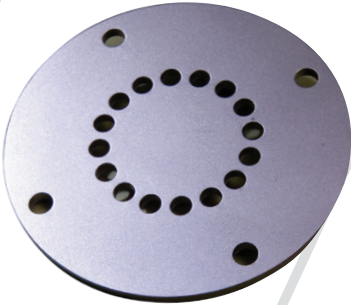
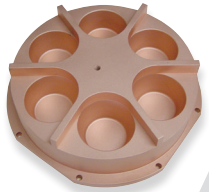


2022

Fil-Tech

Quality & Savings From Stock



SCAN FOR OUR FULL CATALOG

800-743-1743 • 617-227-1133

paula@filtech.com

www.filtech.com Online Ordering



Liquid Plating Crystals

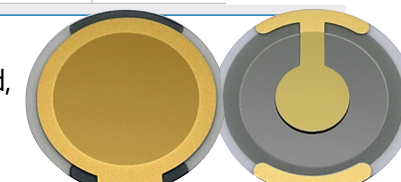
1" Diameter 5MHz polished, plano/plano crystals for measurements in gas or liquid



Fil-Tech	ELECTRODE	SRS	INFICON
QM1001	Cr/Au	0100RX1 \$395/10	149273-1 \$61 each
QM1003	Ti/Au	0100RX3 395/10	149257-1 51
QM1003-1	Ti/Ti	0100RX4 595/10	149274-1 67
QM1004	Ti/Pt		
QM1005	Ti/AI203		
QM1007	Cr/Au/Ni		
QM1008	Stress Relieving Alloy		
QM1010	Cr/Au/Mo		
QM1011	Ti/Mo		
QM1012	Cr/Au/Cu		
QM1013	Cr/Au/Zn		
QM1015	Cr/Au/SiO2		
QM1018	Cr/Au/Cr		

Fil-Tech Crystals
Comparable to Q-SENSE

Fil-Tech	ELECTRODE	Q-SENSE
QXS0301 \$50 each	Au	QSX 301 \$295/5
QXS0303 50	SiO2	QSX 303 450/5
QXS0304 50	SS	QSX 304 N/A
QXS0309 50	Al	
QXS0310 50	Ti	
QXS0313 50	Cu	
QXS0314 80	Pt	QSX 314 450/5



Quality Crystals®

In 6MHz and 5MHz in Gold, Stress-Relieving Alloy®, Longer Life Gold®, Silver and Advanced Adhesion Alloy®. The metal used for the contact electrode on the crystal has an effect on the crystal's ability to measure film thickness. Choose the best electrode for your coating process.

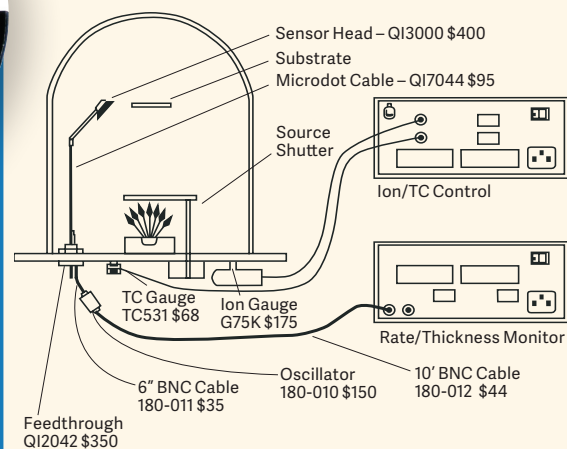
Fil-Tech	INFICON STYLE	FREQUENCY & P/N
QI8010	Gold	6MHz 008-010-G10
QI8012	Longer Life Gold®	6MHz
QI8008	Stress Relieving Alloy®	6MHz 750-769-G1
QI8014	Advanced Adhesion Alloy®	6MHz
QI8009	Silver	6MHz 008-009-G10

Fil-Tech	BALZERS STYLE	
QB104G	Gold	5MHz B489-025-T
QB104GL	Longer Life Gold®	5MHz
QB104A	Stress Relieving Alloy®	5MHz
QB104S	Silver	5MHz BN845-104-T

Fil-Tech	SLOAN STYLE	
QS3952	Gold	5MHz 103952
QS3952GL	Longer Life Gold®	5MHz
QS3954	Stress Relieving Alloy®	5MHz
QS3950	Silver	5MHz 103950

Fil-Tech	INTELLEMETRICS STYLE	
QI8010F	Gold	6MHz SN66NG
QI8012F	Longer Life Gold®	6MHz
QI8008F	Stress Relieving Alloy®	6MHz
QI8009F	Silver	6MHz SN66NS

Typical System



Monitor/Controller Options

SQM-160	Rate/thickness monitor	\$1,810
STM-2XM	Rate/thickness monitor	1,930
XTC/3	Deposition Controller	4,025
SQC-310	Deposition Controller	3,025
IC6	Deposition Controller	11,295
CYGNUS 2	Deposition Controller	11,450

Components Required for a Complete System

180-010	Remote analog oscillator	\$150
180-011	6" BNC cable M/F	35
180-012	10' BNC cable M/M	44
QI3000	Sensor head single sensor	400
QI7044	30" Microdot cable	95
QI2042	Feedthrough 1" bolt	350
TC531	Thermocouple gauge	68
G75K	Ion gauge, 3/4" kovar, iridium	175

INFICON Multi-Film Rate/Thickness Monitors and Controllers

INFICON
authorized distributor

Fil-Tech is an authorized distributor for INFICON® products. Choose your INFICON monitor or controller, or call 617-227-1133 with your application requests and for best pricing.



SQM-160 S-2-R Multi-Film Rate/Thickness Monitor

Has 2 sensor inputs standard and 4 additional sensor inputs optional with 2 recorder outputs to provide analog rate and thickness signals. Sensor inputs can be assigned to different materials, averaged for accurate deposition, or configured for a dual sensor. Rate displays of 0.1Å/sec or 0.01Å/sec and frequency or mass display can be selected. Four relay outputs allow control of the source of sensor shutters, signal time and thickness setpoints, and signal crystal failure.

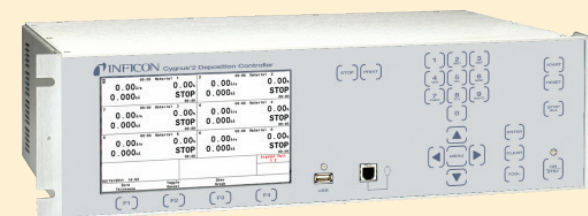
SQM160-S-2-R \$1,810



STM-2XM-GI Channel Rate/Thickness Monitor

Combines high accuracy with flexible programming and easy operation at an affordable price. Has 8 programmable digital inputs, 8 programmable digital outputs, and 4 analog outputs. It manages complicated co-deposition with an independent mode allowing it to operate as 2 completely separate monitors with temporal averaging for superior accuracy. Programmable features include shutter delay, time/power monitoring, and rate sampling.

STM-2XM-GI \$1,930



Cygnus® 2 Thin Film Deposition Controller

Provides exceptional value by combining the proven performance of INFICON thin film controllers with unique features, all designed for you to achieve the most from your OLED process. Cygnus 2 uses the ModeLock frequency measurement system to provide stable, high-resolution rate and thickness measurement with an industry leading rate resolution of .004...Å/s every 1/10 second.

CYG2-2101000 \$11,450



XTC/3 Thin Film Deposition Controller

INFICON's deposition controller for single and multiple-layer processes. The XTC/3 has patented ModeLock that provides mode hop prevention for consistent quality. Offers highly accurate control of deposition rate and thickness, the capacity for virtually any number of layers, easy installation, and extremely high reliability to ensure productivity.

