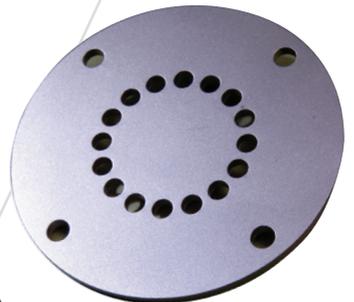




Fil-Tech

Quality & Savings From Stock

2025



800-743-1743 • 617-227-1133

paula@filtech.com

www.filtech.com Online Ordering



Online Shopping
Made Easy!

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
Q18010	Gold	6MHz 008-010-G10
Q18012	Longer Life Gold	6MHz
Q18008	Stress Relieving Alloy	6MHz 750-769-G1
Q18014	Advanced Adhesion Alloy	6MHz
Q18009	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

NEW! 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 \$55 each
QM1003	Ti/Au	0100RX3 395/10	149257-1 51
QM1003-1	Ti/Ti	0100RX4 595/10	149274-1 64
QM1004	Ti/Pt		
QM1005	Ti/Al2O3		
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

.550" Diameter 4.95MHz polished, plano/plano.

Fil-Tech	ELECTRODE	Q-SENSE
QSX0301	Au	QSX 301 \$295/5
QSX0303	SiO2	QSX 303 450/5
QSX0304	SS	QSX 304 N/A
QSX0309	Al	
QSX0310	Ti	

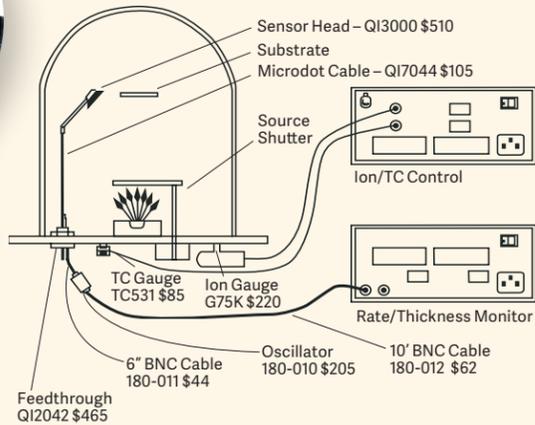
QCM-I Quartz Crystal Microbalance with Impedance Analysis



The QCM-I is a high sensitivity, mass sensing instrument that probes the interactions of molecules, polymers and biological assemblies with surfaces, label-free and in real time. The QCM-I can measure the hydrated mass and rigidity of nm to micron scale layers at the sensor curve, as well as fluid properties. The measurement uses impedance analysis of a quartz crystal sensor to determine the resonant frequency and bandwidth of the resonant conductance curve, fundamental and overtones. The QCM-I has 2-4 channel measurement with independent temperature and flow control on the channels. Fil-Tech crystals and external sensors are available for a range of applications.

POR

Typical System



Monitor/Controller Options		
SQM-160	Rate/thickness monitor	\$2,090
STM-2	Deposition Monitor	787
XTC/3	Deposition Controller	4,710
SQC-310	Deposition Controller	3,390
IC6	Deposition Controller	13,150
CYGNUS 2	Deposition Controller	13,280
Components Required for a Complete System		
180-010	Remote analog oscillator	\$205
180-011	6" BNC cable M/F	44
180-012	10' BNC cable M/M	62
QI3000	Sensor head single sensor	510
QI7044	30" Microdot cable	105
QI2042	Feedthrough 1" bolt	465
TC531	Thermocouple gauge	85
G75K	Ion gauge, 3/4" kovar, iridium	220

INFICON Multi-Film Rate/Thickness Monitors and Controllers

SHOP ONLINE NOW!

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 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.

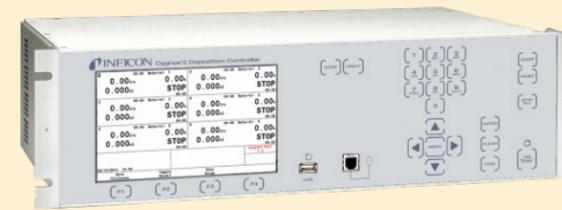
SQM160-S-2-R \$2,090



STM-2 USB Rate/Thickness Monitor

INFICON's STM-2 combines the simplicity of USB connectivity with the accuracy of a precision measurement engine in a compact, inexpensive package. Ten measurements are taken per second while achieving a resolution of 0.037 Å per measurement. The STM-2 comes with everything you need to connect your sensor/feedthrough to a Windows® PC. Simply connect the included BNC cable from the feedthrough to STM-2 and then connect the STM-2 to your PC using a standard mini-USB cable. STM-2 includes LabVIEW® software and Windows software for operation and data logging of up to eight STM-2s simultaneously.

STM-2 \$787



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 ModelLock 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.

CYG2-1101000 \$13,280



Zevision IMC300 Rate and Thickness Controller

INFICON's next-generation Zevision® IMC300 deposition controller offers new patented technology for today's optical coaters. The Zevision IMC300 maximizes reproducibility and uniformity with the highest thickness accuracy, the best measurement resolution, and the lowest rate noise using the ModelLock measurement system. The IMC300 maximizes the number of runs possible while lowering crystal consumable cost. Offered with Sequential Deposition and Codeposition.

