SPME Fiber

Note

This data sheet contains important notes for the operator. It is highly recommended for operators to become familiarized with the product prior to use.

- When using with AOC-6000, Conditioning Modle and Agitator are essential.
- All SPME Fibers have a standard length of 10 mm and the core material is Fused Silica.

SPME Fiber Order Information

No.	Phase Type	Phase Thickness	Color Code	P/N (set of 1)	P/N (Set of 3)	P/N (Set of 5)
1	Plydimethylsiloxane (PDMS)	7 µm	Green	227-35313-01	227-35313-03	227-35313-05
2	Plydimethylsiloxane (PDMS)	30 µm	Golden	227-35314-01	227-35314-03	227-35314-05
3	Plydimethylsiloxane (PDMS)	100 µm	Red	227-35315-01	227-35315-03	227-35315-05
4	Acrylate	85 µm	Grey	227-35319-01	227-35319-03	227-35319-05
5	Carbon Wide Range (WR)/PDMS	95 µm	Dark Blue	227-35318-01	227-35318-03	227-35318-05
6	Divinylbenzene (DVB)/PDMS	65 µm	Violet	227-35317-01	227-35317-03	227-35317-05
7	DVB/Carbon WR/PDMS	80 µm	Dark Grey	227-35316-01	227-35316-03	227-35316-05
SPME Fiber Selection for method development 1 (No.1, 2, 3, 4, 5)						227-35320-01
SPME Fiber Selection for method development 2 (No.3, 4, 5, 6, 7)						227-35321-01

SPME Fiber Temperature and Conditioning Recommendations

Phase Type	Phase Thickness	Maximum Temperature (°C)	Recommended Operating Temperature (°C)	Conditioning Temperature (°C) min/max	Preconditioning Time (min) min/max/Recom.	Conditioning Time (min) min/max/Recom.	Rinsing Solvent	Rinsing Time (min) min/max/ Recom.
PDMS	7	340	200-340	200 / 340	15 / 120 / 30	1 / 60 / 5	MeOH/EtOH /iProp	0.5 / 10 / 2
PDMS	30	280	200-280	180 / 280	15 / 120 / 30	1 / 60 / 5	MeOH/EtOH /iProp	0.5 / 10 / 2
PDMS	100	280	200-280	180 / 280	15 / 120 / 30	1 / 60 / 5	MeOH/EtOH /iProp	0.5 / 10 / 2
Acrylate	85	300	200-280	180 / 280	15 / 120 / 30	1 / 60 / 5	MeOH /aliphatic HC	0.5 / 10 / 2
Carbon WR	95	300	220-300	200 / 300	15 / 120 / 60	1 / 60 / 10	MeOH/EtOH /iProp	0.5 / 10 / 2
DVB	65	300	220-300	180 / 280	15 / 120 / 60	1 / 60 / 10	MeOH/EtOH /iProp	0.5 / 10 / 2
DVB/Carbon WR	80	300	220-300	180 / 280	15 / 120 / 60	1 / 60 / 10	MeOH/EtOH /iProp	0.5 / 10 / 2

MeOH = Methanol EtOH = Ethanol
iProp = Iso-Propanol (2-Propanol) aliphatic HC = aliphatic hydrocarbons (example n-Hexane)

SPME Fiber Conditioning and Cleaning

- **Fiber Preconditioning**

Prior to analytical use, it is mandatory to precondition each fiber at a specified temperature in an inert gas phase environment. The life span of the fiber can be extended if the fiber is not unnecessarily preconditioned at maximum temperature.
Generally, it is recommended to precondition the fiber 20°C above the planned operating temperature, but not above the maximum allowed temperature of the specific SPME fiber.

- **Fiber Conditioning**

It is part of the analytical process to condition the fiber after thermal desorption of the analytes has been completed. This conditioning is a preparatory step for the next analytical run. It is necessary to eliminate all possible contaminants from the fiber which have not been desorbed and transferred to the GC column.
The large surface of the fiber can trap impurities from the ambient atmosphere if a fiber has been left in the open. Considering this, it is good recommended practice to run a blank a series of analytical samples.

- **Rinsing of Fibers**

It is possible to clean the fiber using an organic solvent, should the fiber be subject to inappropriate storage, e.g keeping the fiber in the open at ambient environment without protection for a prolonged period, or if obvious dust particles are sticking to the fiber. Do not use any other solvents than those mentioned here.

Other solvents can cause a swelling of the fiber which would lead to significant damage. It is important that a fiber is not cleaned mechanically by any means; do not touch the fiber with fingers, not even when wearing gloves. The cleaning process can be done manually by dipping the fiber into a container filled with the appropriate solvent or in an automated manner by defining a vial for cleaning.

- **General Remarks for Fiber Conditioning and Cleaning**

The life span of a fiber depends to a great degree on the field and type of application. Using the SPME technique, by inserting the fiber into a liquid with a high degree of matrix, the number of analyses can vary from a few to approximately 100 analyses. If the fiber is positioned in the headspace of a vial and avoids any contact with liquid and matrix, it is typically possible to run several hundred extractions.
It is not possible to visually judge the fiber quality if there are no obvious signs of major mechanical damage, such as a fiber fracture.
Any sign of staining, caused by a starting vitrification of the surface in case of a PDMS fiber, or signs of a yellowish discoloration in the case of a Polyacrylate fiber, does not give any indication on the remaining life span of the particular fiber.
As a rule of thumb, the life span of a fiber can be extended if its exposure to high temperatures is minimized. Do not exceed the maximum temperature for each fiber type.