

GC Columns by Stationary Phases

GS-Tek offers wide ranges of GC columns coated with the stationary phases equivalent or similar to commercially available phases. All stationary phases are carefully prepared to control its purity, polarity and thermal stability. Table I lists out general information for all stationary phases GS-Tek offers.

Table 1 Overview of GsBP Stationary Phases

Stationary phase	Composite	Temperature limit °C
GsBP-1, GsBP-1MS	100% dimethyl polysiloxane	-60 to 325/350
GsBP-5, GsBP-5MS	95% dimethyl/ 5% diphenyl polysiloxane	-60 to 325/350
GsBP-XLB	Proprietary phase	-60 to 325/350
GsBP-35MS	65% dimethyl/ 35% diphenyl polysiloxane	-20 to 320/340
GsBP-50+MS	Poly(50% diphenyl, 50%dimethylsiloxane)	-20 to 320/340
GsBP-1301, GsBP-624, GsBP-VMS	Approximately 6% cyanopropylphenol/ 94% dimethyl polysiloxane	-20 to 260/280
GsBP-1701, GsBP-1701-MS	14% cyanopropylphenol/ 86% dimethyl polysiloxane	-20 to 280/300
GsBP-Inowax, GsBP-Inowax-MS	Crosslinked Polyethylene glycol (PEG)	40 to 260/280
GsBP-FFAP	PEG modified w/ acids	40 to 260/280
GsBP-225	50%cyanopropylmethyl 50% phenylmethylpolysiloxane	40 to 240/260
GsBP-FAME	High content of cyanopropylphenyl polysiloxane	20 to 260
GsBP-PLOT Al ₂ O ₃ / "KCl", "S", "M"	Aluminum oxide, modified with KCL, Na ₂ SO ₄ or Na ₂ MoO ₄	-60 to 200/250
GsBP-PLOT Molesieve 5A	Molecular Sieve zeolite, 5A	-60 to 300
GsBP-PLOT Q	Crosslinked divinylbenzene polymer	-60 to 260/280
GsBP-PLOT U	Crosslinked divinylbenzene ethylene glycol dimethacrylate copolymer	-60 to 200/210
GsBP-PLOT GasPro	Modified porous silica layer	-60 to 300
GsBP-PLOT Carbon	Porous carbon	-60 to 350

Polysiloxane Based Stationary Phases

Polysiloxanes are the most common stationary phases for general separations. They are relatively stable, robust and versatile to a wide range of applications. Different functional groups that substitute to the methyl group on the silicon atom characterize the polarity of polysiloxane. Carefully controlling the polymer synthesis, capillary tubing surface treatment and other manufacturing processes can control column characteristics, such as polarity, retention, efficiency and inertness, and replication of column performance with very small variation margins.

GS-Tek offers non-polar and mid-polar polysiloxane phase columns. GsBP-1 and GsBP-5 are examples of non-polar phases, GsBP-35MS, GsBP-50+MS, GsBP-1301, and GsBP-1701 are examples of mid-polar phases. Some examples of specially designed mid-polar phases for environmental applications are GsBP-624, GsBP-VMS and GsBP-XLB. GS-Tek offers a broad line of low bleed columns for GS-MSD, GC and other instrument applications.

GsBP-1

General column for most popular applications, particularly for petroleum and petrochemical industries

100% Poly(dimethylsiloxane), cross-linked and bonded

- Solvent rinse-able and high temperature limit
- Low column bleed, inert and neutral surface, high plate number
- Wide range of column dimensions and stationary phase film thicknesses
- Non-polar, equivalent to USP G1, G2, G38

Similar Phases: DB-1, HP-1, Ultra-1, SPB-1, RTX-1, CP-Sil 5CB, BP-1, ZB-1, AT-1, MDN-1, OV-1, OV101, Optima-1

Typical Applications:

Aldehyde and Ketone	EPA TO-14 Compounds	Inorganic Hydride Gases	Pyrethrins
Anabolic Steroids	Esters I	Kerosine	Pyrolysates of Polystyrene
Anticonvulsants	Ethylene Glycol Mixture	Massachusetts APH Mix	Pyrolysis of High density Polyethylene
Aromatics I	Eucalyptus Oil, Camphor, Menthol	Methanol in ethanol	Regular Unleaded Gasoline
Aromatics in Gasoline - ASTM Method 5769	Fatty Acids (Free)	Mineral Spirits	Solvents IV
Citronella Java Oil	Flavor Volatiles	Nitrogen Based Solvent II	Steroids: Sex Hormones
Common Industrial Solvents	Fragrance Reference Standard I	Organotin Compounds	Sulfur in Gasoline
Denatured Fuel Ethanol-ASTM D5501	Freon® 12 & Ethylene Oxide	Oxygenates in Gasoline ASTM D5599	Sulfur in Naphtha

Aldehyde and Ketone	EPA TO-14 Compounds	Inorganic Hydride Gases	Pyrethrins
Diesel Fuel	Glycols III	Ozone Precursors- C2-C9 Gas Standard	Sulfur Compounds in Natural Gas
DNPH Derivative	Glycols/Diols	PFBHA Derivative	Synthetic Essential Oil Mixture
Drug Screen	Halogenated Hydrocarbons II	Polyethylene	Triethylene Glycol and Impurities
EPA Method 551	Hydrocarbons Sim-Dis	Inorganic Hydride Gases	Volatile Amines