IMC300-1001A00 \$4,270
IMC300-2001A00 POR



SQC-310 Thin Film Deposition & Codeposition 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-C \$3,390
SQC310C-4-R-1-C \$6,120



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 ModelLock 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 \$13,150

FEEDTHROUGHS

Single

Single 1" Bolt
QI2042
 \$465
 For Single Sensors

Single 2 3/4" Flange
QI2043
 \$535
 For Single Sensors

Dual

Dual 1" Bolt
QI2000 \$1,000
 For Dual Sensors

Dual 2 3/4" Flange
QI2080
 \$850
 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 \$103	QI7023 \$85
Finger Spring	750-171-P1 40	QI0171 38
Crystal Holder	750-172-G1 91	QI0172 80
Crystal Holder	Fil-Tech Style	QI3010 80
Oscillator	783-500-013 240	180-010 205

CABLES	INFICON	Fil-Tech
Coaxial 30"	007-044 \$126	QI7044 \$105
Special Length		QI7044X 125
Right Angle		QI7045 105

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 \$110
Unsheathed 36"	Pe16018	QP16018 110
Unsheathed 48"	Pe16020	QP16020 110

Cables have exposed metal sheath.

SENSOR HEADS



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

Single

In Line QI3000
 \$510

In Line w/Shutter
QI5000
 \$2,025

Right Angle
QI4000
 \$510

Right Angle w/Shutter
QI4050
 \$2,025

Round Perpendicular
QI3500*
 \$635

Custom sensor heads, feedthroughs and assemblies available.

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

Dual with Shutter

In Line QI6000
 \$2,395

Right Angle QI7000
 \$2,395

Round Perpendicular QI3600
 \$2,455

Positional Sensor Heads

QI1100 \$1,275
 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 \$1,300 Includes Coaxial Cable

Sensor Head With Internal Oscillator & Deep Water Pocket

QP4600

- 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

	QP4500	\$660
Sputter Head, SS	QP4500	\$660
Sputter Head Cap, SS	QP4501	85
Sputter Head, Copper	QP4600	725
Sputter Head Cap, Copper	QP4601	100

Specify crystal diameter for correct crystal holder style

QC12 Crystal Sensor System

Sensor head holds 12 crystals and allows continuous monitoring without process interruption

System Includes

- 2 Multi-crystal sensor heads
- 2 1" bolt or 2 3/4" flange feedthroughs
- Controller
- Vacuum, air and cooling cables
- 12 Complimentary Quality Crystals

The QC12 is precise and reliable and features a small footprint with easy installation and reload. Compatible with INFICON, Sigma, Maxtek and Sycon monitors.

