

Flash

Biotage* FLASH+* Chromatography Systems

- High-yield, high-performance purification
- Customizable and easily upgraded

NEW

Designed for efficient performance, cartridge-based flash chromatography systems purify sample loads from 5mg to 5g. Ideal for applications involving purification throughout multistep solution-phase synthesis in which complex mixtures can possibly occur. Feature an inert stainless-steel and PTFE flow path for broad solvent compatibility, and up to 100psig operation for faster flowrates and improved peak resolution. Patented Zero Insertion Force (ZIF*) head assembly technology on compression modules improves sample purification by using axial compression on preadsorbed sample cartridges. Dead volume is eliminated; dilution, channeling, and sample remixing are reduced. Cartridge insertion and removal are also easily accomplished.

FLASH+ systems offer the user three methods for loading samples for purification:

1. Direct liquid injection onto the cartridge using the three-way injection valve.
2. With patented Samplet* loading cartridges for preparation of multiple samples in advance.
3. With patented Zero Insertion Force-Sample Injection Modules (ZIF-SIM*) for low-soluble samples such as oils.

Core Components

System is comprised of a FLASH Start-up kit, solvent reservoir, and injection valve with choice of compression module and ZIF-SIM. One-year limited warranty. Cartridges sold separately.

FLASH+ Start-Up Kit includes a 12L x 4 1/2" W x 10" H (30.5 x 11.4 x 25.4cm) stand with swing-out arm and dispenser with Luer outlet port. Holds a solvent reservoir and has mounting holes for compression modules and ZIF-SIM.

Kit also contains 6' (1.8m) of 1/4" (6.4mm) O.D. blue air tubing, an air line adapter, four (two 2mL and two 10mL) syringes for sample loading, two stopcock valves, reservoir gasket, fittings, and adapters.

Injection Valve is a three-way vertical type with Luer-Lok* adapter for liquids.

Air Regulator regulates flowrates from 0 to 60psig.

Solvent Reservoirs are stainless steel and come complete with solvent shut-off and relief valves. Use 1L (0.3 gal.) for FLASH 12+*, 25+*, and 40+* compression modules; 4L (1.1 gal.) is used with the FLASH 65i* compression module only.

Compression Modules

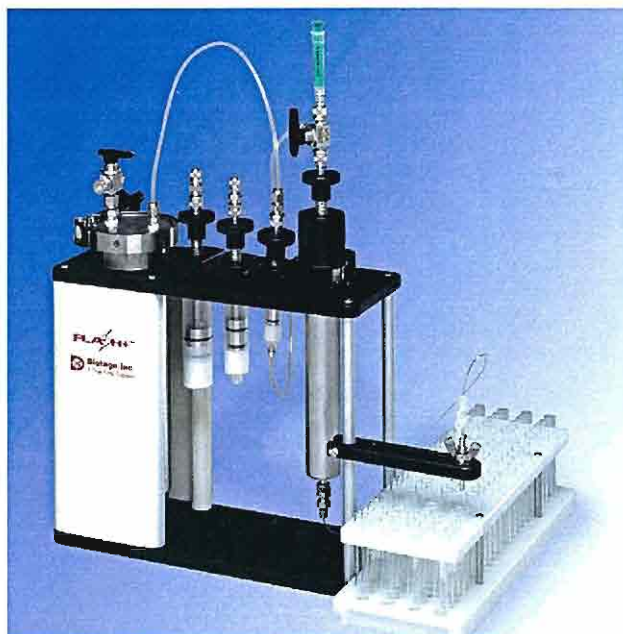
FLASH+ Compression Modules. With ZIF head assembly designed to distribute sample and solvent flow evenly through FLASH+ and Samplet cartridges. Choose from FLASH 12+, 25+, and 40+ with short or medium barrels (see below). FLASH-Pac+* set includes one each of FLASH 12+, 25+, and 40+ head assemblies and one each of the 12+, 25+, and 40+ short and medium barrels.

Additional Barrels. All FLASH+ compression modules include a head assembly and one short or medium barrel, depending on size ordered. Barrels are interchangeable, so additional barrels of the same diameter can be ordered if the operator wants the ability to use both cartridge lengths.

FLASH 65i Compression Modules come complete with ZIF head assembly and FLASH 65i barrel. Use 65mm FLASHi-style cartridges for purifying samples from 2 to 15g. Not compatible with Samplet cartridges. Require a 4L solvent reservoir.



