

ANKIN

I. ĐỊNH NGHĨA

Ankin là hiđrocacbon chưa no mạch hở, trong phân tử có một nối ba, còn lại là nối đơn.

II. CÔNG THỨC VÀ DÃY ĐỒNG ĐẲNG



Khi cho n tăng dần sẽ được dãy đồng đẳng của axetilen

$n = 2$ C_2H_2 hay $CH \equiv CH$ etin (axetilen)

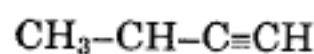
$n = 3$ C_3H_4 hay $CH_3-C \equiv CH$ propin

III. GỌI TÊN

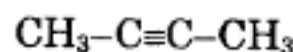
1. Cách 1: Tương tự như anken:



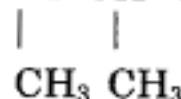
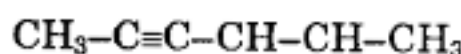
but-1-in



isopentin



but-2-in

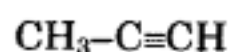


4, 5-dimethylhex-2-in

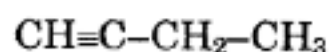
2. Cách 2: Không đánh số mạch cacbon mà gọi theo công thức sau:

Tên gốc ankyl + axetilen

Ví dụ:



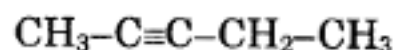
metylaxetilen



etylaxetilen



dimetylaxetilen



etylmetylaxetilen



vinylaxetilen

Chất tiêu biểu cho ankin là axetilen, là chất khí không màu không mùi, không tan trong nước nhưng tan nhiều trong axeton.

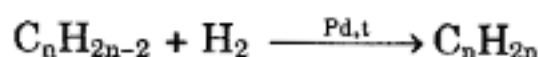
IV. HÓA TÍNH

1. Phản ứng cộng

a. Cộng hidro

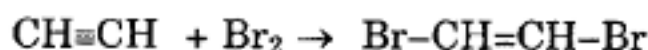


Tổng quát

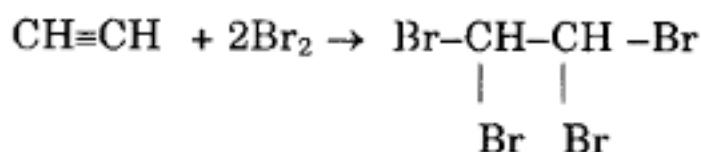


b. Cộng brom

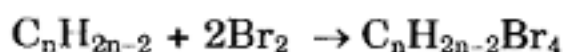
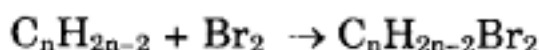
Phản ứng này làm mất màu đỏ nâu của dung dịch Br_2 .



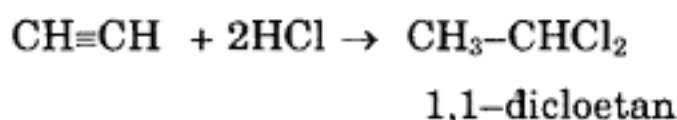
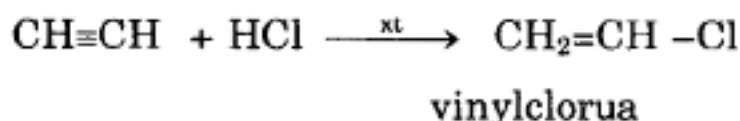
1, 2 - dibrometen



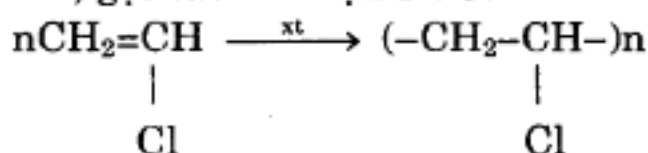
Tổng quát



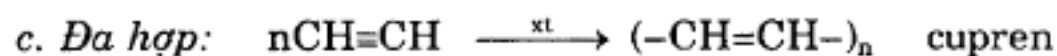
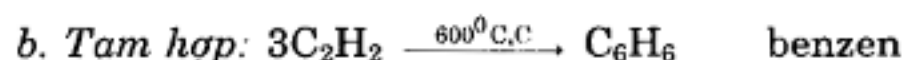
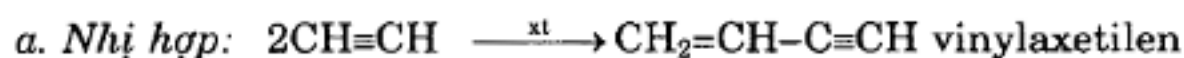
c. Cộng HCl



Khi đem trùng hợp vinyl clorua thì được nhựa polivinyl clorua, gọi tắt là nhựa PVC.

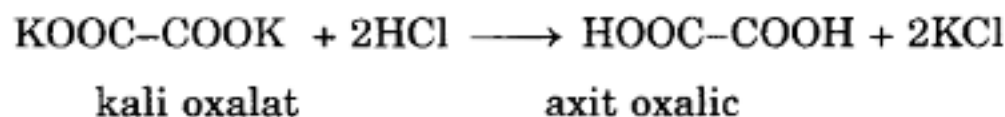
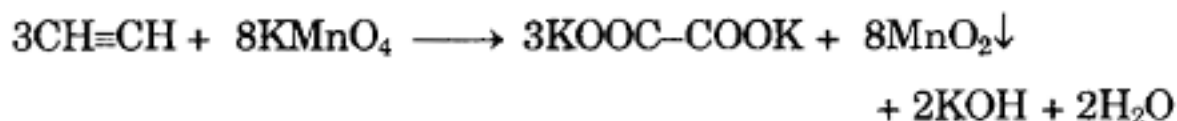


