

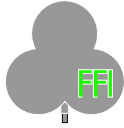
Field Forensics, Inc.

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Solid Phase Micro Extraction Catalog & Price List 2009



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Field Forensics Inc. (FFI) is a developer, manufacturer, and distributor of chemical sampling equipment and ancillary laboratory equipment. Field Forensics manufactures E.L.I.T.E.™ explosives detection kits in the United States and distributes them worldwide. Last year we partnered with NIC Instruments, First Line Technology, Pelican Case, Leatherman Tool Group, and, most recently, Aigis Blast Protection, to offer bomb suits, search suits, cooling suits and vests, and other EOD/IEDD equipment such as hook & line gear, bomb blankets, search tools, remote manipulators, cases, multi-tools, as well as blast resistant trash bins and detonator transport boxes. Our partners share our goal of offering the best possible product for the price, and our belief that everything we bring to market should be simple and reliable.

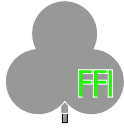
“DETECT, ANALYZE, DEFEAT”

Introduction to Solid Phase Micro Extraction (SPME)

At the University of Waterloo in Canada, Professor Janusz Pawliszyn and colleagues invented Solid Phase Micro Extraction (SPME) and with it won the 1994 R&D 100 Award. SPME allows the direct adsorption of many volatile and semi-volatile organic compounds onto a specially coated fiber. When the SPME sample arrives in the lab, the SPME fiber can be inserted directly into the injection port of a gas chromatograph-mass spectrometer (GC-MS) or a high performance liquid chromatography (HPLC) system. So, within minutes of arrival at the lab or transportable GC-MS, a definitive answer is ready. With the invention of SPME and further work by Prof. Pawliszyn's commercial collaborators, Supelco and Varian, much of the tedious and time-consuming sample preparation work was eliminated for many types of organic compounds analyses. With the introduction of FFI's patented rugged SPME devices, the applicability of SPME to field sampling became possible even in the extremely harsh conditions of HAZMAT, fire-fighting and military missions, and in the strict sample-control regimes required by law enforcement agencies in forensic sampling.

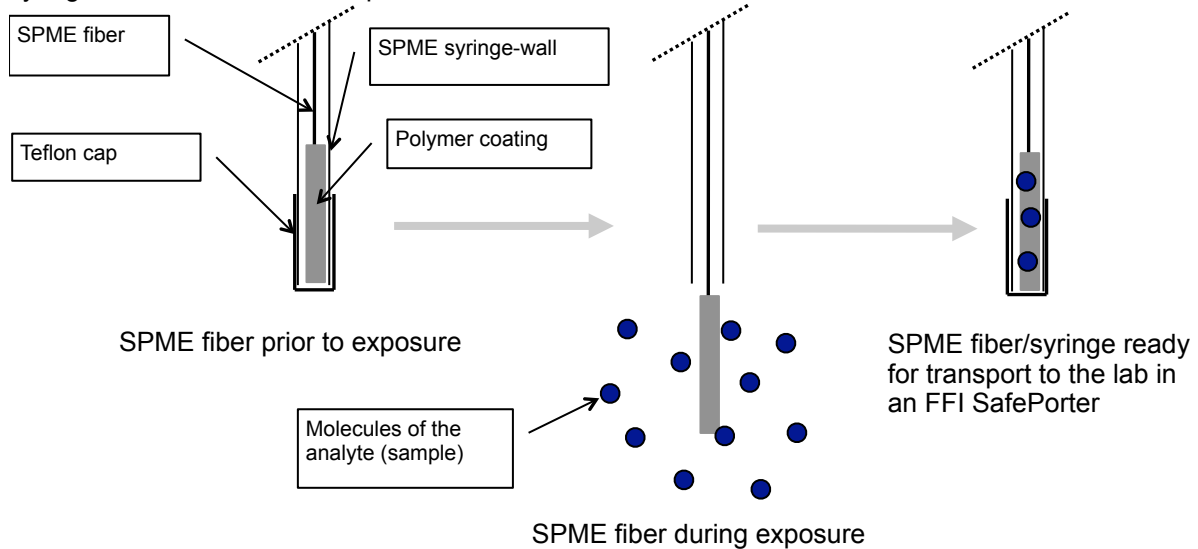


Dr. Janusz Pawliszyn, of the University of Waterloo, was awarded the R&D100 Award in 1994 for his invention of Solid Phase Micro Extraction (SPME).