XC3S-1000 \$4,025
XC3M-1000 \$6,925



SQC-310 Thin Film Deposition Controller

Offers advanced electronics, improved display and an affordable price. Choose SQC-310 for sequential deposition or the SCQ-310C for codeposition. SQC-310 comes standard RS-232 and USB, a "Quick Setup" menu, Windows® program, is accurate with ±0.03 Hz resolution at 10 reading/second and storage capacity for up to 100 processes, 1,000 layers and 50 films. Available in English or Chinese.

SQC310-2-R-1 \$3,025
SQC310C-4-R-1 \$5,490



IC6 Thin Film Deposition Controller

Provides exceptional value by combining the proven performance of INFICON thin film controllers with unique features, all designed to achieve the most from your deposition process. The IC6 uses the ModeLock frequency measurement system to provide stable, high-resolution rate and thickness measurement with an industry-leading rate resolution of 0.0043 Å/s every 1/10 second.

IC6-110100 — \$11,295

FEEDTHROUGHS

Single

Single 1" Bolt QI2042
\$350
For Single Sensors

Single 2 3/4" Flange QI2043
\$400
For Single Sensors

Dual

Dual 1" Bolt QI2000 \$750
For Dual Sensors

Dual 2 3/4" Flange QI2080
\$800
For Dual Sensors

All feedthrough lines 3/16" OD steel tubing.
Custom feedthroughs available.

Sensor Head Parts, Oscillators and Cables

PART	INFICON		Fil-Tech	
Ceramic Retainer	007-023	\$ 65	QI7023	\$ 60
Finger Spring	750-171-P1	28	QI0171	26
Crystal Holder	750-172-G1	80	QI0172	65
Crystal Holder	Fil-Tech Style		QI3010	75
Oscillator	783-500-013	170	180-010	150

CABLES	INFICON		Fil-Tech	
Coaxial 30"	007-044	\$120	QI7044	\$ 95
Special Length			QI7044X	115
Right Angle			QI7045	95

Cables have an extra layer of Teflon to protect the shielded cable from deposition material, insuring longer life.

CABLES	PHELPS		Fil-Tech	
Unsheathed 8"	Pe16016		QP16016	\$100
Unsheathed 36"	Pe16018		QP16018	100
Unsheathed 48"	Pe16020		QP16020	100

Cables have exposed metal sheath.

SENSOR HEADS

Single

In Line QI3000
\$400

In Line w/Shutter QI5000
\$1550

Right Angle QI4000
\$400

Right Angle w/Shutter QI4050
\$1550

Round Perpendicular QI3500*
\$450

Custom sensor heads, feedthroughs and assemblies available.

All sensor lines 1/8" OD stainless tubing except QI3600 with 3/16".

WELD FREE | NO WATER LEAKS | REMOVABLE FROM WATER LINES | SPECIAL ORDER SENSORS AVAILABLE

Dual with Shutter

In Line QI6000
\$1,850

Right Angle QI7000
\$1,850

Round Perpendicular QI3600
\$1,950

Positional Sensor Heads

QI1100 \$980
Includes Coaxial Cable

Bakeable Sensor Heads

Our Bakeable Sensor Heads are used for UHV and High Temp processes up to 300° C. The QI1200 is TIG welded to a rotatable conflat flange. A 1" baseplate bolt is available but the Viton O-ring will limit the temp to 205°C. The coaxial connection is sealed inside a rigid 3/16" OD stainless steel tube with cable included. Cooling tubes are 3/16" OD to maximize cooling. Sensor heads can be built to order with your choice of feedthrough type and length.

QI1200 \$995 Includes Coaxial Cable

Sensor Head With Internal Oscillator & Deep Water Pocket

QP4600

*Head not removable

- Features**
- Stainless steel construction
 - Internal oscillator for 5MHz and 6MHz
 - Removable from water lines for easy repair
 - Deep water pocket for superior cooling
 - Copper construction option for superior cooling

Sputter Head, SS	QP4500	\$525
Sputter Head Cap, SS	QP4501	65
Sputter Head, Copper	QP4600	575
Sputter Head Cap, Copper	QP4601	80

Specify crystal diameter for correct crystal holder style

12 Crystal Sensor Head

Holds 12 crystals and allows continuous monitoring without process interruption

- Features**
- Small footprint
 - Easy installation and reload
 - Precise, reliable, pneumatically driven stepper motor
 - Compatible with Fil-Tech and INFICON monitors

12QC Includes Coaxial Cable

Specify Length (L)

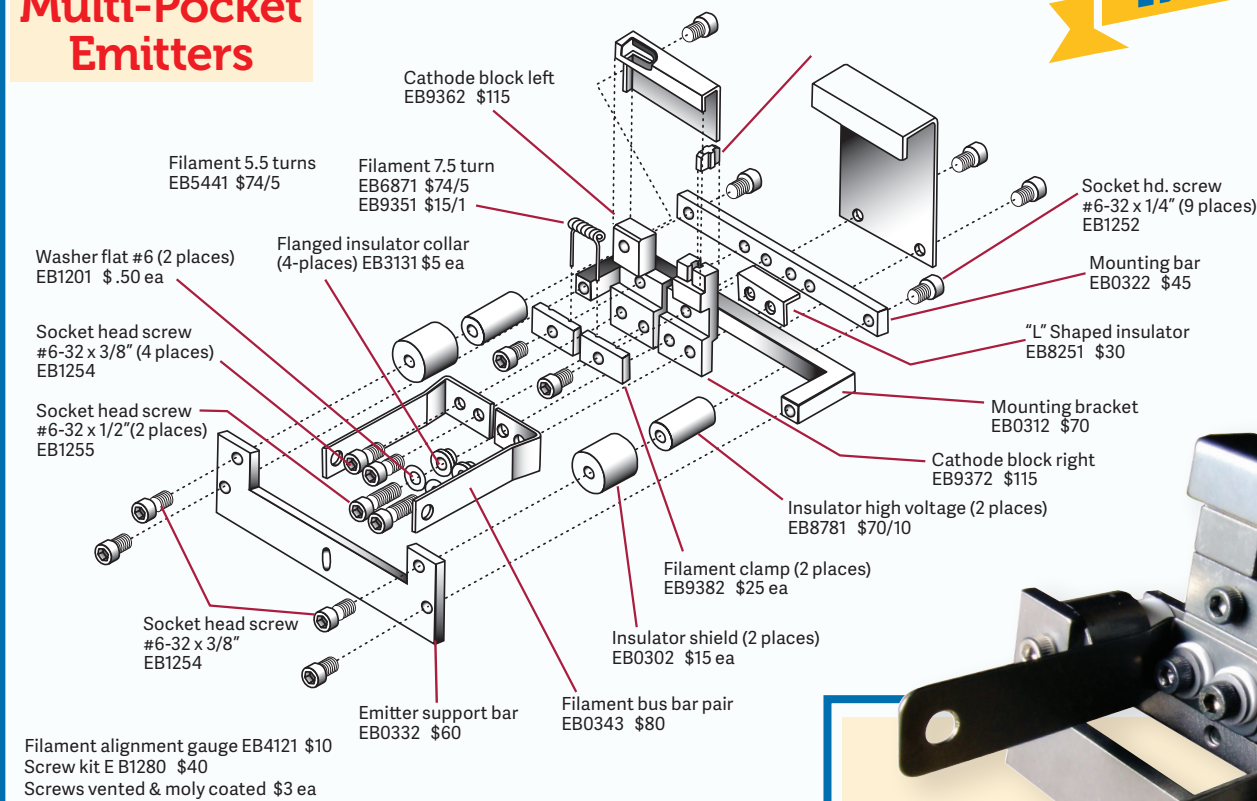
All cooling and electrical tubing have a TIG welded seal