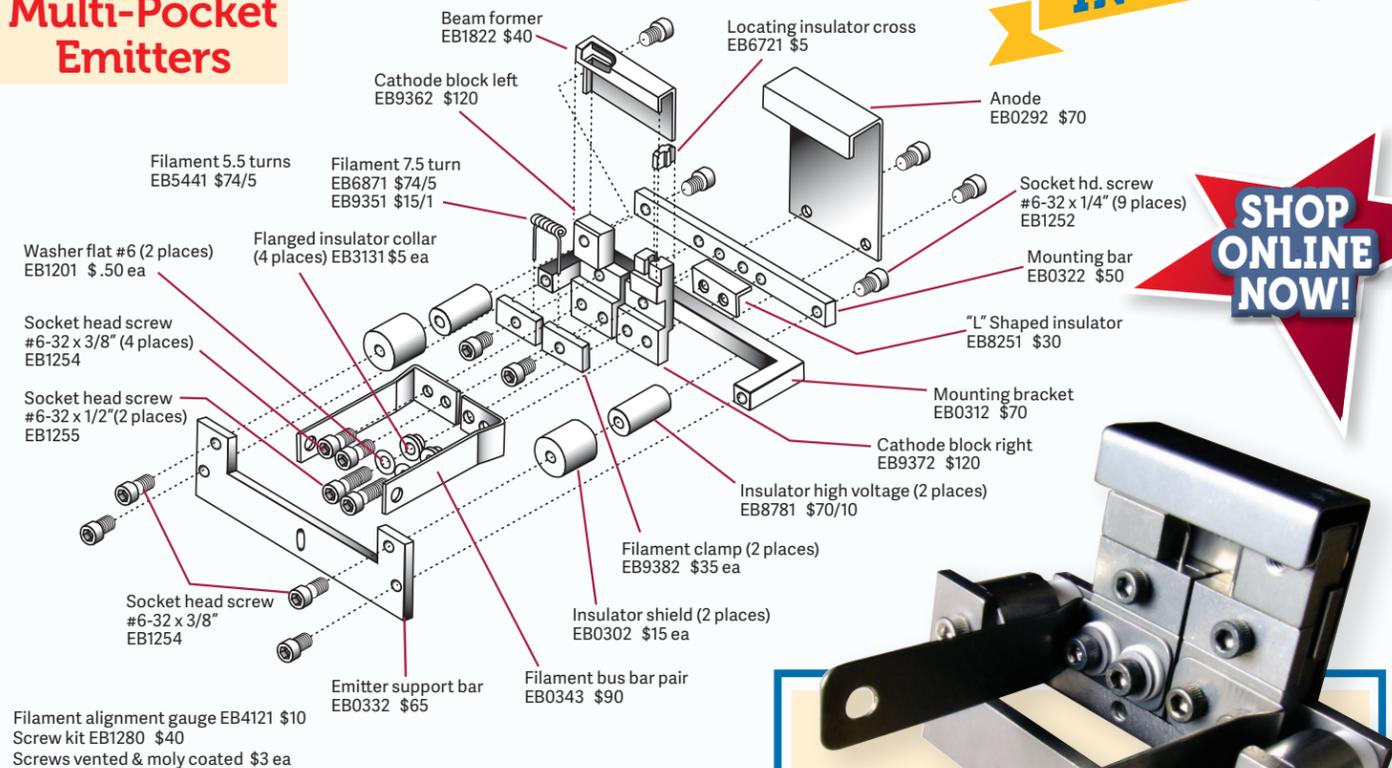
POR

ELECTRON BEAM GUN PARTS

Temescal • Satisloh • Telemark | Filaments • Insulators • Emitters

**ALL ITEMS
IN STOCK**

Multi-Pocket Emitters



**SHOP
ONLINE
NOW!**

Multi-Pocket Emitter Parts

	TEMESCAL	TELEMARK	Fil-Tech	
Anode	0204-0292-0	273-0003-1	EB0292	\$75
Beam Former	0415-1822-0	273-0004-2	EB1822	40
Beam Former, Tantalum	0303-9392-0	N/A	EB9392	55
Cathode Block, Left	0303-9362-0	273-0031-1	EB9362	120
Cathode Block, Right	0303-9372-0	273-0032-1	EB9372	120
Emitter Support Bar	0204-0332-0	273-0018-1	EB0332	65
Filament Clamp	0303-9382-0	273-0033-3/273-0033-4	EB9382	35
Filament Bus Bar Set	0204-0343-0	273-0035-1/273-0036-1	EB0343	90
Insulator Shield	0204-0302-0	273-0011-1	EB0302	15
Mounting Bar	0204-0322-0	273-0017-1	EB0322	50
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	745

Emitter Assemblies

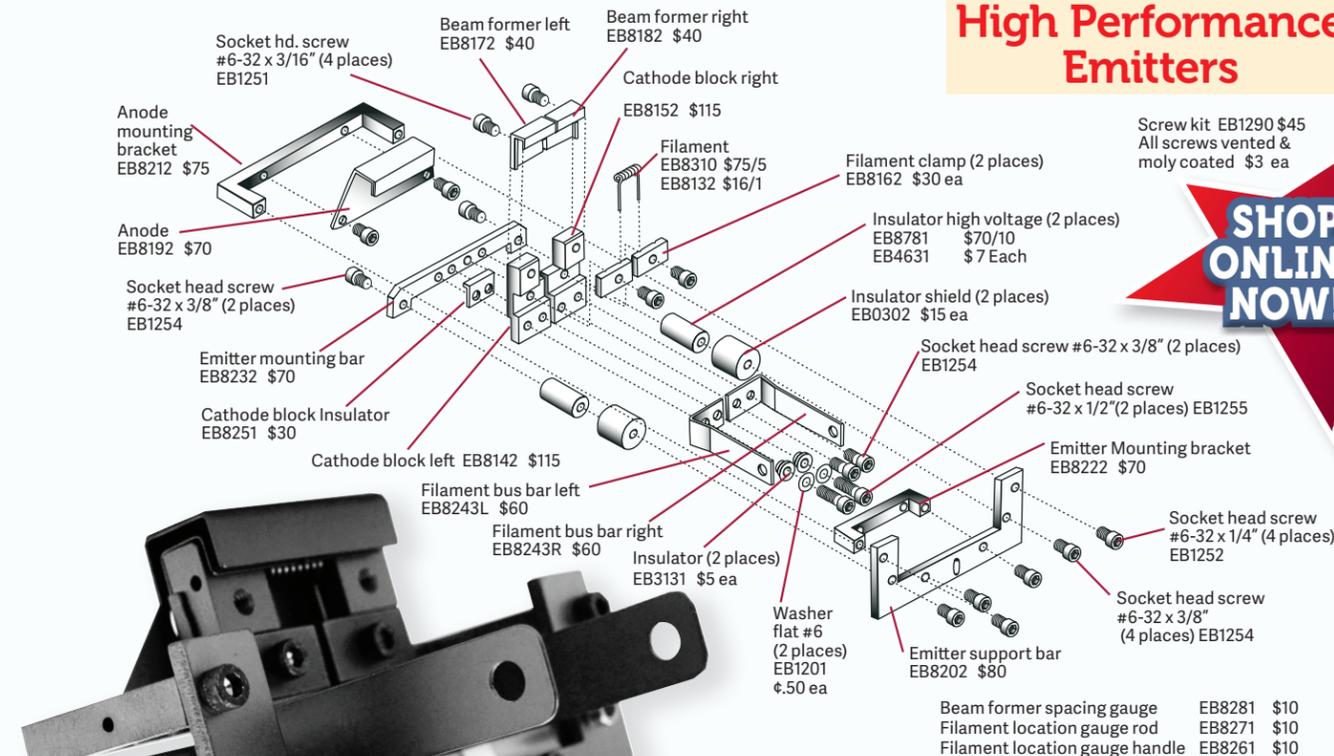
	TEMESCAL	TELEMARK	Fil-Tech	
Multi Pocket	0204-0284-0	273-0150-1	EB0284 Temescal EB0150M Telemark	\$700
Single Pocket	0304-1914-0	253-0150-1	EB1914	700
High Performance	0916-8294-0	N/A	EB8294	800
Emitter Rebuilding Service*	N/A	N/A	EBREBLD	400

