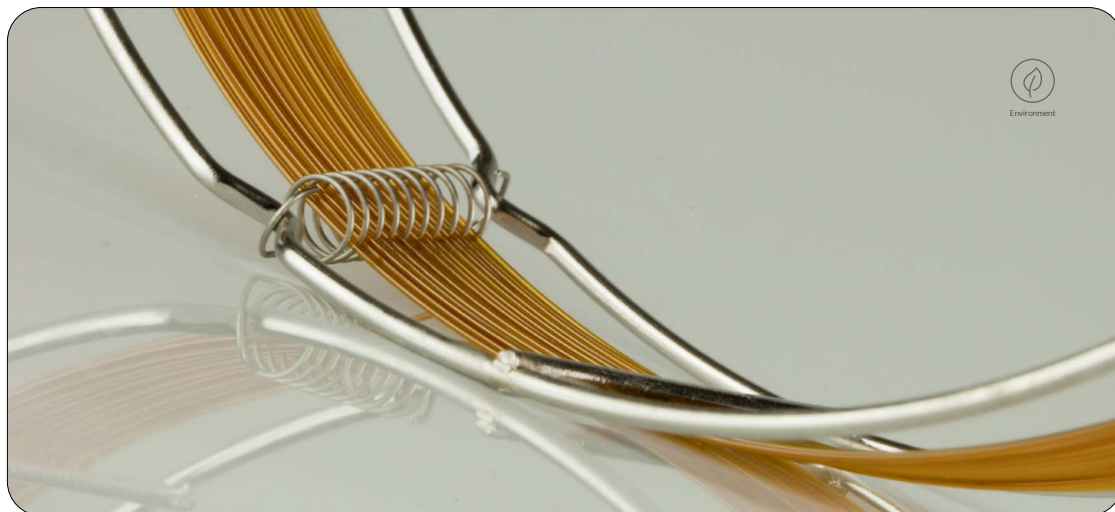
Product Specifications

100% Dimethyl Polysiloxane.

Suitable replacement for: DB-2887, DB-HT Sim Dis, HP-1, Petrocol 2887, Petrocol EX2887, Rtx-2887.



Film Thickness	Operating Temperature
Polyimide clad 0.1-0.9 μm	30 °C to 260/280 °C
2.65 μm	30°C to 370°C



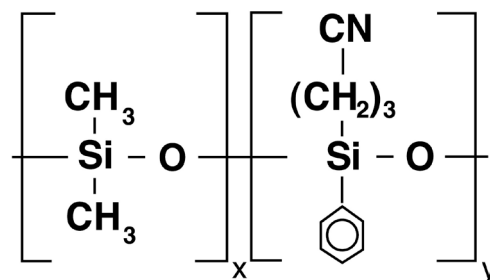
More than five decades of innovative phase technologies and unique fused silica production capabilities, together provide end-to-end separation solutions for all applications.

Features and Benefits:

- US EPA 624 optimized column.
- Designed for volatiles analysis.
- Able to be solvent rinsed.
- Bonded and cross-linked.

Recommended Applications:

- EPA method 624, USP G43 methods, SW-846 and 8240/8260 methods.
- Drinking water volatiles.
- Chlorinated hydrocarbons.
- Solvents.



Film Thickness	Operating Temperature
1.2, 1.4, 1.8, 3 μm	0 °C to 230/240 °C

Product Specifications

Cyanopropylphenyl Polysiloxane. Suitable replacement for: DB-624, OV-624, AT-624, HP-VOC, CP-Select624CB, 007-624, Rtx-Volatiles, VOCOL, ZB-624.



Description	Part No.
GC Columns - BP1	
0.25 mm ID x 0.25 µm Film Thickness x 30 m Length BP1 GC Capillary Column	CH-100000
0.25 mm ID x 1 µm Film Thickness x 30 m Length BP1 GC Capillary Column	CH-100001
0.32 mm ID x 1 µm Film Thickness x 25 m Length BP1 GC Capillary Column	CH-100002
GC Columns - BPX5	
0.25 mm ID x 0.25 µm Film Thickness x 30 m Length BPX5 GC Capillary Column	CH-100003
GC Columns - BP5	
0.25 mm ID x 0.25 µm Film Thickness x 30 m Length BP5 GC Capillary Column	CH-100004
GC Columns - HT8-PCB	
0.25 mm ID x 60 m Length HT8-PCB GC Capillary Column	CH-100005
GC Columns - BP5MS	
0.25 mm ID x 0.25 µm Film Thickness x 30 m Length BP5MS GC Capillary Column	CH-100006
GC Columns - BP20	
0.25 mm ID x 0.25 µm Film Thickness x 30 m Length BP20 GC Capillary Column	CH-100007
GC Columns - BP21	
0.32 mm ID x 0.25 µm Film Thickness x 60 m Length BP21 GC Capillary Column	CH-100008
GC Columns - BPX70	
0.32 mm ID x 0.25 µm Film Thickness x 50 m Length BPX70 GC Capillary Column	CH-100009
GC Columns - BPX35	
0.25 mm ID x 0.25 µm Film Thickness x 30 m Length BPX35 GC Capillary Column	CH-100010
GC Columns - BPX50	
0.25 mm ID x 0.25 µm Film Thickness x 15 m Length BPX50 GC Capillary Column	CH-100011
0.25 mm ID x 0.25 µm Film Thickness x 30 m Length BPX50 GC Capillary Column	CH-100012
GC Columns - SolGel-WAX	
0.53 mm ID x 1.0 µm Film Thickness x 30 m Length SolGel-WAX GC Capillary Column	CH-100013
GC Columns - BPX1	
0.53 mm ID x 0.9 µm Film Thickness x 10 m Length BPX1 simulated distillation GC Capillary Column	CH-100014
GC Columns - BP624	
0.53 mm ID x 3.0 µm Film Thickness x 30 m Length BP624 GC Capillary Column	CH-100015
0.53 mm ID x 3.0 µm Film Thickness x 60 m Length BP624 GC Capillary Column	CH-100016
0.25 mm ID x 1.4 µm Film Thickness x 30 m Length BP624 GC Capillary Column	CH-100017

AFP

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