

Environment, Geology

Microwave Digestion PM10 Fraction of Suspended Particulate Matter

Summary Filter samples are digested in an acid solution using a Berghof microwave digestion system. The procedure is in accordance with DIN EN 14902.

Method

Equipment

	Type	Manufacturer
	Speedwave Xpert DAP-60	Berghof Products + Instruments GmbH Berghof Products + Instruments GmbH

Reagents

	Acid	Volume
	HNO ₃ (65%)	8.0 mL
	H ₂ O ₂ (30%)	2.0 mL

Procedure

Put a filter into the digestion vessel. Add 8.0 mL of HNO₃ and 2.0 mL of H₂O₂. Shake the mixture carefully or stir with a clean Teflon or glass bar. Wait at least 10min before closing the vessel. Heat in the microwave with the following program.

Temperature Program**	Step	T [°C]	Ta [min]	Time [min]	Power [%]*
	1	220	15	25	90
	2	50	1	10	
	3				
	4				
	5				

Note: To avoid foaming and splashing wait until the vessels have cooled to room temperature (about 20 min). Carefully open the digestion vessel in a fume hood wearing hand, eye and body protection since a large amount of gas will be produced during the digestion process.

Results Precipitates.

Note: This application serves only as a guide line and may need to be optimized for your sample.

*This application is outlined for 10 samples. Increase or decrease the power by 10% per sample, when using more or less sample. Minimum is 40% independent of the sample number.