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

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.

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	273-3010-1	EB4631	7
Cathode Block "L" Shaped	0916-8251-0	273-0008-1	EB8251	30
Telemark and Temescal parts are interchangeable.				
SLOAN	126-116		EB6116	\$22

High Performance Emitters



**SHOP
ONLINE
NOW!**

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
THERMIONICS	Multi Pocket	273-0001-1	EB0001	74
		273-0002-1	EB0002	74
SATISLOH	SuperSource	A7500823P-122M	EB6871	74
		A7500823P-005M	EB6871-1	80
SLOAN	S Type	A7500336J-003M	EB8483-5	290/20
		270 Gun	126-710	EB7910
LEYBOLD	Hooked Ends	10-094-226	EB4226	210/10
		812180313	EB0313	175
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	60
Filament Bus Bar, Right	0916-8243-2	EB8243R	60
Filament Clamp	0916-8162-0	EB8162	30
Emitter Assembly	0916-8294-0	EB8294	895

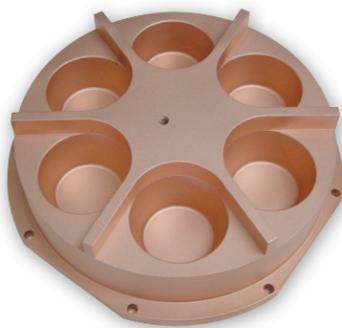
Electromagnetic Coil

TEMESCAL	Fil-Tech
0312-6923-0 \$1,690	EB6923 \$1,550

Do you have a **MDC Vacuum Products e-vap®** source with a HF emitter assembly? Call us for replacement emitter assemblies and component parts

Crucibles

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



SIZE	TEMESCAL	Fil-Tech
4x15cc Pockets	0715-8444-0 \$1,995	EB8444 \$1,850
6x15cc Pockets	0715-8504-0 1,995	EB8504 1,925
4x25cc Pockets	0715-8454-0 1,995	EB8454 1,850
SIZE	TELEMARK	Fil-Tech
6x15cc Pockets	271-0255-3 \$2,250	EB0255-3 \$1,935
4x25cc Pockets	271-0220-3 2,250	EB0220-3 2,000
6x25cc Pockets	271-0257-3 2,250	EB0257-3 1,900

All high water flow

Crucible Covers

SIZE	TEMESCAL	Fil-Tech
4 Pockets	0715-8143-0 \$675	EB8143 \$650
6 Pockets	0715-8153-0 780	EB8153 760
SIZE	TELEMARK	Fil-Tech
4 Pockets	271-0073-1 \$1,150	EB0073 \$715
6 Pockets	271-0074-1 1,150	EB0074 715

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)
----------	------------------------	--------------

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 \$42
	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 80
	40CC		0627-6172-7	271-7040-1	EC0040-1 85
TUNGSTEN	7CC		0627-6152-1	271-7008-9	EC0007-2 \$180
	15CC		0627-6152-3	271-7016-9	EC0015-2 185
	25CC	4 Pocket	0627-6152-5	271-7026-9	EC4025-2 255
	25CC	6 Pocket	0627-6152-6	271-7027-9	EC6025-2 325
	30CC	W/Web	N/A	N/A	ECW030-2 195
	30CC	W/O Web	N/A	N/A	EC0030-2 300
	40CC		0627-6152-7	271-7041-9	EC0040-2 310
MOLYBDENUM	7CC		0627-6162-1	271-7007-3	EC0007-3 \$115
	15CC		0627-6162-3	271-7015-3	EC0015-3 100
	25CC	4 Pocket	0627-6162-5	271-7025-3	EC4025-3 155
	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	EC0040-3 190

