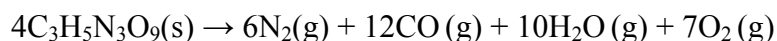


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| CHAPTER 4 | Dalton's Law of Partial Pressures Problems | BLM 4.2.6 |
| ASSESSMENT | | |
| | | |

1. A gas mixture consists of 42 percent nitrogen, 25 percent oxygen, and 33 percent carbon dioxide. What is the partial pressure of each of these gases if the mixture has a pressure of 250 kPa?

2. Alfred Nobel made his fortune from his invention of dynamite, used originally for mining. It is said that he used to conduct his experiments on a boat in a lake so if there were any "accidents", no one but he would be killed or injured. The active ingredient in dynamite is nitroglycerin, which decomposes according to the following equation:



In an experiment, it was found that the oxygen gas exerted a partial pressure of 90 kPa. What is the partial pressure of each of the gases and the total pressure of the mixture?

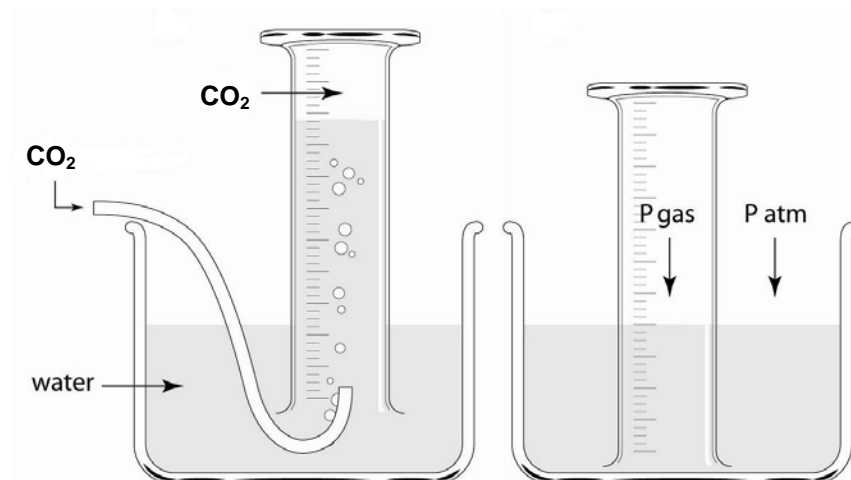
3. Carbon dioxide can be produced in small quantities in a laboratory by thermally decomposing calcium carbonate:



A 250 mL sample of gas is collected by water displacement on a day when the temperature is 21 °C and the atmospheric pressure is 101.5 kPa.

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| CHAPTER 4 | Dalton's Law of Partial Pressures Problems (continued) | BLM 4.2.6 |
| ASSESSMENT | | |
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3. (continued)



(a) Referring to the table of partial pressures of water vapour in your textbook, what is the partial pressure of the carbon dioxide in the sample?

(b) How many moles of carbon dioxide have been collected?