Note: FLASH+ chromatography systems are customizable and can be upgraded at any time. Simply choose the precise set of components or correct component upgrade for your laboratory's specific requirements.



FLASH 25+M System with ZIF-SIM10 and Test-tube Rack (rack available as an optional accessory; sold separately)

Zero Insertion Force-Sample Injection Modules (ZIF-SIM)

Feature same ZIF head assembly technology as compression modules. Add additional purification capabilities; use for simple, effective loading of liquid, oil, closely eluting, and low-solubility samples.

To use, first dissolve sample in strong solvent before mixing with loose silica. Let solvent evaporate before hand packing dried silica/sample mixture into the ZIF-SIM barrel. Module is easily inserted inline between the solvent reservoir and the compression module; eluent then flows through the module to elute the sample components onto the purification cartridge.

Choice of three silica capacities. All modules come with ZIF head assembly, 20 disposable sample-loading barrels (each containing a bottom frit), top frits, polypropylene frit insertion tool, tubing kit (09-413-85; with luer fitting with 1/8" tubing and 1/8" knurled nut [can also be purchased separately]), and user's manual.

Building a Complete FLASH+ System

Core Component†	Compression Module(s)	ZIF-SIM(s)	Additional Barrel(s)
A - FLASH+ Start-Up Kit (09-413-76)	FLASH 12+S (09-413-60)	ZIF-SIM10* (09-413-79)	FLASH 12+S (09-413-68)
	FLASH 12+M (09-413-61)		FLASH 12+M (09-413-69)
	FLASH 25+S (09-413-62)	ZIF-SIM10 (09-413-79)	FLASH 25+S (09-413-70)
	FLASH 25+M (09-413-63)	or ZIF-SIM35* (09-413-80)	FLASH 25+M (09-413-71)
B - 1L Solvent Reservoir (09-413-77)	FLASH 40+S (09-413-64)	ZIF-SIM35 (09-413-80)	FLASH 40+S (09-413-72)
	FLASH 40+M (09-413-65)		FLASH 40+M (09-413-73)
or	FLASH 65i (09-413-66)	----	----
4L Solvent Reservoir (09-413-78)	FLASH-Pac+ Set (09-413-67)		All

†Must purchase one each of A; choose one from B.

FLASH+* System Core Components

Description	Biotage* No.	Cat. No.	Each
FLASH+ Start-Up Kit	07923	09-413-76	387.00
Three-Way Vertical Injection Valve	FIV-VLV-1000	09-413-74	361.00
Air Regulator	FAR-0000	09-413-75	143.00
1L Solvent Reservoir	FN-001-41201	09-413-77	1077.00
4L Solvent Reservoir	FN-004-04000	09-413-78	1077.00

FLASH+* Compression Modules

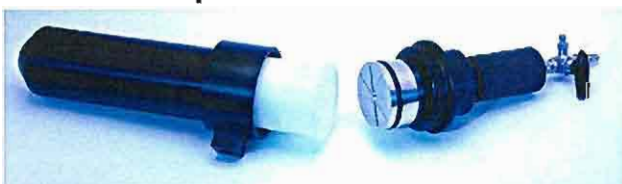
Module	Biotage* No.	Cat. No.	Each
FLASH 12+*S	07857	09-413-60	871.00
FLASH 12+*M	07858	09-413-61	922.00
FLASH 25+*S	FC-022-16024	09-413-62	974.00
FLASH 25+*M	FC-022-16044	09-413-63	1025.00
FLASH 40+*S	07975	09-413-64	1108.00
FLASH 40+*M	07976	09-413-65	1133.00
FLASH-Pac+* Set (contains one each of the 12+ S/M, 25+ S/M, and 40+ S/M Compression Modules)	08615	09-413-67	4115.00

Additional FLASH+* Barrels

For use with Compression Modules.