MARK II 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

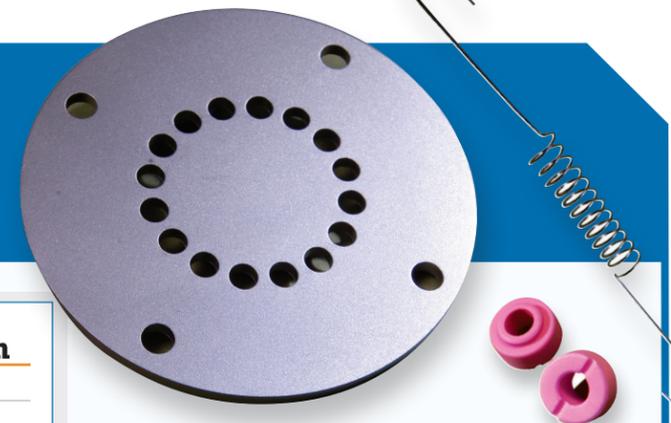
Filaments	VEECO	SATISLOH	Fil-Tech
MARK I	A30274 \$7.20	A7500800Q-131M	IS30274 \$6
MARK II	A16962 7.60	A7500800Q-101M	IS16962 5
VEECO / ION TECH			Fil-Tech
3&5cm Cathode	0503-107 \$50		IS3107 \$12
3cm Neutralizer	0503-063		IS3063 14
5cm Neutralizer	0505-001-003 64		IS1003 6
KAUFMAN & ROBINSON			Fil-Tech
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	15.60	IS2520M 12
	1/4-20F	15.60	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.

SHOP ONLINE NOW!

Anodes

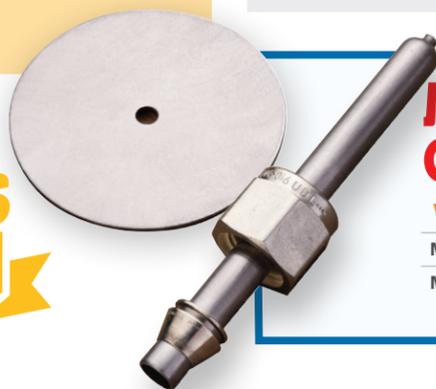
	VEECO	SATISLOH	Fil-Tech
MARK I	B18003-1 Graphite \$77	A7500800Q-132M	IS18003G \$65
	B18003-2 Stainless 57	A7500800Q-133M	IS18003S 55
MARK II	B16933-1 Graphite 196	A7500800Q-175M	IS16933G 160
	B16933-2 Stainless 144	A7500800Q-166M	IS16933S 85

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

SHOP ONLINE NOW!

ALL ITEMS IN STOCK



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	
Agilent	F0472301	TC531	\$85
Agilent	F0472310	TC531VCR	175
AMAT	F2518001	TC004V	56
AMAT	3310-01012	TC531	85
AMAT	3310-01074	TC531VCR	175
AMAT	3310-00236	TC6M	80
AMAT	3310-01071	TC6MVCR	175
Axcelis	3300008	TC004V	56
Axcelis	33001330	TC004KF16	165
Axcelis	33000002	TC002	115
Axcelis	33001009	TC3309	75
Axcelis	7435-0001-0001	TC7435-1	100
Axcelis	7435-0003-0001	TC7435-3	105
CVC	GTC-004	TC004	56
CVC	GTC-036	TC036	65

COMPETITION		Fil-Tech	
Hastings	DV-6M	TC6M	\$80
Hastings	DV-6-VCR	TC6MVCR	175
Hastings	DV-6-KF16	TC6MKF16	165
Hastings	DV-6-KF25	TC6MKF25	200
Hastings	DV-4D	TC4D	90
MKS	270006	TC6M	80
MKS	8112105	TC6MVCR	175
MRC	405052	TC520	120
Novellus	60-00005-00	TC6M	80
Novellus	60-00180-00	TC6MKF25	200
Temescal	6920-4263-0	TC6M	80
Thermionics	6343-004M	TC004V	56



InstruTech® Convection Gauges

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

FITTING	HORNET 400	Fil-Tech	HORNET 401	Fil-Tech	HORNET 402	Fil-Tech
NW16KF	IGM400YBX	\$863	IGM401YBD	\$1,053	IGM402YBD	\$1,271
NW25KF	IGM400YCX	878	IGM401YCD	1,076	IGM402YCD	1,305
NW40KF	IGM400YDX	889	IGM401YDD	1,087	IGM402YDD	1,318
2 3/4CF	IGM400YFX	901	IGM401YFD	1,101	IGM402YFD	1,318
1/2" Cajon 8VCR	IGM400YHX	889	IGM401YHD	1,101	IGM402YHD	1,318

FITTING	WORKER BEE	MKS	Fil-Tech	SUPER BEE	MKS	Fil-Tech	STINGER	MKS	Fil-Tech
1/8" NPT	CVG101GA	275071*	\$141	CVM201GAA	275850	\$531	CVM211GAA	275800	\$369
NW16KF	CVG101GB	275203**	164	CVM201GBA	275865	557	CVM211GBA	275806	389
NW25KF	CVG101GC	275196	182	CVM201GCA	275867	575	CVM211GCA	275807	399
NW40KF	CVG101GD	275316	193	CVM201GDA	275858	591	CVM211GDA	275808	412
1/4" VCR	CVG101GG	275185***	182	CVM201GGA	275851	575	CVM211GGA	275801	399