GsBP-1 Ordering Info

ID (mm)	Length (m)	Film (µm)	Temperature Limit (°C)	P/N
0.20	12	0.33	-60 to 325/350	0120-1203
	25	0.11	-60 to 325/350	0120-2501
	25	0.33	-60 to 325/350	0120-2503
	25	0.50	-60 to 325/350	0120-2505
	50	0.11	-60 to 325/350	0120-5001
	50	0.33	-60 to 325/350	0120-5003
0.25	15	0.10	-60 to 325/350	0125-1501
	15	0.25	-60 to 325/350	0125-1502
	15	1.00	-60 to 325/350	0125-1510
	30	0.10	-60 to 325/350	0125-3001
	30	0.25	-60 to 325/350	0125-3002
	30	0.50	-60 to 325/350	0125-3005
	60	0.25	-60 to 325/350	0125-6002
	60	0.50	-60 to 325/350	0125-6005
	60	1.00	-60 to 325/350	0125-6010
	60	1.00	-60 to 325/350	0125-6010
0.32	15	0.10	-60 to 325/350	0132-1501
	15	0.25	-60 to 325/350	0132-1502
	15	1.00	-60 to 325/350	0132-1510
	25	0.17	-60 to 325/350	0132-2501
	25	0.52	-60 to 325/350	0132-2505
	25	1.05	-60 to 325/350	0132-2510
	30	0.10	-60 to 325/350	0132-3001
	30	0.25	-60 to 325/350	0132-3002
	30	0.50	-60 to 325/350	0132-3005
	30	1.00	-60 to 325/350	0132-3010
	30	3.00	-60 to 260/280	0132-3030
	30	4.00	-60 to 260/280	0132-3040
	30	5.00	-60 to 260/280	0132-3050
	50	0.17	-60 to 325/350	0132-5001
	50	0.52	-60 to 325/350	0132-5005
	50	1.05	-60 to 325/350	0132-5010
	60	0.10	-60 to 325/350	0132-6001
	60	0.25	-60 to 325/350	0132-6002
	60	0.50	-60 to 325/350	0132-6005
	60	1.00	-60 to 325/350	0132-6010
	60	3.00	-60 to 260/280	0132-6030
	60	5.00	-60 to 260/280	0132-6050
0.53	5	0.15	-60 to 320/350	0153-0501
	5	0.88	-60 to 300/320	0153-0508
	5	2.65	-60 to 260/280	0153-0526
	5	5.00	-60 to 260/280	0153-0550
	7.5	1.50	-60 to 280/300	0153-0715
	7.5	5.00	-60 to 260/280	0153-0750
	10	0.88	-60 to 300/320	0153-1008
	10	2.65	-60 to 260/280	0153-1026
	10	5.00	-60 to 260/280	0153-1050
	15	0.15	-60 to 320/350	0153-1501

ID (mm)	Length (m)	Film (µm)	Temperature Limit (°C)	P/N
15	15	0.25	-60 to 320/350	0153-1502
15	15	0.50	-60 to 300/320	0153-1505
15	15	1.00	-60 to 300/320	0153-1510
15	15	1.50	-60 to 300/320	0153-1515
15	15	3.00	-60 to 260/280	0153-1530
15	15	5.00	-60 to 260/280	0153-1550
30	30	0.10	-60 to 300/320	0153-3001
30	30	0.25	-60 to 300/320	0153-3002
30	30	0.50	-60 to 300/320	0153-3005
30	30	0.88	-60 to 300/320	0153-3008
30	30	1.00	-60 to 300/320	0153-3010
30	30	1.50	-60 to 300/320	0153-3015
30	30	2.65	-60 to 260/280	0153-3026
30	30	3.00	-60 to 260/280	0153-3030
30	30	5.00	-60 to 260/280	0153-3050
50	50	3.00	-60 to 260/280	0153-5030
50	50	5.00	-60 to 260/280	0153-5050
60	60	1.00	-60 to 300/320	0153-6010
60	60	3.00	-60 to 260/280	0153-6030
60	60	5.00	-60 to 260/280	0153-6050

TIP: Use premium septum to minimize 'Baseline' increases.

GsBP-5

General column for most popular applications, particularly for environmental, chemical, pharmaceutical, agriculture, food, drug and others. Good start columns for method development

- Poly(5% diphenyl, 95% dimethylsiloxane), crosslinked and bonded
- Solvent rinseable, high temperature limit
- Low column bleed, inert and neutral surface, high plate numbers
- Wide range of column dimensions and stationary phase film thicknesses
- Non-polar, equivalent to USP G27, G66, G41

Similar Phases: DB-5, HP-5, Ultra-5, SPB-5, RTX-5, Rxi-5sil, CP-Sil 8CB, BP-5, ZB-5, AT-5, MDN-5, OV-5, Optima-5

Typical Applications:

Amines & Phenols	Chlorinated hydrocarbons	Garlic Oil	Organomercury Compounds
Amphetamines and Precursors - TMS Derivative	CLP Pesticides	Herbicides	Organotin Compounds II
Antihistamines	Cocaine & Metabolites (TMS Derivatives)	Lemon Oil	Pain Killers - TMS Derivatives
Aroclors 1016-1268 (without 1221)	Cold Medication	Marijuana - TMS Derivatives	PBDEs
Bacterial Fatty Acid Methyl Esters	Cold-Pressed Orange Oil	Major Metabolites - TMS Derivatives	PCBs by EPA Method 8083
Basic Drugs (Underivatized)	Common Drug Screen	Motor Oil	Phencyclidine (PCP)
Benzodiazepines (Basic Drugs-Underivatized)	Congeners in DIN Method PCBs	Narcotics and Adulterants	Phytosterols (Saw Palmetto)
Bergamot Oil	Ethanolamines	Opiates (TMS Derivatives)	Steroids: Anabolic (Underivatized)
Butter Triglycerides	Ethyleneamines	Organic Volatile Impurities	Sympathomimetic Amines Derivatives
Cannabinoids (TMS Derivatives)	European Red List Volatiles	Organochlorine Pesticides	Ylang Ylang Oil