MARS 6™
Method Note

Microwave Digestion of Silicon Carbide Fiber

Procedure

Weigh 0.1 g of the sample into the digestion vessel with a stir bar. Add 3 mL of HNO_3, 5.5 mL of H_2SO_4, and slowly add 2 mL of H_2O_2 dropwise. Then slowly and carefully add 2 mL of HF. Gently swirl the mixture and wait approximately 15 minutes before closing the vessel.

Notes

This application can only be run in the iPrep vessel.

This application requires stirring.

This procedure uses hydrofluoric acid. If it is necessary to complex the residual hydrofluoric acid or redissolve insoluble fluorides formed, an additional complexation step with boric acid or other neutralization step should be used. This procedure can be found in the One Touch Method note entitled “BoricAcid HF Neutralization”.

Recommended Equipment	Recommended Vessels	Reagents
MARS 6 iWave	iPrep	HNO_3 H_2SO_4 H_2O_2 HF

Max Sample Weight	Sample Type	Control Type	Method Type
0.1 g	Standard	Ramp to Temperature	Classic

Heating Program

Stage	Temp (°C)	*Ramp (mm:ss)	Hold (mm:ss)	Pressure (psi)	* Power (W)	Stirring
1	270	30:00	30:00	N/A	700-1800	High

* Ramp times and power may vary depending on the type and number of vessels.

Results

Sample was clear, colorless, and particle free upon dilution to 50 mL.

General Precaution

a) This procedure is a reference point for sample digestion using a CEM system and may need to be modified or changed to obtain the required results on your sample.
b) If using a vessel other than the recommended choice, adjust sample size and pressure limit to values appropriate for the vessel chosen.
c) Manual venting of CEM vessels should be performed when wearing hand/eye/body protection and when the vessel contents are at or below room temperature to avoid the potential for chemical burns. Always point the vent hole away from the operator.
d) If programming as One Touch, the ramp time and power will be automatically determined based on the number and type of vessels detected.
e) If using HF, follow restrictions listed in HF Addendum.