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

Thermocouple Controllers

DIGITAL PANEL MOUNT

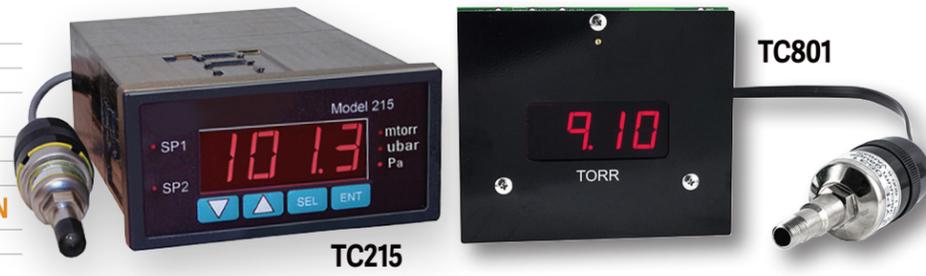
TC801	TC531 Tube	\$585
TC215H	TC6M Tube	820

DIGITAL PANEL MOUNT SINGLE STATION

TC101D	TC531 Tube	505
TC201D	TC6M Tube	505

DIGITAL CABINET MOUNT SINGLE STATION

TC101DC	TC531 Tube	540
TC201DC	TC6M Tube	540



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	
3300002	3/4" Glass, Twin Tungsten	G75PT	\$160
7631-0001-0002	3/4" Kovar, Twin Tungsten	G75KT	180
3300008	Thermocouple Gauge	TC004V	52
AMAT			
5300019	1" Glass, Twin Tungsten	G100PT	\$162
K7360301	1" Glass, Twin Tungsten	G100PT	162
4053050	1" Kovar, Twin Tungsten, 2 3/4" Flange	G100KTF	225
3310-90003	1" Glass, Twin Tungsten	G100PT	162
F2518001	Thermocouple Gauge	TC004V	52
3310-00236	Thermocouple Gauge	TC6M	75
3310-01071	Thermocouple Gauge VCR	TC6MVCR	155
3310-01012	Thermocouple Gauge	TC531	80
3310-01074	Thermocouple Gauge VCR	TC531VCR	165
LAM/NOVELLUS			
27-229-700-00	1" Glass, Iridium, PT Coated, Broad Range	G8136P/1	220
60-00005-00	Thermocouple Gauge	TC6M	75
60-00180-00	Thermocouple Gauge VCR	TC6MVCR	165
SEN			
33S0298	3/4" Glass, Twin Tungsten	G75PT-02S	170

Vacuum Applications

AGILENT	DESCRIPTION	PRICE	Fil-Tech	
X3004-64301	1" Glass, Iridium	235	G100P	188
X3004-64302	1" Kovar, Iridium	268	G100K	220
X3004-64303	1" Kovar, Iridium, 2 3/4" Flange	339	G100KF	265
X3004-64304	3/4" Glass, Iridium	224	G75P	200
X3004-64305	3/4" Kovar, Iridium	256	G75K	220
K7360301	1" Glass, Twin Tungsten	210	G100PT	102
K7360302	1" Kovar, Twin Tungsten	248	G100KT	180
K7360303	3/4" Glass, Twin Tungsten	210	G75PT	160
K7360304	3/4" Kovar, Twin Tungsten	248	G75KT	180
K7360307	1" Kovar, Twin Tungsten, 2 3/4" Flange	311	G100KTF	225
K2500001	1" Glass, Iridium, Pt Coated, Broad Range	245	G8136P/1	245
K2500002	1" Kovar, Iridium, Pt Coated, Broad Range	255	G8136K/1	255
K2500003	1" Kovar, Iridium, Pt Coated, 2 3/4" Flange, BR	285	G8136F	285
MKS				
274002	3/4" Glass, Iridium		G75P	200
274003	3/4" Kovar, Iridium		G75K	220
274005	1" Glass, Iridium	N/A	G100P	198
274006	1" Kovar, Iridium	302	G100K	220
274007	3/4" Kovar, Iridium, 2 3/4" Flange	308	G75KF	265
274008	1" Kovar, Iridium, 2 3/4" Flange	308	G100KF	265
274012	3/4" Glass, Twin Tungsten	163	G75PT	160
274013	3/4" Kovar, Twin Tungsten	186	G75KT	180
274015	1" Glass, Twin Tungsten	181	G100PT	162
274016	1" Kovar, Twin Tungsten	198	G100KT	180
274032	1" Kovar, Iridium, KF25 Flange	348	G100KF25	265
ANELVA				
33-437-0025/UDG-1S	15mm Glass, Twin Tungsten		G59PT	225
BRG-1B	15mm Glass, Iridium		G59P	225
MRC				
4050300	.709" Glass, Twin Tungsten		G71PT	180



INFICON Vacuum Gauges

INFICON authorized distributor

Fil-Tech is an authorized distributor of INFICON vacuum gauges. We supply INFICON's Pirani Standard, Pirani Standard Advanced, Pirani Capacitance Diaphragm, Bayard-Alpert, Bayard-Alpert Pirani, Bayard-Alpert Pirani Capacitance Diaphragm, Inverted Magnetron Pirani, and Penning Cold Cathode gauges. Choose your INFICON gauge and call us for best pricing.



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.

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.