Description	Biotage* No.	Cat. No.	Each
FLASH 12+*S	07395	09-413-68	335.00
FLASH 12+*M	07383	09-413-69	387.00
FLASH 25+*S	FB-022-16024	09-413-70	412.00
FLASH 25+*M	FB-022-16044	09-413-71	438.00
FLASH 40+*S	07387	09-413-72	464.00
FLASH 40+*M	07388	09-413-73	490.00

FLASH 65i* Compression Module



FLASH 65i* compression module and cartridge

Description	Biotage No.	Cat. No.	Each
FLASH 65i* Compression Module	07868	09-413-66	1334.00



Left to right: ZIF-SIM10*, ZIF-SIM35*, ZIF-SIM60*

ZIF-SIM* Modules and Tubing Kit

Description	Holds	Biotage No.	Cat. No.	Each
ZIF-SIM10 Module	0.09 oz. (2.5g)	FZIM-0010	09-413-79	510.00
ZIF-SIM35 Module	0.4 oz. (10g)	FZIM-0035	09-413-80	613.00
ZIF-SIM60 Module	0.7 oz. (20g)	FZIM-0060	09-413-81	716.00
ZIF-SIM Tubing Kit	----	01903	09-413-85	39.00

Accessories for FLASH+* Systems

NEW Test Tube Racks. Use with any FLASH+ chromatography system to collect fractions. External dimensions: 13 1/2" L x 5W x 3 1/2" H (34.3 x 12.7 x 8.9cm). Constructed of Sanalite* HDPE, the surface is chemical- and corrosion-resistant. Two per pack.

Tube Size (Dia. x Length)	No. of Holes	Biotage* No.	Cat. No.	Pack of 2
13 x 100mm	120	HRAK-013	09-413-86	335.00
16 x 100mm	120	HRAK-016	09-413-87	335.00
16 x 150mm	96	ORAK-016	09-413-88	335.00
18 x 150mm	96	ORAK-018	09-413-89	335.00
25 x 150mm	48	ORAK-025	09-413-90	335.00

NEW Accessories for 1L Solvent Reservoir (09-413-77).

Description	Biotage* No.	Cat. No.	Each
3" V-Band Clamp	08526	09-414-06	65.00
3" Polyethylene Gasket	01617	09-414-07	16.00

NEW Ferrule/Nut Sets. 09-414-46 is for general FLASH* System use; 09-414-44 and 09-414-45 are for use on FLASH Compression Modules.

Description	Includes	Biotage No.	Cat. No.	Each
Ferrule/Nut Set	Two 1/4" front PFA ferrules, two 1/4" back PFA ferrules, two finger-tight stainless-steel nuts	03061	09-414-44	30.00
Ferrule Set	1/4" and 1/8" stainless-steel ferrules and nuts (three sets of each)	NF-15075	09-414-46	63.00
Ferrule Set	Six 1/4" front PFA ferrules, six 1/4" back PFA ferrules	03062	09-414-45	46.00

NEW ISCO Adapter Kit. Adapter kit allows the use of FLASH+* or FLASHi* Compression Modules for ISCO Systems.

Description	Biotage* No.	Cat. No.	Each
Adapter Kit	09335	09-414-38	295.00

NEW E-clip Retaining Ring. Use with FLASH* Compression Modules to hold O-rings in place.

Description	Biotage No.	Cat. No.	Each
E-Clip Retaining Ring	03024	09-414-24	6.00

Contd. on next page.

Accessories for FLASH+* Systems, contd.

NEW **O-Rings.** For use with various FLASH+* components; see ordering table below.

Material	For Use With	Biotage* No.	Cat. No.	Each
Chemraz 107	Lower ZIF* Head of FLASH 12+* Compression Module	04593	09-414-08	52.00
Chemraz 108	Upper ZIF Head of FLASH 12+ Compression Module, FLASH 12+ Barrel	02948	09-414-09	42.00
Chemraz 109	ZIF-SIM10*, lower O-ring	06176	09-414-20	52.00
Chemraz 111	ZIF-SIM10, upper O-ring	00656	09-414-19	52.00
Chemraz 206	ZIF-SIM35*, lower O-ring	06177	09-414-21	68.00
Chemraz 208	Lower ZIF Head of FLASH 25+* Compression Module; ZIF-SIM35, upper O-ring	06178	09-414-10	88.00
Chemraz 209	Upper ZIF Head of FLASH 25+ Compression Module; FLASH 25+ Barrel; ZIF-SIM60*, lower O-ring	06221	09-414-11	98.00
Chemraz 211	ZIF-SIM60, upper O-ring	06220	09-414-22	103.00
Chemraz 215	Lower ZIF Head of FLASH 40+* Compression Module	07765	09-414-12	99.00
Chemraz 218	Upper ZIF Head of FLASH 40+ Compression Module, FLASH 40+ Barrel	08557	09-414-13	147.00
Chemraz 330	FLASH 65i* Compression Module	08395	09-414-14	232.00

Biotage* TLC Plates and Tank

NEW Obtain a more predictable performance and improve method development reliability.

