

# 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 Entry DAP-60K	Berghof Products + Instruments GmbH Berghof Products + Instruments GmbH

#### Reagents

	Acid	Volume
	HNO <sub>3</sub> (65%)	8.0 mL
	H <sub>2</sub> O <sub>2</sub> (30%)	2.0 mL

#### Procedure

Put a filter into the digestion vessel. Add 8.0 mL of HNO<sub>3</sub> and 2.0 mL of H<sub>2</sub>O<sub>2</sub>. 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	5	90
	2	220	0	20	
	3	75	1	10	
	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.

\*\* The program "DIN EN 14902, PM10" is preinstalled on the controller.