Solid Phase Micro Extraction Explained

The basic component of the SPME technology is a thin fiber coated in adsorbing polymer housed in a syringe-like device that can expose the fiber and then retract it.



A simple explanation of what happens when the sample is taken is that the SPME fiber/polymer reaches equilibrium with the environment in which it finds itself whether this is in air or in liquid, insofar as any volatile or semi-volatile compounds are concerned. Although there are techniques by which the technician can increase the speed with which a reliable sample can be taken, in most cases the polymer will adsorb the analyte in a few minutes without the sampling technician having to do any kind of physical or mechanical sample preparation.

After collection of the sample, the SPME fiber must be protected such that it does not then lose the adsorbed analyte before the sample can be measured in the laboratory. FFI's devices are designed to secure the sample and keep it secure during its transport to the lab or even in the lab if there's any amount of time between sampling and introduction of the sample into the analytical instrument (e.g. GC/MS). Samples taken with FFI's SafePorter and TuffSyringe can even be safely shipped by commercial carrier without having to worry about sample loss or damage to the SPME syringe.

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For more detailed information on how SPME works, the text Solid Phase Micro Extraction, Theory and Practice, by Professor Pawliszyn is highly recommended. There are also some excellent application notes and other material available on the Supelco website, www.supelco.com. A bibliography and list of web-links is included at the end of this document.

FFI's Products



Solid Phase Micro Extraction Products

FFI offer SPME products for the laboratory and for the field. The **TuffSyringe™** uses Supelco SPME fiber assemblies and offers users a very rugged manual SPME sampler for a very reasonable price. The **SafePorter™** is designed to protect the Supelco Manual Sample Holder but can also be used with other types of devices. The **Conditioner 1X™** and **Conditioner 2X™** are the first commercially-available SPME conditioners on the market.

TuffSyringe™, Model TS100



TuffSyringe™, Model TS100, is the most durable manual SPME manipulator available. The body of the TuffSyringe™ is constructed of stainless steel - the end caps are made of titanium. Although very rugged, TuffSyringe™ has a slim design and is easily carried in one's shirt or lab coat pocket. The titanium end caps protect the TuffSyringe™ during storage and transport and the Teflon insert envelopes the SPME needle and prevents loss or contamination of the sample or contamination of the SPME fiber.

The TuffSyringe™ can be fitted with any of the Supelco SPME fiber assemblies designed for manual use.

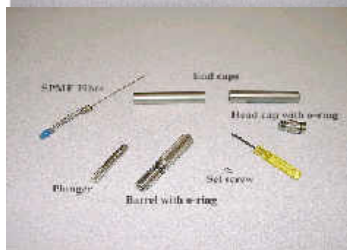
Refer to the price list for a complete list of TuffSyringe™ model numbers, options, and accessories.

The TuffSyringe™ can be disassembled and reassembled in seconds, including installation or replacement of the SPME fiber. The TuffSyringe™ also allows the user to see the hub color of the SPME assembly so one always knows which type of fiber is installed.

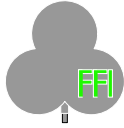
The TuffSyringe™ Field Kit, Model TS110, has a capacity of up to 25 TuffSyringes™ and includes accessories for disassembly and preventive maintenance. The Kit comes in a very rugged but lightweight, waterproof enclosure, to further protect samples and to provide a convenient means of storage and of transporting many TuffSyringes™ to the field. The kit is rugged enough to be shipped via overnight courier with nothing more than a shipping label.



TuffSyringe™, Model TS100 with caps installed. The caps preserve the sample and prevent contamination of the SPME fiber as well as inadvertent operation.



TuffSyringe™ shown disassembled with SPME needle assembly (not included). TuffSyringe™ disassembles and reassembles in seconds. The components can be autoclaved.