ELECTRON BEAM GUN PARTS

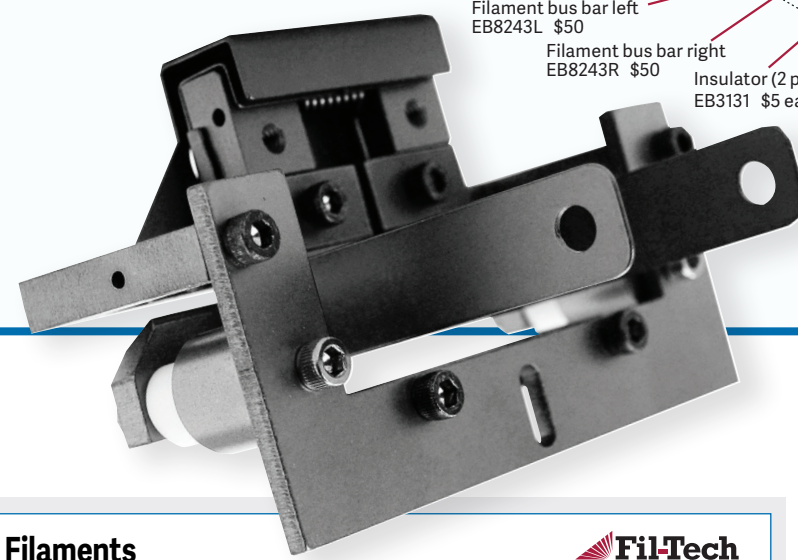
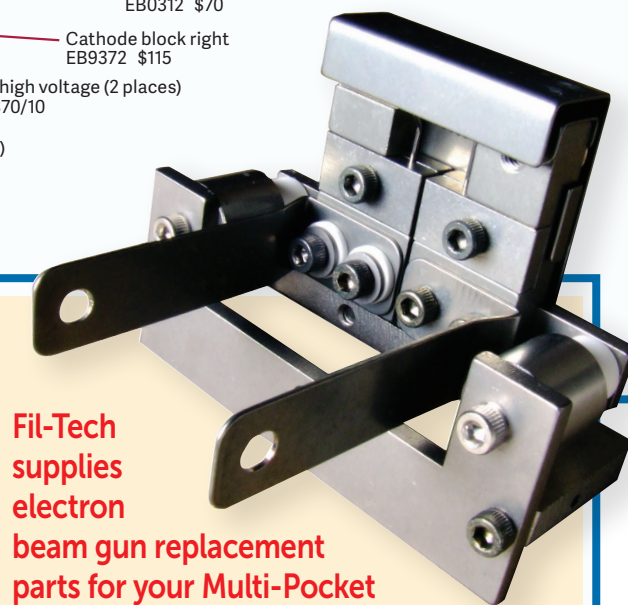
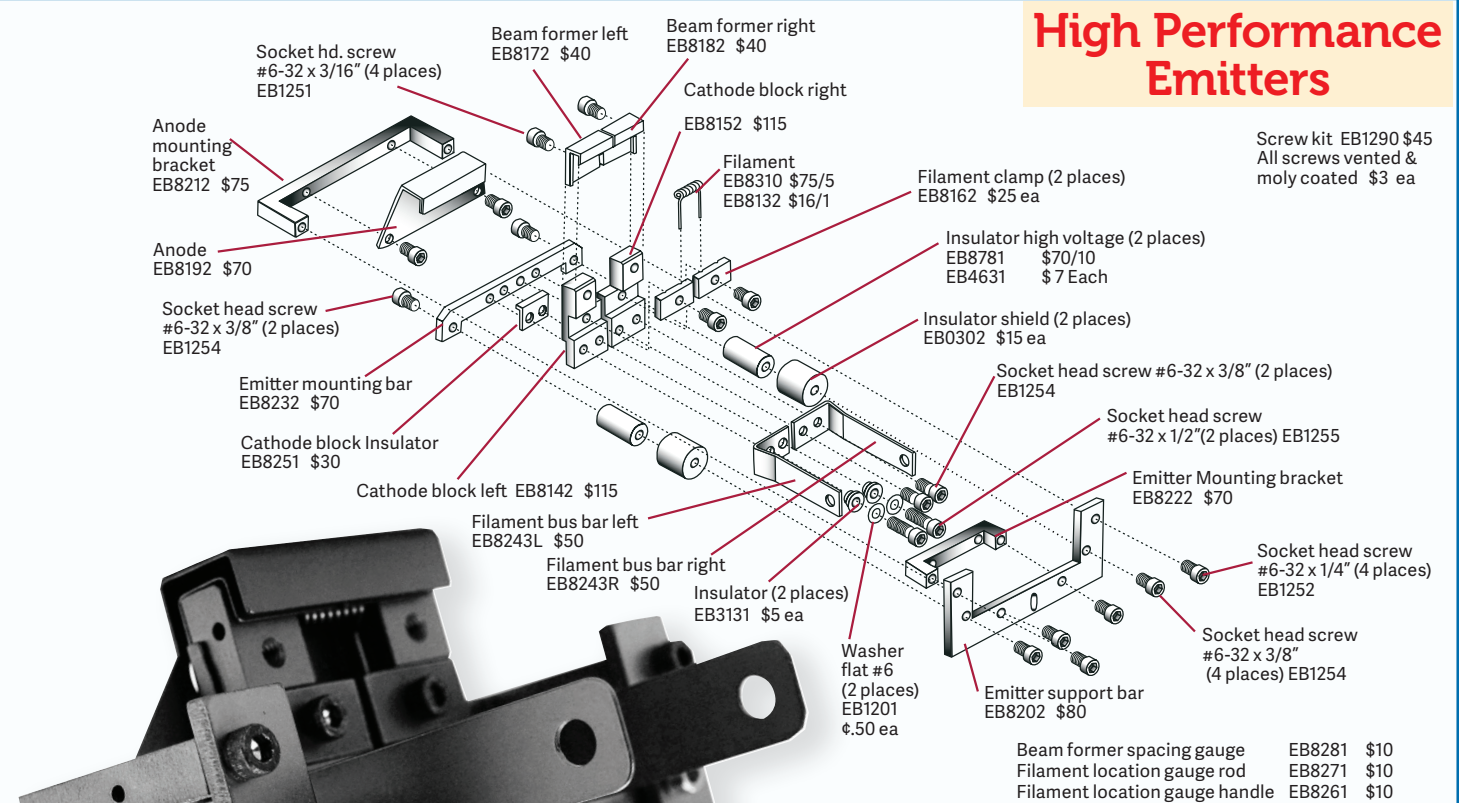
**ALL ITEMS
IN STOCK**

Temescal • Satisloh • Telemark | Filaments • Insulators • Emitters

Multi-Pocket Emitters



High Performance Emitters



Fil-Tech supplies electron beam gun replacement parts for your Multi-Pocket and High Performance emitters from Temescal, Telemark, Thermionics, Satisloh, MeiVac, Sloan, and Leybold. Our insulators, filaments, metal parts and electromagnetic coils are drop-in replacements for the listed OEM parts. We can also rebuild your emitters.

Multi-Pocket Emitter Parts

	TEMESCAL	TELEMARK	Fil-Tech	
Anode	0204-0292-0	273-0003-1	EB0292	\$70
Beam Former	0415-1822-0	273-0004-2	EB1822	35
Beam Former, Tantalum	0303-9392-0	N/A	EB9392	50
Cathode Block, Left	0303-9362-0	273-0031-1	EB9362	115
Cathode Block, Right	0303-9372-0	273-0032-1	EB9372	115
Emitter Support Bar	0204-0332-0	273-0018-1	EB0332	60
Filament Clamp	0303-9382-0	273-0033-3/273-0033-4	EB9382	25
Filament Bus Bar Set	0204-0343-0	273-0035-1/273-0036-1	EB0343	80
Insulator Shield	0204-0302-0	273-0011-1	EB0302	15
Mounting Bar	0204-0322-0	273-0017-1	EB0322	45
Mounting Bracket	0204-0312-0	273-0019-1	EB0312	70
Seal, Quad Ring	2108-0215-0	N/A	EB0215	2
Seal, RL Gasket	0020-4811-2	N/A	EB4811	6
Emitter Assembly	0204-0284-0	273-0150-1	EB0284	700

Emitter Assemblies

	TEMESCAL	TELEMARK	Fil-Tech	
Multi Pocket	0204-0284-0	273-0150-1	EB0284 Temescal EB0150M Telemark	\$700
Single Pocket	0304-1914-0	253-0150-1	EB1914	700
High Performance	0916-8294-0	N/A	EB8294	800
Emitter Rebuilding Service*	N/A	N/A	EBREBLD	350

*Includes glass beading and chemically cleaning all metal parts, replacing filament, screws (all vented), insulators, and reassembling. Metal parts not included.