LD7



LD10

FILAMENT	ALCATEL	Fil-Tech	
Filament	053146	LD10	\$135
Collector Single	083485	LD11	35
Collector Double	101127	LD12	35

FILAMENT	AGILENT	Fil-Tech Repair Exchange	
Tungsten	82850301	LD7RE	\$70
Iridium	82850302	LD8RE	110

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	\$609		Iridium Single	GB20IR	\$490
274043	690	3310-01081	Iridium Single With Pin Guard	GB43IR	645

UHV Gauges/Pin Guards

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

MKS		DESCRIPTION	Fil-Tech	
274022	\$609	Tungsten Dual	GU21T	\$460
274023	656	Iridium Dual	GU21IR	510
274050	621	Tungsten Dual, NW40KF	GU50T	560
274041	690	Tungsten Dual With Pin Guard	GU41T	580
274042	725	Iridium Dual With Pin Guard	GU42IR	615
274057	708	Tungsten Dual, NW40KF w/Pin Guard	GU57T	580

AGILENT

X3004-64401	721	Iridium Dual	GU24IR	625
9715008	679	Tungsten Dual	GU24T	625

Replacement Filaments

AGILENT		DESCRIPTION	Fil-Tech	
9710018	\$125	Tungsten Dual	GF18	\$52
X3004-64403	239	Iridium Dual	GF28	106

MKS

274024	209	Tungsten Dual	GF24	80
274025	245	Tungsten Dual	GF25	106
274029	209	Iridium Single	GF29	106

One filament per box

CALIBRATED HELIUM LEAKS

	NEW	Fil-Tech	RECALIBRATION
CL7	10-7ccHe/sec	\$700	Certification \$375
CL8	10-8ccHe/sec	735	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®	Fil-Tech FLUID™
FTF001	1 cc Syringe	\$112	\$100
FTF003	3 cc Syringe	247	275
FTF100	2-50 cc Bottles	1,280	1,100

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	NEW	REPROCESSING
1 Gallon	\$440	\$195	
5 Gallon	2,000		
FT704			
500 cc	\$90		
1 Gallon	550	195	
5 Gallon	2,500		
FT705			
500 cc	\$140		
1 Gallon	800	200	
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.
 - Frontier Vacuum® Frontier Vacuum
 - High Performance® Ferrotec Corp.
 - INFICON® INFICON
 - Advanced Adhesion Alloy®
 - Longer Life Gold®
 - Quality Crystals®
 - Stress Relieving Alloy®
 - InstruTech® InstruTech
 - Intellectrics® Intellevation Ltd.
 - Ion Tech® Veeco Instruments, Inc.
 - Kaufman & Robinson® Kaufman & Robinson
 - Krytox® The Chemours Company FC, LLC
 - Lam® Lam Research Corporation
 - Leybold® Oerlikon Leybold Vacuum
 - Maxtek® INFICON
 - MKS® MKS Instruments
 - Novellus® Novellus Systems, Inc.
 - QCM-I® Semilab Inc.
 - Q-Sense® Biolin Scientific Holding, AB
 - Santovac® Arch Technology Holding, LLC
 - Satisloh® Satisloh GmbH
 - Sloan® Veeco Instruments, Inc.
 - SuperSource® Ferrotec Corp.
 - Telemark® Telemark
 - Temescal® Ferrotec Corp.
 - Thermionics® TLI Enterprises, Inc.
 - TorrLube® The Torr Lube Company, LLC
 - ULVAC® ULVAC Technologies, Inc.
 - Umicore® Umicore
 - Unaxis® OC Oerlikon Corp., AG
 - Veeco® Veeco Instruments, Inc.
 - Windows® Microsoft, Inc.

SHOP ONLINE NOW!



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	\$240
SANT5-01	100 cc	325
SANT5-05	500 cc	1,245
SANT5-1	1 Gallon	7,450

MECHANICAL PUMP FLUIDS & VACUUM VALVES

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	130
Viscosity @100°C	8 cst (52.7 SUS)	55 Gallon	1,175

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	\$70
Viscosity @ 40°C	58 cst (269 SUS)	5 Gallon	270
Viscosity @100°C	8.5 cst (54.1 SUS)	55 Gallon	2,125

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	\$55
Viscosity @ 40°C	75 cst (350 SUS)	5 Gallon	200
Viscosity @100°C	9.4 cst (58 SUS)	55 Gallon	1,450

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	\$45
Viscosity @ 40°C	90 cst (418 SUS)	5 Gallon	160
Viscosity @100°C	10 cst (58.8 SUS)	55 Gallon	1,300

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	\$50
Viscosity @ 40°C	100 cst (600 SUS)	5 Gallon	185
Viscosity @100°C	14 cst (64 SUS)	55 Gallon	1,325

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	\$55
Viscosity @ 40°C	205 cst (950 SUS)	5 Gallon	200
Viscosity @100°C	18 cst (85 SUS)	55 Gallon	1,435

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	270
Viscosity @100°C	9 cst (55.4 SUS)	55 Gallon	2,350

Frontier Vacuum

Fil-Tech distributes Frontier Vacuum Angle, Gate and Ball Valves. Frontier Vacuum offers 25 years of excellent quality valves at competitive prices to the semiconductor, solar, and thin film industries.



