Are you automating your SPME workflow? Now you can use the full range of Supelco® SPME fibers with your PAL system.

Supelco® Smart SPME fibers combine our SPME coating expertise and innovations, including the Carboxen®, dual-coated, and overcoated fibers, with Smart technology for seamless sample preparation. The Smart fibers are equipped with a unique Smart chip that offers the following benefits:

- **Traceability:** Monitor usage parameters such as stroke count, dates of operation, and temperature exposure.
- **Ease-of-Use:** Automatic application of correct parameters for the specific SPME fiber coating.
- **Increased Productivity:** Fully automated sampling for high productivity.

**Proven SPME Performance Meets Smart Technology**

Our traditional SPME fibers offer sorbent phases engineered to ensure optimal extraction & desorption efficiency, limit sample carryover, and enable sampling of analytes over a wide molecular weight range. The entire portfolio of our traditional Supelco® SPME fibers is now available in the Smart SPME format for accurate, precise and consistent results.

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Coating</th>
<th>Coating Thickness</th>
<th>Core Type</th>
<th>Phase Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>548552-U</td>
<td>PDMS</td>
<td>7 µm</td>
<td>Fused Silica</td>
<td>Nonpolar</td>
</tr>
<tr>
<td>548553-U</td>
<td>PDMS</td>
<td>30 µm</td>
<td>Fused Silica</td>
<td>Nonpolar</td>
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<td>548575-U</td>
<td>PDMS</td>
<td>100 µm</td>
<td>Fused Silica</td>
<td>Nonpolar</td>
</tr>
<tr>
<td>548652-U</td>
<td>Polyacrylate</td>
<td>85 µm</td>
<td>Metal Alloy</td>
<td>Polar</td>
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<tr>
<td>548676-U</td>
<td>PEG</td>
<td>60 µm</td>
<td>Fused Silica</td>
<td>Polar</td>
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<tr>
<td>548650-U</td>
<td>PDMS/DVB</td>
<td>65 µm</td>
<td>Fused Silica</td>
<td>Adsorptive</td>
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<tr>
<td>548651-U</td>
<td>PDMS/DVB-OC</td>
<td>65 µm/10 µm</td>
<td>Fused Silica</td>
<td>Adsorptive</td>
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<tr>
<td>548550-U</td>
<td>CAR/PDMS</td>
<td>75 µm</td>
<td>Fused Silica</td>
<td>Adsorptive</td>
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<tr>
<td>548551-U</td>
<td>CAR/PDMS</td>
<td>85 µm</td>
<td>StableFlex™</td>
<td>Adsorptive</td>
</tr>
<tr>
<td>548653-U</td>
<td>DVB/CAR/PDMS</td>
<td>50 µm</td>
<td>StableFlex™</td>
<td>Adsorptive</td>
</tr>
</tbody>
</table>

All Fibers have a 23 Ga needle.

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**Innovative Coatings Engineered by our Analytical Chemists**

We continue to lead the market in the development of innovative SPME coatings of complex/high background matrices designed to solve your analytical challenges:

- **Supelco® SPME-OC (overcoated) PDMS/DVB fibers** were designed to address the challenges associated with immersion SPME of complex/high background matrices. During direct immersion, food samples which contain fats, sugars, pigments, and other macromolecules tend to stick to adsorptive (particle) SPME fibers causing a reduction in fiber life time. Additionally, these matrix components can be transferred to the GC where they may interfere with chromatographic analysis and/or cause more frequent maintenance. Supelco® SPME-OC PDMS/DVB fibers incorporate a protective PDMS overcoating on the fiber making it more physically robust, less prone to chemical fouling, and enable an efficient wash step reducing matrix transfer.

- **Carboxen® (CAR/PDMS) coated fibers** offer the most efficient extraction of small volatile analytes (molecular weight < 150). Due to the greater relative adsorptive strength of the Carboxen® carbon molecular sieve (CMS) for small molecules, compared to spherical graphitized polymer carbon (SGPC) or carbon black (GCB) adsorbents, they can retain volatile analytes more strongly for increased sensitivity and reliable results. This characteristic can be attributed to the Carboxen® tapered pore which results in enhanced thermodynamic properties and kinetics, enabling both efficient adsorption and desorption of low molecular weight or volatile compounds. Carboxen® fibers are ideal for trace level analysis. The Carboxen® material is also used in the dual coated DVB/CAR/PDMS version, which offers the high extraction efficiencies of a particle fiber and expands the molecular weight range that can be sampled.
GC/MS/MS Analysis of Bisphenol A (BPA) in Pureed Carrot Baby Food

Conditions

**SPME procedure**

- **Sample/matrix:** 10 mL vial containing 0.5 g sample (spiked at 10 ng/g with BPA and equilibrated for 30-60 min), 6.5 mL of water at pH 4 containing 25% sodium chloride, and 7 µL of a 1 µg/mL methanolic solution of BPA-d16 internal standard.

- **Incubation:** 10 min, 50 °C, 400 rpm

- **SPME fiber:** Overcoated PDMS/DVB (57439-U; smart SPME Version: 548651-U)

- **Extraction:** immersion, 50 min, 50 °C, 250 rpm, vial penetration 34 mm

- **Wash:** 0.5 min, 250 rpm, vial penetration 34 mm

- **Desorption:** 3 min, 260 °C

- **Post bake:** 6 min, 270 °C

**GC-MS/MS**

- **Column:** SLB®-PAHms, 30 m x 0.25 mm I.D., 0.25 µm (28340-U)

- **Oven:** 100 °C (3 min), 15 °C/min to 300 °C (10 min)

- **Injection temp.:** 260 °C

- **Carrier gas:** helium, 1 mL/min constant flow

- **Detector:** MSD

- **MSD interface:** 325 °C

- **Liner:** 0.75 mm I.D. SPME

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Smart SPME Carboxen® Fibers

**GC Analysis of Terpenes in Cannabis**

**Sample Prep Method**

- **Sample/matrix:** 0.5 g dried cannabis in 10 mL headspace vial

- **SPME fiber:** Divinylbenzene/Carboxen/Polydimethylsiloxane (DVB/CAR/PDMS), 50/30 µm (57298-U, smart SPME version: 548551-U)

- **Extraction:** 20 min, headspace, 40 °C

- **Desorption process:** 3 min, 270 °C

- **Sample preparation:** 30 min equilibration at 40 °C prior to extraction fiber post-bake after extraction, 3 min at 270 °C

**Primary Analytical Method**

- **Column:** Equity®-1, 60 m x 0.25 mm I.D., 0.25 µm (28047-U)

- **Oven:** 60 °C (2 min), 5 °C/min to 275 °C (5 min)

- **Injection temp.:** 270 °C

- **Carrier gas:** helium, 1 mL/min constant flow

- **Detector:** MSD

- **MSD interface:** 300 °C

- **Liner:** 0.75 mm ID, SPME

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**Supelco® Smart SPME fibers for PAL have been developed by analytical chemists, for analytical chemists, so you can be assured of accurate, precise and consistent results – every time.**

**Accuracy and precision made simple**

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