Insulators

	TEMESCAL	TELEMARK	Fil-Tech	
Flanged/Collar	0303-3131-0	273-0006-1	EB3131	\$5
Locating/Cross	0303-6721-0	273-0005-1	EB6721	5
High Voltage	0602-8781-0	273-0010-1	EB8781	70/10
High Voltage	0418-4631-0		EB4631	7
Cathode Block "L" Shaped	0916-8251-0	273-0008-1	EB8251	30
Sloan Insulator	126-116		EB6116	22

Telemark and Temescal parts are interchangeable.

Filaments

			Fil-Tech	
TEMESCAL	SuperSource®	0317-6871-0	EB6871	\$74
		0303-9351-0	EB9351	15/1
		0515-5441-0	EB5441	74
TELEMARK	High Performance®	0916-8310-0	EB8310	75
		0916-8132-0	EB8132	16/1
		273-0001-1	EB0001	74
THERMIONICS	Multi Pocket	273-0002-1	EB0002	74
		A112153	EB6871	74
SATISLOH	SuperSource	A7500823P-122M	EB6871	74
		A7500823P-005M	EB6871-1	80
		A7500336J-003M	EB8483-5	290/20
SLOAN	S Type	126-710	EB7910	150
		10-094-226	EB4226	190/10
LEYBOLD	S Type	84830-005	EB8483-5	290/20
		812180313	EB0313	65
JEOL	Half moon			

All filaments 5 per box except otherwise indicated.

Telemark parts can be ordered using Temescal part numbers.

High-Performance Emitter Parts

	TEMESCAL	Fil-Tech	
Anode	0916-8192-0	EB8192	\$75
Anode Mounting Bracket	0916-8212-0	EB8212	75
Beam Former, left	0916-8172-0	EB8172	40
Beam Former, Right	0916-8182-0	EB8182	40
Beam Former Spacing Gauge	0916-8281-0	EB8281	10
Cathode Block Insulator	0916-8251-0	EB8251	30
Cathode Block, Left	0916-8142-0	EB8142	115
Cathode Block, Right	0916-8152-0	EB8152	115
Emitter Mounting Bar	0916-8232-0	EB8232	70
Emitter Mounting Bracket	0916-8222-0	EB8222	70
Emitter Support Bar	0916-8202-0	EB8202	80
Filament Bus Bar, Left	0916-8243-1	EB8243L	50
Filament Bus Bar, Right	0916-8243-2	EB8243R	50
Filament Clamp	0916-8162-0	EB8162	25
Emitter Assembly	0916-8294-0	EB8294	800

Electromagnetic Coil

TEMESCAL

0312-6923-0 \$1,690

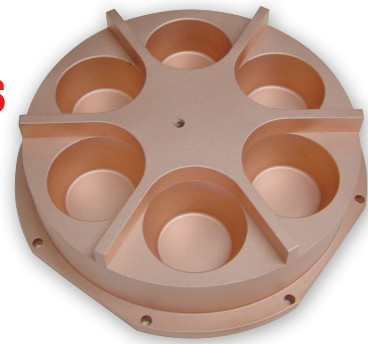
Fil-Tech

EB6923 \$1,450



Crucibles

All Crucibles and Covers are OFHC for Temescal and Telemark electron beam guns.



SIZE	TEMESCAL	Fil-Tech
4x15cc Pockets	0715-8444-0 \$1,540	EB8444 \$1,550
6x15cc Pockets	0715-8504-0 1,965	EB8504 1,800
4x25cc Pockets	0715-8454-0 1,540	EB8454 1,500

SIZE	TELEMARK	Fil-Tech
6x15cc Pockets	271-0255-3 \$2,000	EB0255-3 \$1,800
4x25cc Pockets	271-0220-3 1,750	EB0220-3 1,550
6x25cc Pockets	271-0257-3 2,000	EB0257-3 1,800

All high water flow

Crucible Covers

SIZE	TEMESCAL	Fil-Tech
4 Pockets	0715-8143-0 \$640	EB8143 \$600
6 Pockets	0715-8153-0 745	EB8153 650

SIZE	TELEMARK	Fil-Tech
4 Pockets	271-0073-1	EB0073 \$475
6 Pockets	271-0074-1	EB0074 475

Silicon Dioxide

High purity SiO₂ specifically designed for electron beam evaporation.

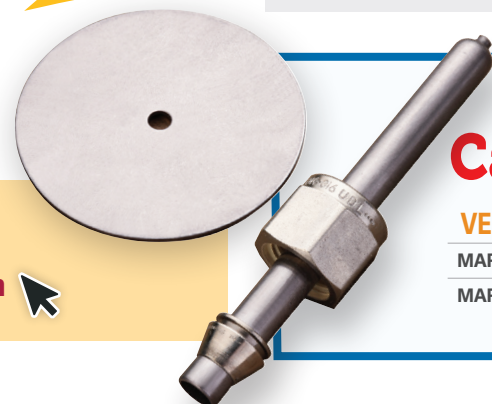
SPECIFICATIONS

Purity	99.99%	Melting point	1713°C
Form	Granular	Refractive index	n/d 1.46 @500 nm

ORDERING INFORMATION

EM0024-5	2-4 Granular size (mm)	\$100 (500g)
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**ALL ITEMS
IN STOCK**



Crucible Liners

Fil-Tech supplies 4cc, 7cc, 15cc, 25cc, 30cc and 40cc crucible liners for Temescal and Telemark electron beam gun crucibles. Available in Graphite, Tungsten, Molybdenum, Aluminum Oxide, Boron Nitride, Copper, Intermetallic, Tantalum, and Vitreous Carbon. We can also fabricate custom liners for your e-beam guns.