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TuffSyringe™ Kit includes accessories, is completely watertight, and extremely rugged. As pictured, can hold up to 25 TuffSyringes. Greater capacity available.

The TS100 can be fitted with any of the Supelco SPME fiber assemblies designed for manual sampling and are available from FFI with the fibers installed up special request.

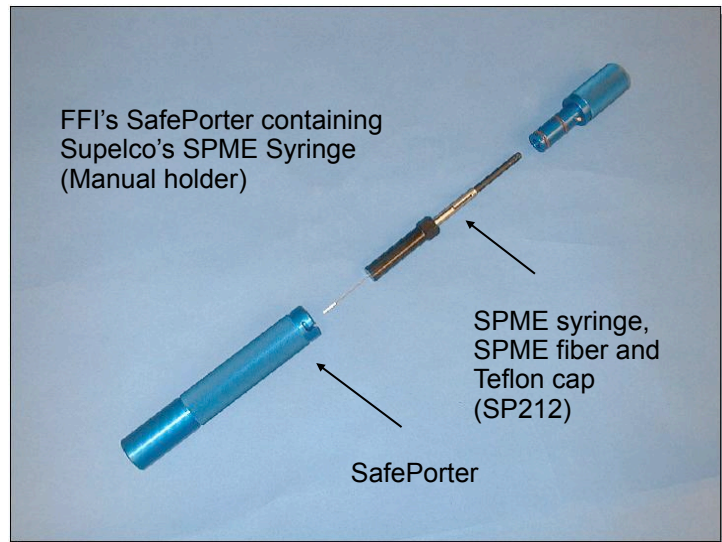
(Refer to the price list for a complete listing of TuffSyringe™ part numbers.)

SafePorter™, Model SP200

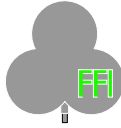
SafePorter™, Model SP200, is popular with HAZMAT groups that need to transport and store SPME devices (Supelco Manual Sampler Holders and other syringes).

It's constructed of machined aluminum, is extremely rugged, and yet can be opened with a quarter twist of the handle. Dual o-rings create a hermetic seal to preserve and protect the SPME sampler and sample.

Small Teflon caps that fit over the end of the SPME needle assembly, Model SP212, are available to further preserve samples and can be used in the lab as well as with the SafePorter™.



A septum in one end of the cylinder (SP200) allows sampling of the internal space of the SafePorter™ before opening just in case the entire manual sample holder is contaminated with some kind of hazardous material. The SafePorter™ Field Kit, Model SP210, has a capacity of up to 5 SafePorters™ and includes a Teflon-cap extractor (see below), accessories for preventive maintenance and space for extra SPME fibers. The Kit comes in a very rugged but lightweight, waterproof enclosure, to further protect samples and to provide a convenient means of storage and of transporting many SafePorters to the field. The kit is rugged enough to be shipped via overnight courier with nothing more than a shipping label.

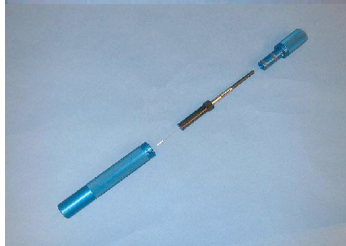


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SafePorter™, Model SP200 closed/sealed. The SP200 holds a Supelco SPME Manual Sample Holder and other syringes. It has a double o-ring seal that makes the SP200 completely air-tight. The SP200 can be run over by a car and will still keep the contents safe.



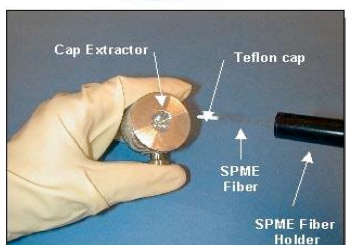
SafePorter™ shown opened, with a Supelco SPME Manual Sample Holder. The elegant design allows opening of the SP200 with a 1/4 twist of the housing. The components can be autoclaved.



SafePorter™, model SP200 has a septum in one end of the cylinder. This allows sampling of the internal volume of the SP200 prior to opening should hazardous contaminants be suspected.