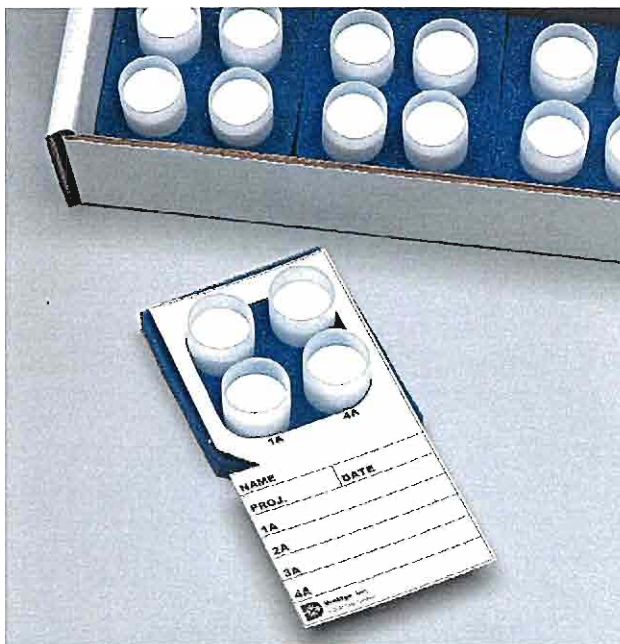
TLC Plates feature same KP-Sil* silica used on Biotage FLASH* purification cartridges for high loading capacity and TLC-to-flash correlation. Rf values will exhibit a more accurate prediction of elution order, CV, and sample loading. Glass-backed for rigidity and chemical inertness. Impregnated with a 25nm fluorescent indicator to enhance visualization of aromatic compounds, organic binder. Choose from three plate sizes.

Multichamber TLC Tank with its isolated chambers allow simultaneous evaluation of up to three different solvent mixtures, simplifying method development. Capacity: 1/3 oz. (10mL). External dimensions: 5 1/2" L x 4W x 5 1/2" H (14 x 10 x 14cm); chamber dimensions (internal): 5 1/8" L x 1W x 4 3/4" H (13 x 2.5 x 12cm). Each of the three chambers hold eight 2.5 x 7.5cm TLC plates, four 5 x 10cm TLC plates, or two 10 x 10cm TLC plates.

Description	Size	Biotage* No.	Cat. No.	Price
TLC Plate	2.5 x 7.5cm	TLC-2575-FI	09-413-93	Pk. of 100/204.00
	5 x 10cm	TLC-0510-FI	09-413-94	Pk. of 50/81.00
	10 x 10cm	TLC-1010-FI	09-413-96	Pk. of 25/94.00
Multichamber TLC Tank	----	TLC-TANK-1	09-413-95	Ea./139.00



Biotage* Samplet* Cartridges



NEW Small, prepacked sample-loading cartridges for use with FLASH+* purification cartridges. Samplet cartridges function like guard columns, protecting the cartridge from contamination and improving performance.

Easy to use. Just dissolve sample in solvent, apply sample solution to Samplet cartridges, evaporate, and insert Samplet cartridges into FLASH+ cartridges. If the dissolution solvent is nonpolar, adsorb the reaction mixture onto Samplet cartridges and load wet into the FLASH+ cartridges.

Many can be prepared at one time, reducing total sample preparation time. Eliminate time-consuming rotary evaporation method which diminishes silica and sample handling. Samplet cartridges increase loading capacity, compound retention, and resolution. Accommodate a large range of sample sizes. Available in KP-Sil* (Silica), KP-C18-HS* (reversed phase), and KP-NH* (Amine) materials.