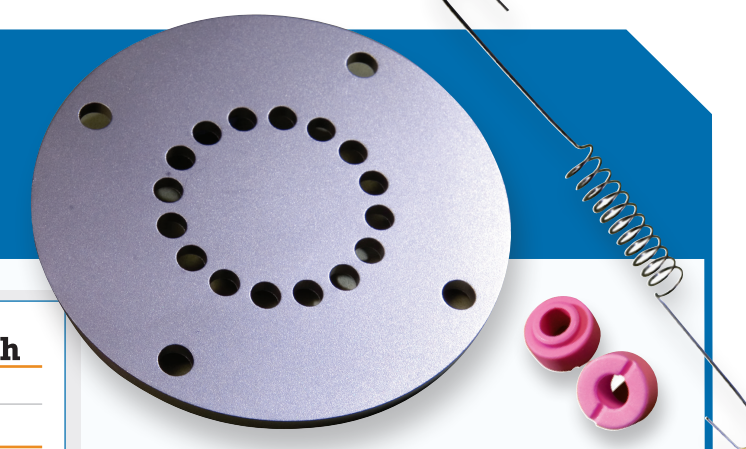
	SIZE	REMARKS	TEMESCAL	TELEMARK	Fil-Tech
GRAPHITE	7CC		0627-6172-1	271-7007-1	EC0007-1 \$40
	15CC		0627-6172-3	271-7015-1	EC0015-1 50
	25CC	4 Pocket	0627-6172-5	271-7025-1	EC4025-1 60
	25CC	6 Pocket	N/A	271-7025-2	EC6025-1 65
	30CC	W/Web	N/A	271-7030-1	ECW030-1 75
	30CC	W/O Web	N/A	271-7030-2	EC0030-1 75
TUNGSTEN	40CC		0627-6172-7	271-7040-1	EC0040-1 80
	7CC		0627-6152-1	271-7008-9	EC0007-2 \$150
	15CC		0627-6152-3	271-7016-9	EC0015-2 155
	25CC	4 Pocket	0627-6152-5	271-7026-9	EC4025-2 225
	25CC	6 Pocket	0627-6152-6	271-7027-9	EC6025-2 250
MOLYBDENUM	30CC	W/Web	N/A	N/A	ECW030-2 165
	30CC	W/O Web	N/A	N/A	EC0030-2 275
	40CC		0627-6152-7	271-7041-9	EC0040-2 375
	7CC		0627-6162-1	271-7007-3	EC0007-3 \$110
	15CC		0627-6162-3	271-7015-3	EC0015-3 100
	25CC	4 Pocket	0627-6162-5	271-7025-3	EC4025-3 145
	25CC	6 Pocket	N/A	271-7025-4	EC6025-3 180
	30CC	W/Web	N/A	271-7030-3	ECW030-3 185
	30CC	W/O Web	N/A	271-7030-4	EC0030-3 180
	40CC		0627-6162-7	271-7040-3	EC0040-3 170

Cathode Tip & Keeper

	VEECO	Fil-Tech
MARK II Cathode Tip	B17968/SP \$380	IS17968 \$315
MARK II Keeper	A17973 \$157	IS17973 \$70

ION SOURCE PARTS

- Veeco Mark I & Mark II • Ion Tech
- Satisloh • Kaufman & Robinson



Filaments		VEECO	SATISLOH	Fil-Tech
MARK I	A30274	\$7.28	A7500800Q-131M	IS30274 \$6
MARK II	A16962	6	A7500800Q-101M	IS16962 5

VEECO / ION TECH		Fil-Tech
3&5cm Cathode	0503-107 \$50	IS3107 \$12
3cm Neutralizer	0503-063	IS3063 12
5cm Neutralizer	0505-001-003 64	IS1003 6

KAUFMAN & ROBINSON		Fil-Tech
EH1000	HFL-A01	ISKRLA01 3.50
EH200 & EH400	HFM-A01	ISKRMA01 3

Insulators		VEECO	SATISLOH	Fil-Tech
MARK I	1451001	\$7.82	A7500800Q-136M	IS1001 \$6
MARK I & II	10-32M		A7500800Q-167M	IS1032 6.50
	10-32F		A7500800Q-134M	IS1032F 10
	6-32F			IS0632F 12
	6-32M			IS0632M 8
	6-MS	8.50		IS06MS 8
	1/4-20M	15.00		IS2520M 12
	1/4-20F	15.00		IS2520F 12
	VEECO/ION TECH 3 & 5CM		Fil-Tech	
	0500-035 M \$7.35		IS0035 \$6	
	0500-036 F 9.80		IS0036 7	
	0500-037 M 8.50		IS0037 7	

KAUFMAN & ROBINSON		Fil-Tech	
INSULATORS	10-32M	Insulator	IS1032 \$6.50
	10-32M-2	Insulator	IS0035 8
	6-32M	Insulator	IS0632M 8
	1/3-20m-1	Insulator	IS2520M 12
REFLECTOR	ISKR1012G	Graphite Reflector	EH10-12-CG 75

Gas Distributors

	VEECO	SATISLOH	Fil-Tech
MARK I	B18005-1 Graphite \$356	A7500800Q-134M	IS18005G \$100
	B18005-3 Stainless 75	A7500800Q-135M	IS18005S 75
	B18005-5 Titanium 455		IS18005T 100
MARK I MODIFIED HOLES	B18005-1A Graphite		IS18005G-1 100
	B18005-2A Stainless		IS18005S-1 90
	B18005T-1 Titanium		IS18005T-1 100
MARK II	B16931-1 Graphite 554	A7500800Q-174M	IS16931G 240
	B16931-2 Stainless 109	A7500800Q-154M	IS16931S 65
	B16931-5 Titanium 209	A7500800Q-202M	IS16931T 100

Replacement parts for Veeco Mark I and II, Ion Tech, Satisloh and Kaufman & Robinson ion source equipment. Filaments, insulators, anodes, gas distributors, cathode tips, keepers and other parts are drop-in replacements for the competitive parts listed and offered from stock at competitive pricing.

Anodes

	VEECO	SATISLOH	Fil-Tech
MARK I	B18003-1 Graphite \$74	A7500800Q-132M	IS18003G \$65
	B18003-2 Stainless 55	A7500800Q-133M	IS18003S 55
MARK II	B16933-1 Graphite 196	A7500800Q-175M	IS16933G 160
	B16933-2 Stainless 144	A7500800Q-166M	IS16933S 85

Mark II Parts

Mark II	Description	Fil-Tech
B16923	Pole Piece, Outer	IS16923 \$202
B16927	Alnico-5 Magnet	IS16927 67
B16928	Support Plate	IS16928 361
B16929	Baffle	IS16929 26
B16930	Spacer	IS16930 28/3
B16932	Support, Back Anode	IS16932 185
B16934	Support, Front Anode	IS16934 198
B16935	Tie Rod, Short	IS16935 38/2
B16936	Tie Rod, Long	IS16936 38/2
B16937	Cathode Connection	IS16937 105/2
B16938	Anode Connection	IS16938 19
B16939	Support, Cathode	IS16939 122/2
B16940	Knob, Hold Down	IS16940 50/2
B16944	Retainer, Cable	IS16944 106/3
B16946	Cover, Empty Socket	IS16946 70
B16947	Work Station	IS16947 100
B29958	Pin, Alignment	IS29958 42/2
B29959	Screw, Hold Down	IS29959 72/2
B29960	Socket	IS29960 298
B29961	Plug	IS29961 395

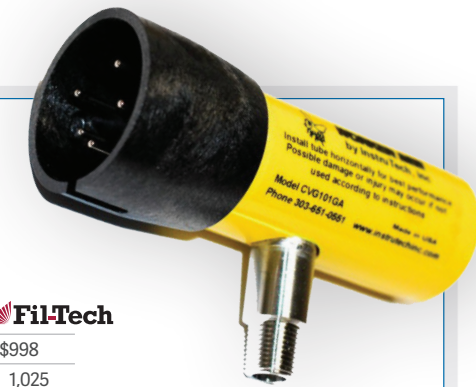
Call 800-743-1743 For a complete listing of Mark I, I+, II and II+ parts.

Thermocouple Gauge Tubes

For semiconductor and vacuum applications. All of our thermocouples are drop-in replacements for the OEM gauges offered at a savings.



COMPETITION	Fil-Tech	COMPETITION	Fil-Tech
Agilent F0472301	TC531 \$68	Hastings DV-6M	TC6M \$68
Agilent F0472310	TC531VCR 135	Hastings DV-6-VCR	TC6MVCR 135
AMAT F2518001	TC004V 52	Hastings DV-6-KF16	TC6MKF16 135
AMAT 3310-01012	TC531 68	Hastings DV-6-KF25	TC6MKF25 155
AMAT 3310-01074	TC531VCR 135	Hastings DV-4D	TC4D 85
AMAT 3310-00236	TC6M 68	MKS 270006	TC6M 70
AMAT 3310-01071	TC6MVCR 135	MKS 8112105	TC6MVCR 135
Axcelis 3300008	TC004V 52	MRC 405052	TC520 105
Axcelis 33001330	TC004KF16 135	Novellus 60-00005-00	TC6M 70
Axcelis 33000002	TC002 110	Novellus 60-00180-00	TC6MKF25 155
Axcelis 33001009	TC3309 70	Temescal 6920-4263-0	TC6M 70
Axcelis 7435-0001-0001	TC7435-1 85	Thermionics 6343-004M	TC004V 52
Axcelis 7435-0003-0001	TC7435-3 90		
CVC GTC-004	TC004 52		
CVC GTC-036	TC036 60		



Fil-Tech
NEW!

