

Atomic absorption spectrometry

_____ (1) cathode lamps are a high-intensity, stable-light source that emits the element-specific spectral lines required for atomic absorption spectrometry.

A flame AAS instrument must never be left _____ (2) while the flame is burning.

Install and remove the burner.

If you cannot _____ (3) flame after two attempts, it is likely that there is some problem with the _____ (4), ignition system, or gas supplies.

Clean external and _____ (5) surfaces of the burner.

Inspect the gas supply hoses regularly, and replace any that are _____ (6) or damaged.

We recommend that all gas supply hoses are replaced every four years.

Periodically check the external drain tube.

Syringe purge

A command is provided in the system software to purge the syringe to remove any _____ (7) and contamination before use.

Capillary tip alignment

The autosampler capillary tip must be _____ (8) with the cuvette injection hole before use, and the capillary tip depth adjustment set correctly so that the sample is injected properly onto the floor of the cuvette.

The operating system of electrothermal atomisation in a graphite furnace _____ (9) of three phases:

The drying phase, at 100 °C, to remove the solvent

The _____ (10), or pyrolysis phase, at a higher temperature, to remove organic matrix

The third phase atomisation, to convert the residue into an atomic vapour

Read the text and answer the questions:

- 1 What kind of spectral lines do you need for atomic absorption spectrometry?
- 2 What are the possible reasons, if you cannot ignite flame?
- 3 Do you have to change the gas supply hose every year?
- 4 When do you have to purge the syringe? Why?
- 5 Where do you inject the sample? How is this made?
- 6 How many phases are there in electrothermal atomization? What are they?

Vocabulary warm-up:

hollow	light source	unattended	ignite	vapour
burn	cracked	damaged	capillary tip	syringe purge
burner				
hose	bubbles	alignment	solvent	
		replace	convert	ashing
depth		adjustment	graphite furnace	

Definitions – fill in the missing word:

- 1 If a tree trunk has no wood in it, it is _____
- 2 Keep an eye on the fire, don't leave it _____
- 3 The part of a cooker or a stove that produces a flame is called a/an _____
- 4 A long tube made of rubber, plastic is called a/an _____
- 5 A plastic tube with a long needle is a/an _____
- 6 _____ is the extreme part of a capillary.
- 7 _____ a mass of very small drops of liquid in the air
- 8 _____ is a process where a substance is converted into ashes.
- 9 A ball of air or gas in a liquid is called a/an _____
- 10 _____ provides light.