Model	O.D.	I.D. x L	Amount of Sorbent Material	Sample Volume	Cat. No.	Case of
KP-Sil (Silica)						
FLASH 12+	12mm	10 x 20mm	0.5g	1mL	09-413-31	48/83.00
FLASH 25+	25mm	23 x 20mm	3g	5mL	09-413-40	48/88.00
FLASH 40+	40mm	38 x 20mm	8g	10mL	09-413-49	48/124.00
KP-C18-HS (Reversed phase)						
FLASH 12+	12mm	10 x 20mm	0.6g	1mL	09-413-34	48/129.00
FLASH 25+	25mm	23 x 20mm	4.0g	5mL	09-413-43	20/124.00
FLASH 40+	40mm	38 x 20mm	10g	10mL	09-413-52	20/155.00
KP-NH (Amine)						
FLASH 12+	12mm	10 x 20mm	0.6g	1mL	09-413-37	48/285.00
FLASH 25+	25mm	23 x 20mm	4g	5mL	09-413-46	20/260.00
FLASH 40+	40mm	38 x 20mm	12g	10mL	09-413-55	20/495.00

▶ See also:
Low Pressure Chromatography, pp. 1773-1781;
Thin Layer Chromatography, pp. 1787-1791.

Biotage* FLASH+* HPFC Cartridges

NEW Featuring uniform particle-size distribution that generates slow elution bands, patented FLASH+ prepacked cartridges are flat on top and bottom for better performance. Tolerate pressure to 100psig—enabling faster flowrates and use of higher viscosity solvents. Large particle-surface area for high capacity and efficiency. Recessed inlet provides room for Samplet* cartridges (sold separately) to yield quick, convenient sample introduction, and axial compression for greater resolution. Food-grade polyethylene body for easy disposal. Meet 21 CFR 177.1520 regulations. Manufactured under strict ISO quality standards to ensure consistent cartridge-to-cartridge performance.



Choose from three packing materials: **KP-Sil* Silica Cartridges** feature 500m²/g surface area, 60Å porosity, 40 to 63µm particle size. **KP-C18-HS* Cartridges** are reversed phase and have 450m²/g surface area, 90Å porosity, 40 to 63µm particle size. Contain 18% of carbon. Endcapped. **KP-NH* (Amine) Cartridges** exhibit 320m²/g surface area, 100Å porosity, 40 to 75µm particle size. Accept high sample loads of polar, amine-containing samples and allow minimal silanol interaction.

Model	Sample Load	Volume (Overall)	I.D. x L (mm)	Biotage No.	Cat. No.	Price
KP-Sil (Silica)						
12+S	4-200mg	6mL	12 x 75	FPK0-1107-15026	09-413-29	Cs. of 20/114.00
12+M	8-400mg	12mL	12 x 150	FPK0-1107-15046	09-413-30	Cs. of 20/135.00
25+S	15-600mg	24mL	25 x 75	FPK0-1107-16026	09-413-38	Cs. of 20/232.00
25+M	30-800mg	48mL	25 x 150	FPK0-1107-16046	09-413-39	Cs. of 20/309.00
40+S	40-2000mg	60mL	40 x 75	FPK0-1107-17026	09-413-47	Cs. of 20/361.00
40+M	80-5000mg	120mL	40 x 150	FPK0-1107-17046	09-413-48	Cs. of 20/577.00
KP-C18-HS (Reversed phase)						
12+S	0.4-20mg	6mL	12 x 75	FPL0111815025	09-413-32	Cs. of 2/65.00
12+M	0.8-40mg	12mL	12 x 150	FPL0111815045	09-413-33	Cs. of 2/109.00
25+S	1.5-60mg	24mL	25 x 75	FPL0-1118-16025	09-413-41	Cs. of 2/232.00
25+M	3-80mg	48mL	25 x 150	FPL0111816045	09-413-42	Cs. of 2/309.00
40+S	4-200mg	60mL	40 x 75	FPL0-1118-17020	09-413-50	Ea./191.00
40+M	8-500mg	120mL	40 x 150	FPL0111817040	09-413-51	Ea./361.00
KP-NH (Amine)						
12+S	8-500mg	6mL	12 x 75	FPNH-12S	09-413-35	Cs. of 20/300.00
12+M	2-100mg	12mL	12 x 150	FPNH-12M	09-413-36	Cs. of 20/425.00
25+S	4-200mg	24mL	25 x 75	FPNH-25S	09-413-44	Cs. of 20/385.00
25+M	8-400mg	48mL	25 x 150	FPNH-25M	09-413-45	Cs. of 20/630.00
40+S	15-800mg	60mL	40 x 75	FPNH-40S	09-413-53	Cs. of 5/400.00
40+M	20-1000mg	120mL	40 x 150	FPNH-40M	09-413-54	Cs. of 5/670.00

Biotage* FLASHi* Series Cartridges

NEW Cost-sensitive FLASHi Series cartridges for use with older chromatography technology. Feature uniform particle-size distribution; prepacked cartridges are curved on top and bottom. Large particle-surface area for high capacity and efficiency. Food-grade polyethylene body for easy disposal. Meet 21 CFR 177.1520 regulations. Manufactured under strict ISO quality standards to ensure consistent cartridge-to-cartridge performance.