InstruTech® Convection Gauges

We offer the complete InstruTech line of low cost, drop-in plug compatible replacements for Convectron® gauges. Call for pricing.

FITTING	HORNET400 Fil-Tech	HORNET 401 Fil-Tech	HORNET 402 Fil-Tech
NW16KF	IGM400YBX \$736	IGM401YBD \$896	IGM402YBD \$998
NW25KF	IGM400YCX 747	IGM401YCD 917	IGM402YCD 1,025
NW40KF	IGM400YDX 757	IGM401YDD 925	IGM402YDD 1,035
2 3/4CF	IGM400YFX 767	IGM401YFD 938	IGM402YFD 1,035
1/2" Cajon 8VCR	IGM400YHX 757	IGM401YHD 930	IGM402YHD 1,035

FITTING	WORKER BEE	MKS Fil-Tech	SUPER BEE	MKS Fil-Tech	STINGER	MKS Fil-Tech
1/8" NPT	CVG101GA	275071* \$120	CVM201GAA	275850 \$453	CVM211GAA	275800 \$315
NW16KF	CVG101GB	275203** 140	CVM201GBA	275865 474	CVM211GBA	275806 320
NW25KF	CVG101GC	275196 155	CVM201GCA	275867 490	CVM211GCA	275807 340
NW40KF	CVG101GD	275316 165	CVM201GDA	275858 503	CVM211GDA	275808 350
1/4" VCR	CVG101GG	275185*** 155	CVM201GGA	275851 490	CVM211GGA	275801 340

*275071: Novellus 27-229979
 **275203: Axcelis 3300317
 ***275185: AMAT 275262
 Novellus/Lam 77-1090453-001
 Novellus 60-00055-00

Thermocouple Controllers

DIGITAL PANEL MOUNT Fil-Tech

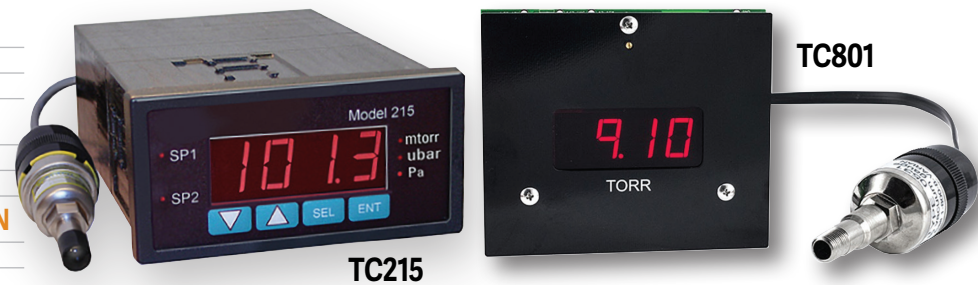
TC801	TC531 Tube	\$570
TC215H	TC6M Tube	675

DIGITAL PANEL MOUNT SINGLE STATION

TC101D	TC531 Tube	375
TC201D	TC6M Tube	375

DIGITAL CABINET MOUNT SINGLE STATION

TC101DC	TC531 Tube	440
TC101DC	TC6M Tube	440



Fil-Tech
NEW!

MG15 Multi Gauge Ion Controller

Supports 4 Active & up to 3 Passive Gauge

Our MG15 ion gauge controller can support up to 4 active gauges and 3 passive gauges, extending the measurement range to 2 x 10⁻¹² mbar. The MG15 supports all Bayard Alpert style gauges, Baratron, UHV nude gauges and others. It can be remotely controlled by one of its available interfaces and has 10 individually programmable set points with threshold and hysteresis functions. The MG15 can support four active gauges and up to three passive gauges. Price varies with 1, 2 or 3 passive gauges.

POR



Ion Implantation

AXCELIS	DESCRIPTION	Fil-Tech	PRICE
3300002	3/4" Glass, Twin Tungsten	G75PT	\$140
7631-0001-0002	3/4" Kovar, Twin Tungsten	G75KT	150
3300008	Thermocouple Gauge	TC004V	52
AMAT			
5300019	1" Glass, Twin Tungsten	G100PT	\$140
K7360301	1" Glass, Twin Tungsten	G100PT	140
4053050	1" Kovar, Twin Tungsten, 2 3/4" Flange	G100KTF	185
3310-90003	1" Glass, Twin Tungsten	G100PT	140
3310-01014	1" Kovar, Iridium, Pt Coated	G100KC	200
F2518001	Thermocouple Gauge	TC004V	52
3310-00236	Thermocouple Gauge	TC6M	68
3310-01071	Thermocouple Gauge VCR	TC6MVCR	135
3310-01012	Thermocouple Gauge	TC531	68
3310-01074	Thermocouple Gauge VCR	TC531VCR	135
LAM/NOVELLUS			
27-229-700-00	1" Glass, Iridium, PT Coated, Broad Range	G8136P/1	200
60-00005-00	Thermocouple Gauge	TC6M	68
60-00180-00	Thermocouple Gauge VCR	TC6MVCR	135
SEN			
33S0298	3/4" Glass, Twin Tungsten	G75PT-02S	145

Vacuum Applications

AGILENT	DESCRIPTION	PRICE	Fil-Tech
K2466301	1" Glass, Iridium, Pt Coated	\$262	G100PC \$200
K2466302	1" Kovar, Iridium, Pt Coated	301	G100KC 180
K2466303	1" Kovar, Iridium, Pt Coated, 2 3/4" Flange	337	G100KCF 260
K2466304	3/4" Glass, Iridium, Pt Coated	276	G75PC 200
K2466305	3/4" Kovar, Iridium, Pt Coated	286	G75KC 200
K2471301	1" Glass, Iridium	199	G100P 170
K2471302	1" Kovar, Iridium	223	G100K 180
K2471303	1" Kovar, Iridium, 2 3/4" Flange	281	G100KF 225
K2471304	3/4" Glass, Iridium	189	G75P 170
K2471305	3/4" Kovar, Iridium	212	G75K 175
K7360301	1" Glass, Twin Tungsten	161	G100PT 140
K7360302	1" Kovar, Twin Tungsten	190	G100KT 150
K7360303	3/4" Glass, Twin Tungsten	161	G75PT 140
K7360304	3/4" Kovar, Twin Tungsten	190	G75KT 150
K7360307	1" Kovar, Twin Tungsten, 2 3/4" Flange	238	G100KTF 185
K2500301	1" Glass, Iridium, Pt Coated, Broad Range	275	G8136P/1 200
K2500302	1" Kovar, Iridium, Pt Coated, Broad Range	304	G8136K/1 210
K2500303	1" Kovar, Iridium, Pt Coated, 2 3/4" Flange, BR	347	G8136F 260
MKS			
274002	3/4" Glass, Iridium	\$155	G75P 170
274003	3/4" Kovar, Iridium	170	G75K 175
274005	1" Glass, Iridium	N/A	G100P 170
274006	1" Kovar, Iridium	260	G100K 180
274007	3/4" Kovar, Iridium, 2 3/4" Flange	265	G75KF 225
274008	1" Kovar, Iridium, 2 3/4" Flange	265	G100KF 225
274012	3/4" Glass, Twin Tungsten	140	G75PT 140
274013	3/4" Kovar, Twin Tungsten	160	G75KT 150
274015	1" Glass, Twin Tungsten	155	G100PT 140
274016	1" Kovar, Twin Tungsten	170	G100KT 150
274032	1" Kovar, Iridium, KF25 Flange	300	G100KF25 225

