

Making ethyne

An ethyne molecule



- Ethyne is prepared by the reaction of water with a substance called calcium carbide,  $\text{CaC}_2$ .
- cannot be found in a pure state and it is usually contaminated with sulphur and phosphorus. These gases can be removed by bubbling the gas through acidified copper sulphate.

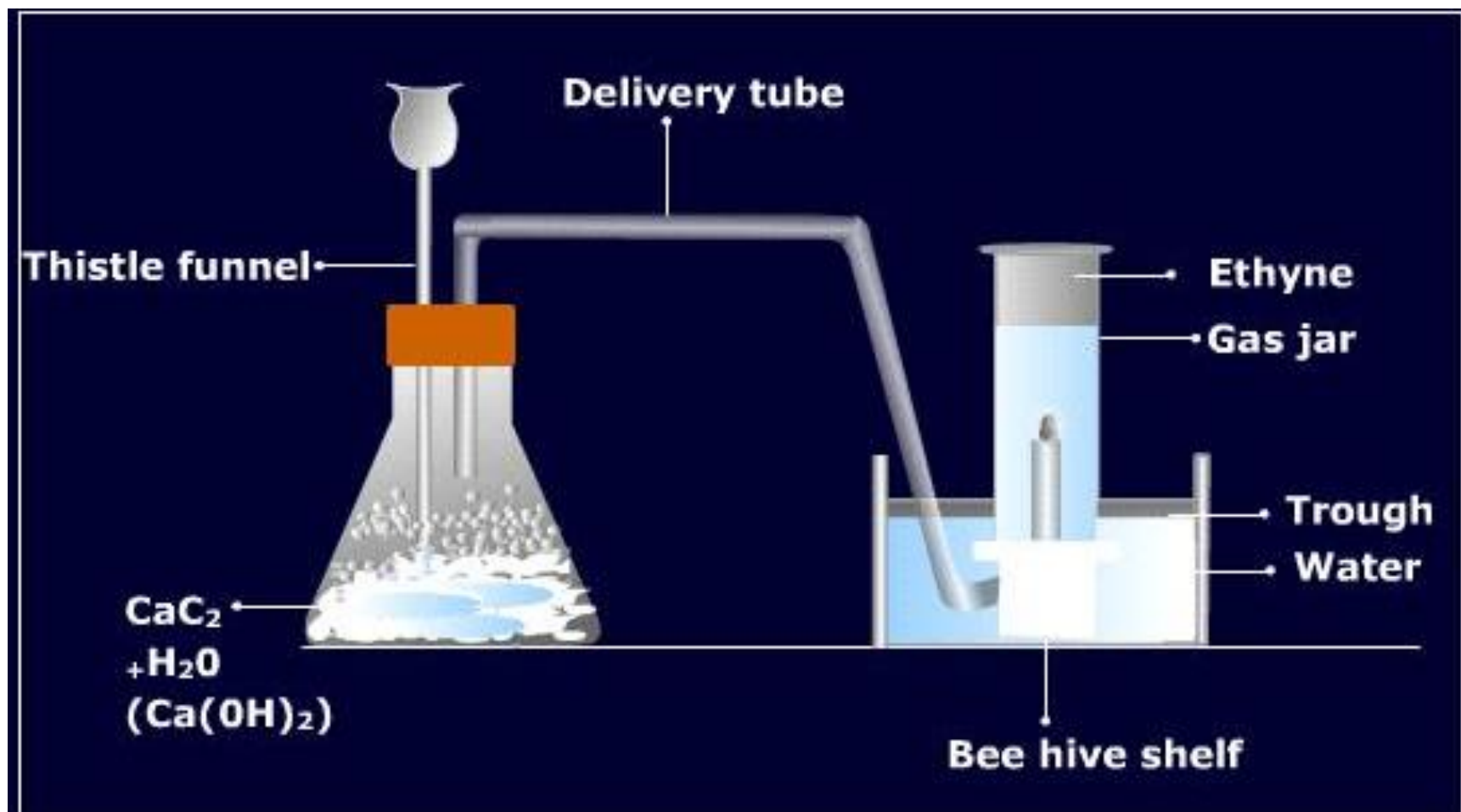
# How is Calcium Carbide made?

- Ethyne is produced on an industrial scale from calcium carbonate (limestone) and coal:
- $\text{CaO} + 3\text{C} \rightarrow \text{CaC}_2 + \text{CO}$
- Above info Not needed for LC exam

# Safety precautions

- Ethyne can cause an explosive mixture with air so combusting ethyne gas must be done at the back of the class away from the apparatus.

This apparatus is missing copper sulphate see page 313 of textbook



## Observations

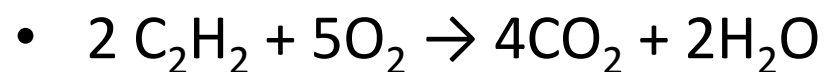
- Is grey-black solid
- Fizzing takes place in the flask and a white solid is formed.
- Bubbles of gas start to collect in the gas jar.
- The flask becomes warm-exothermic reaction

## Explanation

- Fizzing due to ethyne gas
- White substance formed is calcium hydroxide
- Heat is due to exothermic reaction

# Tests

## Combustion



## saturation

- Potassium permanganate