Choose from two packing materials: **KP-Sil* silica cartridges** feature 500m²/g surface area, 60Å porosity, 40 to 63µm particle size. **KP-C18-HS* cartridges** are reversed phase and have 450m²/g surface area, 90Å porosity, 40 to 63µm particle size. Contain 18% of carbon. Endcapped.

Model	Sample Load	Volume (Overall)	I.D. x L (mm)	Biotage No.	Cat. No.	Price	Biotage No.	Cat. No.	Case of
KP-Sil (Silica)									
12i*S	4-200mg	5mL	12 x 75	FK0-1107-15026EA	09-413-05EA	Ea./5.70	FPK0-1107-15026	09-413-05	20/114.00
12iM	10-400mg	10mL	12 x 150	FK0-1107-15046EA	09-413-06EA	Ea./6.75	FK0-1107-15046	09-413-06	20/135.00
40i*S	100-1000mg	50mL	40 x 75	FK0-1107-17024EA	09-413-09EA	Ea./16.67	FK0-1107-17024	09-413-09	12/200.00
40iM	250-5000mg	100mL	40 x 150	FK0-1107-17044EA	09-413-10EA	Ea./27.08	FK0-1107-17044	09-413-10	12/325.00
40iL	300-7500mg	150mL	40 x 200	FK0-1107-17174EA	09-413-11EA	Ea./30.08	FK0-1107-17174	09-413-11	12/361.00
65i*	800mg-13g	450mL	65 x 200	FK0-1107-1804CEA	09-413-15EA	Ea./60.17	FK0-1107-1804C	09-413-15	6/361.00
75i*S	1.5-10g	320mL	75 x 90	FK0-1107-19165	09-413-17	Cs. of 2/238.00	FK0-1107-19163	09-413-20	10/1137.00
75iM	2.5-20g	535mL	75 x 150	FK0-1107-19045	09-413-18	Cs. of 2/336.00	FK0-1107-19043	09-413-21	10/1585.00
75iL	5-40g	1070mL	75 x 300	FK0-1107-19075	09-413-19	Cs. of 2/423.00	FK0-1107-19073	09-413-22	10/1996.00
150i*M	18-125g	4.3L	150 x 300	FK0-1107-25075	09-413-26	Cs. of 2/1985.00	----	----	----
150iL	38-250g	8.6L	150 x 600	FK0-1107-25155	09-413-27	Cs. of 2/2639.00	----	----	----
KP-C18-HS (Reversed phase)									
12iS	4-200mg	5mL	12 x 75	----	----	----	FLO-1118-15025	09-413-07	2/65.00
12iM	10-400mg	10mL	12 x 150	----	----	----	FLO-1118-15045	09-413-08	2/109.00
40iS	100-1000mg	50mL	40 x 75	FLO-1118-17020	09-413-12	Ea./174.00	----	----	----
40iM	250-5000mg	100mL	40 x 150	FLO-1118-17040	09-413-13	Ea./341.00	----	----	----
40iL	300-7500mg	150mL	40 x 200	FLO-1118-17170	09-413-14	Ea./433.00	----	----	----
65i	800mg-13g	450mL	65 x 200	FLO-1118-18040	09-413-16	Ea./925.00	----	----	----
75iS	1.5-10g	320mL	75 x 90	FLO-1118-19160	09-413-23	Ea./698.00	----	----	----
75iM	2.5-20g	535mL	75 x 150	FLO-1118-19040	09-413-24	Ea./1250.00	----	----	----
75iL	5-40g	1070mL	75 x 300	FLO-1118-19070	09-413-25	Ea./2357.00	----	----	----
150iM	18-125g	4.3L	150 x 300	FLO-1118-25070	09-413-28	Ea./7381.00	----	----	----