ANELVA			
33-437-0025/UDG-1S	15mm Glass, Twin Tungsten		G59PT 200
BRG-1B	15mm Glass, Iridium		G59P 200

MRC			
4050300	.709" Glass, Twin Tungsten		G71PT 155

Ionization & Thermocouple Gauge Tubes



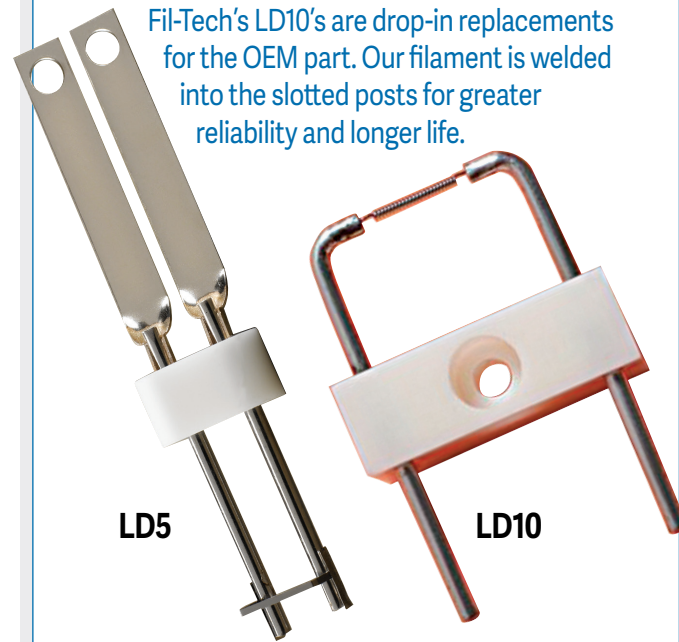
All Fil-Tech ionization gauge tubes are identical or functionally equivalent to the competitive tubes listed. They are all manufactured by two companies and privately labeled. See comparative prices for savings.



order online:
www.filtech.com

Leak Detector Filaments

Fil-Tech's LD10's are drop-in replacements for the OEM part. Our filament is welded into the slotted posts for greater reliability and longer life.



LD5

LD10

FILAMENT	ALCATEL	Fil-Tech	
Filament	053146	LD10	\$130
Collector Single	083485	LD11	32
Collector Double	101127	LD12	35

FILAMENT	VEECO	Fil-Tech	
Tungsten	0103-141-01	LD5	\$190/5
Iridium	N/A	LD5-1	450/5
Iridium Rebuild	N/A	LD5IRR	115

FILAMENT	AGILENT	Repair Exchange	
Tungsten	82850301	LD7RE	\$50
Iridium	82850302	LD8RE	105

CALIBRATED HELIUM LEAKS

NEW Fil-Tech RECALIBRATION

CL7	10-7ccHe/sec	\$500	Certification \$350
CL8	10-8ccHe/sec	525	NIST Traceable Certification

Fil-Tech Fluid vs TorrLube

Fil-Tech Fluid dramatically increases bearing life in vacuum and semiconductor processes by reducing friction. It has exceptional lubricating properties for sliding and rotating applications to 10⁻⁸ torr. Fil-Tech Fluid functions in a wide temperature range (-20°C to 260°C) and is chemically inert in the presence of most semiconductor gases such as fluorine at 200°C and trifluoride at 50°C.



ITEM #	SIZE	TORRLUBE®	FLUID™
FTF001	1 cc Syringe	\$112	\$100
FTF003	3 cc Syringe	N/A	275
FTF100	2-50 cc Bottles	1,280	1,100

Nude Gauges & Filaments

Visit www.filtech.com for a complete listing of our nude gauges and replacement filaments.

AGILENT • AMAT • MKS

Bayard Alpert Gauges/Pin Guards

Flange 2 3/4" • Header Ceramic to Metal Seal • Degas E-Beam Only

MKS		AMAT	DESCRIPTION	Fil-Tech	
274028	\$525		Iridium Single	GB20IR	\$390
274043	595	3310-01081	Iridium Single With Pin Guard	GB43IR	560

UHV Gauges/Pin Guards

Flange 2 3/4" • Header Ceramic to Metal Seal • Degas E-Beam Only

MKS		DESCRIPTION	Fil-Tech	
274022	\$525	Tungsten Dual	GU21T	\$375
274023	565	Iridium Dual	GU21IR	425
274050	535	Tungsten Dual, NW40KF	GU50T	400
274041	595	Tungsten Dual With Pin Guard	GU41T	500
274042	625	Iridium Dual With Pin Guard	GU42IR	525
274057	610	Tungsten Dual, NW40KF w/Pin Guard	GU57T	490

AGILENT

9715007	606	Iridium Dual	GU24IR	595
9715008	664	Tungsten Dual	GU24T	565

Replacement Filaments

AGILENT		DESCRIPTION	Fil-Tech	
9710018	\$104	Tungsten Dual	GF18	\$45
9710028	203	Iridium Dual	GF28	100

MKS

274024	180	Tungsten Dual	GF24	70
274025	210	Tungsten Dual	GF25	100
274029	180	Iridium Single	GF29	100

One filament per box



Diffusion Pump Silicones

All Fil-Tech's fluids are the functional equivalent to Dow Corning's DC702, DC704, and DC705, respectively. They can be mixed and/or reprocessed together in any portion with their respective counterpart. Fil-Tech sells silicones!

FIL-TECH FT702, FT704 AND FT705 SILICONES REPLACE THE NO-LONGER-AVAILABLE DOW CORNING DC702, DC704 AND DC705 SILICONES

FT702 Phenylmethylsiloxane

is an economical general purpose silicone fluid for pumping large gas loads with thermal stability and oxidation resistance. Vacuum 10⁻⁵ to 10⁻⁷ torr.

FT704 Tetramethyltetraphenyltrisiloxane

is a single component fluid extensively used for applicators requiring rapid pump down of large gas loads. For performance and economics, your best choice. Vacuum 10⁻⁵ to 10⁻⁸ torr.

FT705 Pentaphenyltrimethyltrisiloxane

is a single component fluid for ultra high and ultra clean vacuums. For lowest ultimate pressure, your best choice. Higher resistance to crystallization. Vacuum 10⁻⁵ to 10⁻¹⁰ torr.

Fil-Tech

	FT702	REPROCESSING	
1 Gallon	\$440	\$180	
5 Gallon	2,000		
	FT704		
500 cc	\$90		
1 Gallon	550	180	
5 Gallon	2,500		
	FT705		
500 cc	\$140		
1 Gallon	800	185	
5 Gallon	3,800		



Call Fil-Tech at 800-743-1743 for a free DOT approved pail to collect your used fluid for remanufacture.

TRADEMARKS

Fil-Tech®

OTHER TRADEMARK OWNERS

- Agilent® Agilent Technologies, Inc.
- Alcatel® Alcatel Vacuum Technology
- AMAT® Applied Materials, Inc.
- Axcelis® Axcelis Technologies, Inc.
- Chemours® The Chemours Company
- Convectron® MKS Instruments
- Dow Corning® Dow Corning Corp.
- CTI/Brooks® Brooks Automation, Inc.
- Hastings® Teledyne Technologies, Inc.
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- Longer Life Gold®
- Quality Crystals®
- Stress Relieving Alloy®
- InstruTech® InstruTech
- Intellemetrics® Intellevation Ltd.
- Ion Tech® Veeco Instruments, Inc.
- Kaufman & Robinson® Kaufman & Robinson
- Krytox® The Chemours Company FC, LLC
- Lam® Lam Research Corporation
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- Maxtek® INFICON
- MKS® MKS Instruments
- Novellus® Novellus Systems, Inc.
- Phelps® Phelps Electronic, Inc.
- Q-Sense® Biolin Scientific Holding, AB
- Santovac® Arch Technology Holding, LLC
- Satisloh® Satisloh GmbH
- Sloan® Veeco Instruments, Inc.
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- Telemark® Telemark
- Temescal® Ferrotec Corp.
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- TorrLube® The Torr Lube Company, LLC
- ULVAC® ULVAC Technologies, Inc.
- Umicore® Umicore
- Unaxis® OC Oerlikon Corp., AG
- Veeco® Veeco Instruments, Inc.
- Windows® Microsoft, Inc.



