



Step 1 of 2

**Procedure**

Weigh 0.5 g of the sample into the digestion vessel. Add 5 ml of HNO<sub>3</sub>, 5 ml of HF, and 5 ml of H<sub>2</sub>O. Gently swirl the mixture and wait approximately 15 minutes before closing the vessel.

After heating program in step 1, allow vessel to cool before proceeding with step 2.

**Notes**

The addition of Deionized Water may improve solubility of metal alloys.

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 should be used. This procedure can be found in the One Touch Method note entitled "Boric Acid HF Neutralization".

**Recommended Equipment**

MARS 6  
MARS 6 iWave

**Recommended Vessels**

EasyPrep  
EasyPrep Plus

**Reagents**

HNO<sub>3</sub>  
HF  
H<sub>2</sub>O

**Max Sample Weight**

0.5 g

**Sample Type**

Organic

**Control Type**

Ramp to Temperature

**Method Type**

One Touch

**Heating Program**

| Stage | Temp (°C) | *Ramp (mm:ss) | Hold (mm:ss) | Pressure (psi) | * Power (W) | Stirring |
|-------|-----------|---------------|--------------|----------------|-------------|----------|
| 1     | 200       | 15:00         | 15:00        | 800            | 900-1800    | Off      |

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



MARS 6™

## Method Note

Microwave Digestion of  
Metals Alloy (Co-Cr)

## Step 2 of 2

## Procedure

Cool, vent and open vessel after step 1. Add 4 ml of H<sub>2</sub>O<sub>2</sub>, (30%)

## Notes

## Reagents

H<sub>2</sub>O<sub>2</sub>

## Sample Type

Organic

## Control Type

Ramp to Temperature

## Method Type

One Touch

## Heating Program

| Stage | Temp (°C) | *Ramp (mm:ss) | Hold (mm:ss) | Pressure (psi) | * Power (W) | Stirring |
|-------|-----------|---------------|--------------|----------------|-------------|----------|
| 1     | 200       | 10:00         | 10:00        | 800            | 900-1800    | Off      |

\* 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

- 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.
- If using a vessel other than the recommended choice, adjust sample size and pressure limit to values appropriate for the vessel chosen.
- The control / reference vessel must contain the largest and most reactive sample.
- 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.