



2018 AP[®] CHEMISTRY FREE-RESPONSE QUESTIONS

Sulfur atom = 	Carbon atom = 	Oxygen atom = 
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Compound	Molecular Structure	Boiling Point at 1 atm (K)
CS ₂		319
COS		223

4. The table above gives the molecular structures and boiling points for the compounds CS₂ and COS.
- (a) In terms of the types and relative strengths of all the intermolecular forces in each compound, explain why the boiling point of CS₂(*l*) is higher than that of COS(*l*).
- (b) A 10.0 g sample of CS₂(*l*) is put in an evacuated 5.0 L rigid container. The container is sealed and heated to 325 K, at which temperature all of the CS₂(*l*) has vaporized. What is the pressure in the container once all of the CS₂(*l*) has vaporized?