Vacuum Angle Valves

Frontier manual and pneumatic vacuum angle valves are designed for general use in vacuum systems, processes, and exhaust applications. They are particularly well suited for vacuum isolation or control under rigorous installation conditions. The angle valves are equipped with vacuum bellows and are highly effective in high vacuum environments. Frontier manual and pneumatic angle valves operate in a pressure range of 1x10⁻⁶ Pa to 1.2x10⁽⁵⁾ Pa and are offered with DN25, DN40, DN63, DN80, and DN100 flanges.

Vacuum Gate Valves

Frontier vacuum gate valves offer a thin profile and low flow resistance. They transport gases and solids and can seal against atmospheric pressure. The valve plate moves within the body cavity without contacting the walls. When opening or closing, the valve plate expands or contracts linearly upon reaching the sealing surface and avoids friction on the O-ring seal on the valve plate. Frontier Vacuum gate valves are offered in manual or pneumatic, stainless steel and aluminum, have a leak rate of 1.3x10⁻¹⁰ PaM³/S, and are available with DN40-1320 flanges.

Vacuum Ball Valves

Frontier manual ball valves are used to start and cut off fluid flow in vacuum systems and can be used in gas and liquid pipeline systems under positive and negative pressure ranging from 1x10⁻⁶ Pa to 1.2x10⁽⁵⁾ Pa. Frontier pneumatic 2-way and 3-way ball valves can withstand positive pressure to meet the requirements for ultra-high vacuum and accelerator systems and are used in vacuum systems ranging from 1x10⁻⁶ Pa to 4x10⁽⁵⁾ Pa. Manual and pneumatic ball valves are offered with DN16, DN25, DN40, DN50, DN63, DN80, DN100, DN160 and DN200 flanges.

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	\$370/kg
1514	370/kg
1525	370/kg
1514XP	400/kg
1525XP	400/kg
XP Rust preventative fluid	
PFPE SOLVENT	
KXSOLV-1	\$600/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

SHOP ONLINE NOW!

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	\$130	\$475	\$2,240	-34°/288°C	240 cSt	2 x 10-8 torr
	EG3000	130	475	2,240	-29°/316°C	440 cSt	6 x 10-9 torr
Aerospace 240 Greases (milspec)	240AB	265	915	3,275	-40°/232°C	78 cSt	5 x 10-6 torr
	240AC	265	915	3,275	-34°/288°C	270 cSt	8 x 10-8 torr
	240AD	265	915	3,275	-29°/316°C	500 cSt	6 x 10-9 torr
Low Vapor Pressure Grease	LVP	130	480	1,920	15°/300°C	740 cSt	1 x 10-13 torr
General Purpose Greases	GPL202	60	190	650	-63°/132°C	15 cSt	Standard Grade
	GPL203	58	180	625	-60°/154°C	30 cSt	Standard Grade
	GPL205	58	180	625	-36°/204°C	160 cSt	Standard Grade
	GPL206	58	180	625	-36°/260°C	243 cSt	Standard Grade
	GPL207	58	180	625	-30°/288°C	450 cSt	Standard Grade
	GPL224	58	180	625	-51°/179°C	60 cSt	Anti Corrosion
	GPL226	58	180	625	-36°/260°C	160 cSt	Anti Corrosion
GPL227	58	180	625	-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	\$630	-70°/104°C	7.8 cSt
GPL102	630	-63°/132°C	15 cSt
GPL103	605	-60°/154°C	30 cSt
GPL104	605	-51°/179°C	60 cSt
GPL105	605	-36°/204°C	160 cSt
GPL106	605	-36°/260°C	243 cSt
GPL107	605	-30°/288°C	450 cSt



Fil-Tech

6 PINCKNEY STREET, BOSTON, MA 02114

Presorted Standard
U.S. Postage
PAID
Boston, MA
Permit No. 54302

Quality & Savings From Stock

Liquid Plating Crystals 2

Quality Crystals and Typical System 2

INFICON Multi-Film Rate Thickness Monitors and Controllers 3

Sensor Heads, Positional Sensor Heads, Bakeable Heads, QC12 and Feedthroughs 4-5

Electron Beam Gun Replacement Parts 6-7

Crucible Liners, Crucibles and Covers, and Silicon Dioxide 8

Ion Source Replacement Parts 9

Thermocouple Gauges and Controllers, and Convection Gauges 10

Ionization Gauges and INFICON Gauges 11

Nude Gauges and Replacement Filaments 12

Leak Detector Filaments, Calibrated Leaks and Fil-Tech Fluid 12

Diffusion Pump Fluids and Santovac 5 13

Frontier Gate, Ball and Angle Values, and Hydrocarbon Fluids 14

Krytox Oils and Greases 15



Online Shopping Made Easy!

SALES HOURS: 8am - 8pm ET TERMS: Net 30 days DELIVERY: Stock F.O.B.: Boston, MA

800-743-1743
617-227-1133

✉ paula@filtech.com

🌐 Online Ordering
www.filtech.com