SafePorter™ Kit includes accessories, is completely watertight, and extremely rugged. As pictured, can hold up to 5 SP200s with space for spare SPME needles. Custom kits are available.



The SafePorter™ Cap Extractor, Model SP211, is available separately. The cap extractor allows the user to easily grip the SPME needle Teflon caplets (Model SP212) while wearing heavy gloves and the SP211 secures the cap until it's ready to be re-installed.

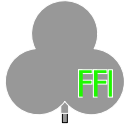
(Refer to the price list for a complete SafePorter™ part numbers.)

SPME Conditioner 1X™, Model CN303R

Model CN303 is a single-channel conditioner. The CN303 includes a built-in gas metering valve to control the gas flow. Using the CN303 is a much more effective and less costly way of conditioning SPME fibers (as compared to using your GC's injection port!) – it does a better job and frees up your GCMS for more interesting work.

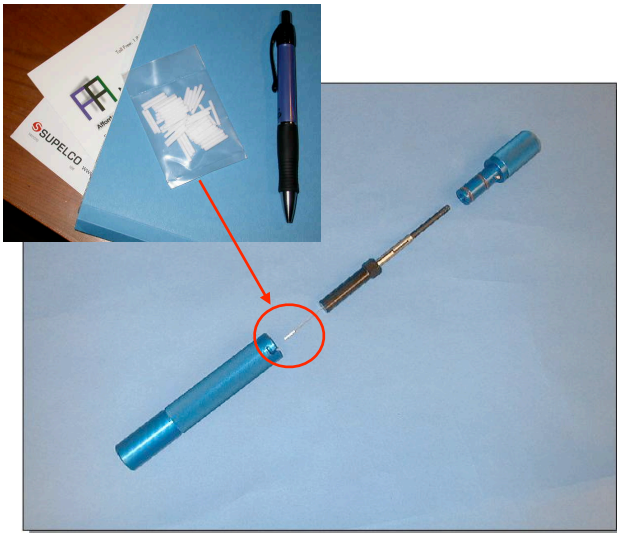
Conditioner 1X™ Model CN303R Features:

- 1-Port SPME Fiber Conditioner



- Precisely measures and controls temperature from 0° to 350° C
- Operates on 100-240VAC, 50/60HZ
- Temperature controller maintains constant temperature (does not measure time)
- Controller indicates set-point and current temperature
- The system can be used to clean other types of needles/syringes in addition to SPME fibers
- External fittings for the flushing gas are 1/8" Swagelok tube fittings

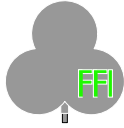
SP212 Teflon Caplets for SPME Assemblies



Whether using FFI's other SPME products or not, the SP212 Teflon Caplets are excellent for maintaining sample integrity and keeping SPME fiber assemblies clean and contamination free whether in the field or the lab.

Price List

Model No.	Description	Price
TS100	TuffSyringe™ - SPME needle assembly not included	\$245.00
TS-KIT-X	TuffSyringe Field Kit – custom kit of multiple TS100s as well as ancillary devices.	Contact
SP200	SafePorter with septum – SPME Manual Sample Holder and SPME needle assembly not included.	\$145.00
SP-KIT-X	SafePorter Field Kit – custom kit of multiple SP200s as well as ancillary devices.	Contact
SP211	Cap extractor – for gripping, removing, installing Teflon caplets, SP212 (not included)	\$350.00
SP212	Teflon caplets. Pack of 50. For use with SPME Fiber Assemblies from Supelco.	\$195.00
CN303R	Conditioner 1X™	\$1895.00



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Payment & Terms

All prices are quoted and payable in US\$.

Visa & Mastercard are accepted.

US Government and US State purchase orders are accepted.

Credit terms are available with verification.

All prices are FOB St. Petersburg, Florida, USA unless otherwise quoted. Shipping charges vary with location.

Warranty

All items have a one year return-to-factory warranty except for SPME fibers. SPME fibers are warranted against manufacturing defects for 30 days and will be replaced if FFI determines that the items are indeed defective. All other products under warranty will be repaired or replaced as determined by FFI.