SANTOVAC 5

Polyphenyl Ether Diffusion Pump Fluid

SANTOVAC® 5 will provide vacuums in the 10⁻¹⁰ torr range with exceptionally low vapor pressure and backstreaming. It is excellent for applications that must be free of silicones or those requiring ultra high, clean vacuums.

SANT5-006	65 cc	\$220
SANT5-01	100 cc	300
SANT5-05	500 cc	1,125
SANT5-1	1 Gallon	6,900



order online: www.filtech.com

MECHANICAL PUMP FLUIDS

FT19

Molecularly distilled hydrocarbon fluid for non-corrosive applications. FT19 works well for all mechanical pumps.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	1 x 10-5 torr	1 Gallon	\$40
Viscosity @ 40°C	54 cst (251 SUS)	5 Gallon	110
Viscosity @100°C	8 cst (52.7 SUS)	55 Gallon	980

FT20

Doubly distilled hydrocarbon fluid for corrosive or reactive applications. Ideal for direct drive and belt driven mechanical pumps and also suitable for diffusion pump applications.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	1 x 10-6 torr	1 Gallon	\$65
Viscosity @ 40°C	58 cst (269 SUS)	5 Gallon	250
Viscosity @100°C	8.5 cst (54.1 SUS)	55 Gallon	1,925

FT70

High grade oil with temperature resistance and wear protection with extreme load-carrying capability. FT70 is safe for yellow metals in single stage pumps that run hot.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	1 x 10-4 torr	1 Gallon	\$50
Viscosity @ 40°C	75 cst (350 SUS)	5 Gallon	175
Viscosity @100°C	9.4 cst (58 SUS)	55 Gallon	1,240

FT77

Molecularly distilled hydrocarbon fluid for rotary piston pump in non-corrosive applications. It has the high viscosity required for the proper lubrication of piston pumps.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	1 x 10-4 torr	1 Gallon	\$40
Viscosity @ 40°C	90 cst (418 SUS)	5 Gallon	140
Viscosity @100°C	10 cst (58.8 SUS)	55 Gallon	1,100

FT87

Molecularly distilled hydrocarbon for large rotary piston pumps and roots blowers in non-corrosive applications requiring higher viscosity fluids.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	4 x 10-4 torr	1 Gallon	\$45
Viscosity @ 40°C	175 cst (800 SUS)	5 Gallon	160
Viscosity @100°C	20 cst (97 SUS)	55 Gallon	1,050



Fil-Tech stocks hydrocarbon oils for mechanical vacuum pumps in 1, 5 and 55 gallon sizes. Our oils are drop-in replacements for the industry standard fluids for roots blowers, rotary piston, and mechanical vacuum pumps used in corrosive or non-corrosive applications.

Call if you have questions regarding a cross-reference oil for your application.

FT97

Molecularly distilled hydrocarbon for large rotary piston pumps and roots blowers in non-corrosive applications requiring highest viscosity fluids.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	4 x 10-4 torr	1 Gallon	\$50
Viscosity @ 40°C	205 cst (950 SUS)	5 Gallon	175
Viscosity @100°C	18 cst (85 SUS)	55 Gallon	1,200

FTTW

TECHNICAL WHITE

Molecularly distilled hydrocarbon fluid containing no additives. Specifically recommended for mechanical pumps exposed to reactive or corrosive gases. FTTW is the longest lasting hydrocarbon fluid.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	<1 x 10-6 torr	1 Gallon	\$65
Viscosity @ 40°C	56 cst (260 SUS)	5 Gallon	250
Viscosity @100°C	9 cst (55.4 SUS)	55 Gallon	1,980

KRYTOX VACUUM PUMP FLUIDS

Krytox® Fluid

Chemours Krytox fluids are totally perfluorinated polyether fluids (PFPE) that are suitable for the harsh environments associated with semiconductor processes. The fluids are chemically inert, thermally stable, oxygen resistant and nonflammable. Available with controlled low vapor pressures and viscosities. Applications include plasma etching, LPCVP and 100% oxygen service.

Remanufacturing Service

Fil-Tech's remanufacturing service restores your contaminated KRYTOX or other PFPE fluids to their original properties at high recovery yields. The cost is a fraction of the price of new fluid. Call for pricing.



Authorized Distributor of Krytox™, a Brand of The Chemours Company

1506	\$345/kg
1514	345/kg
1525	345/kg
1514XP	370/kg
1525XP	370/kg
XP Rust preventative fluid	
PFPE SOLVENT	
KXSOLV-1	\$550/gallon

Contact us for quantity discounts.

Call Fil-Tech for a free DOT approved pail to collect your used fluid for remanufacture. 800-743-1743

KRYTOX VACUUM GREASES

Chemours has a series of Krytox (PFPE) vacuum greases suitable for various applications. Your viscosity, temperature and vapor pressure requirements will determine your choice of grease. All Krytox greases are inert and suitable for applications requiring high temperature stability and low vapor pressure. They show excellent resistance to the aggressive environments inherent in the semiconductor industry. Krytox greases are oxygen compatible and hydrocarbon free.

SPECIFICATIONS	2 oz	8 oz	Kg	TEMPERATURE RANGE	VISCOSITY AT 40°C	VAPOR PRESSURE AT 40°C	
Electronic Grade EG Greases	EG2000	\$115	\$455	\$2,070	-34°/288°C	240 cSt	2 x 10-8 torr
	EG3000	115	455	2,070	-29°/316°C	440 cSt	6 x 10-9 torr
Aerospace 240 Greases (milspec)	240AB	230	800	2,885	-40°/232°C	78 cSt	5 x 10-6 torr
	240AC	230	800	2,885	-34°/288°C	270 cSt	8 x 10-8 torr
	240AD	230	800	2,885	-29°/316°C	500 cSt	6 x 10-9 torr
Low Vapor Pressure Grease	LVP	115	420	1,690	15°/300°C	740 cSt	1 x 10-13 torr
General Purpose Greases	GPL202	52	165	570	-63°/132°C	15 cSt	Standard Grade
	GPL203	50	160	550	-60°/154°C	30 cSt	Standard Grade
	GPL205	50	160	550	-36°/204°C	160 cSt	Standard Grade
	GPL206	50	160	550	-36°/260°C	243 cSt	Standard Grade
	GPL207	50	160	550	-30°/288°C	450 cSt	Standard Grade
	GPL224	50	160	550	-51°/179°C	60 cSt	Anti Corrosion
	GPL226	50	160	550	-36°/260°C	160 cSt	Anti Corrosion
GPL227	50	160	550	-30°/288°C	440 cSt	Anti Corrosion	

KRYTOX GENERAL PURPOSE OILS

Krytox GPL oils are clear, colorless, fluorinated synthetic oils that are non reactive, nonflammable, safe in chemical and oxygen service, and long-lasting.

	Kg	TEMPERATURE RANGE	VISCOSITY AT 40°C
GPL101	\$582	-70°/104°C	7.8 cSt
GPL102	582	-63°/132°C	15 cSt
GPL103	560	-60°/154°C	30 cSt
GPL104	560	-51°/179°C	60 cSt
GPL105	560	-36°/204°C	160 cSt
GPL106	560	-36°/260°C	243 cSt
GPL107	560	-30°/288°C	450 cSt



Fil-Tech

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