2. Phản ứng trùng hợp



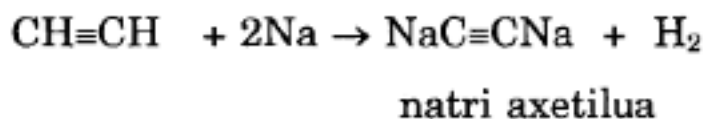
3. Phản ứng oxi hóa

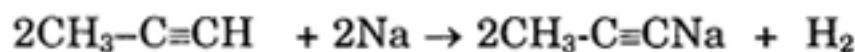
Làm mất màu dung dịch thuốc tím (KMnO_4), cho ra nhiều sản phẩm, chẳng hạn như:



4. Phản ứng thế ion kim loại

a. Với natri





natri metylaxetilua

b. Với dung dịch $\text{AgNO}_3/\text{NH}_3$

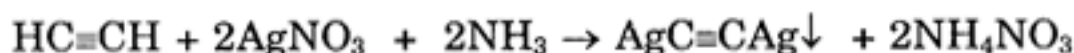
Cho ra kết tủa vàng với những chất có cacbon nối ba đầu mạch.

- Với axetilen



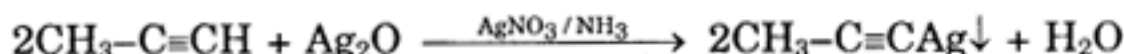
bạc axetilua

Viết rõ ràng:



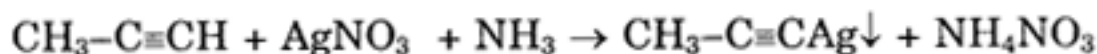
- Với đồng đẳng

Viết gọn:

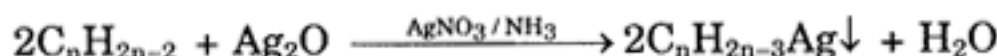


bạc metyl axetilua

Viết rõ ràng:

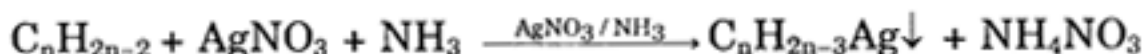


Tổng quát



($n \geq 3$)

Hoặc



($n \geq 3$)

c. Với $\text{CuCl}/\text{dd NH}_3$ cho kết tủa đỏ

– Cho ra kết tủa đỏ

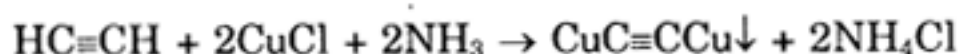
- Với axetilen

Viết thu gọn:



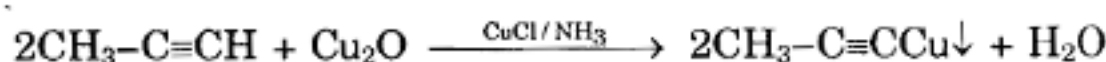
đồng axetilua

Viết rõ ràng:

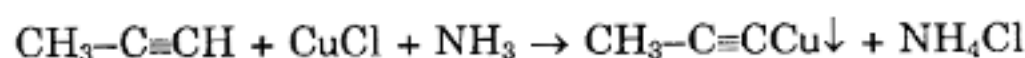


- Với đồng đẳng

Viết thu gọn:

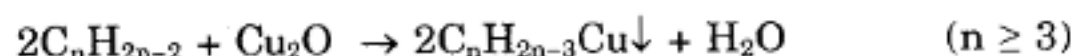


Viết rõ ràng:

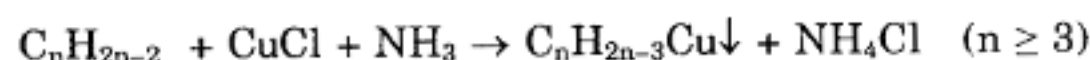


đồng metyl axetilua

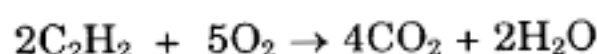
Tổng quát



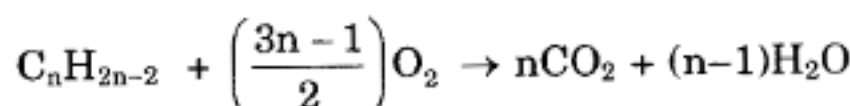
Hoặc



5. Phản ứng cháy



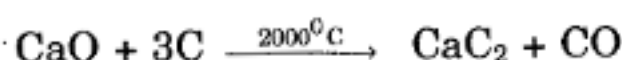
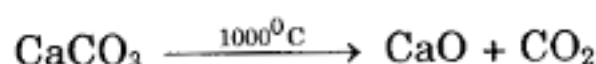
Tổng quát:



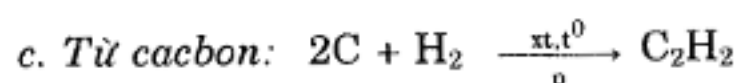
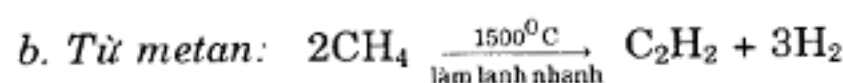
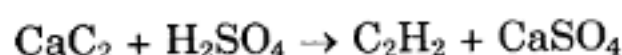
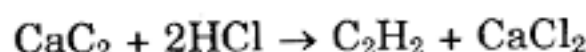
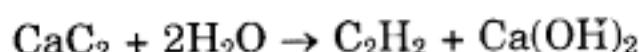
IV. ĐIỀU CHẾ

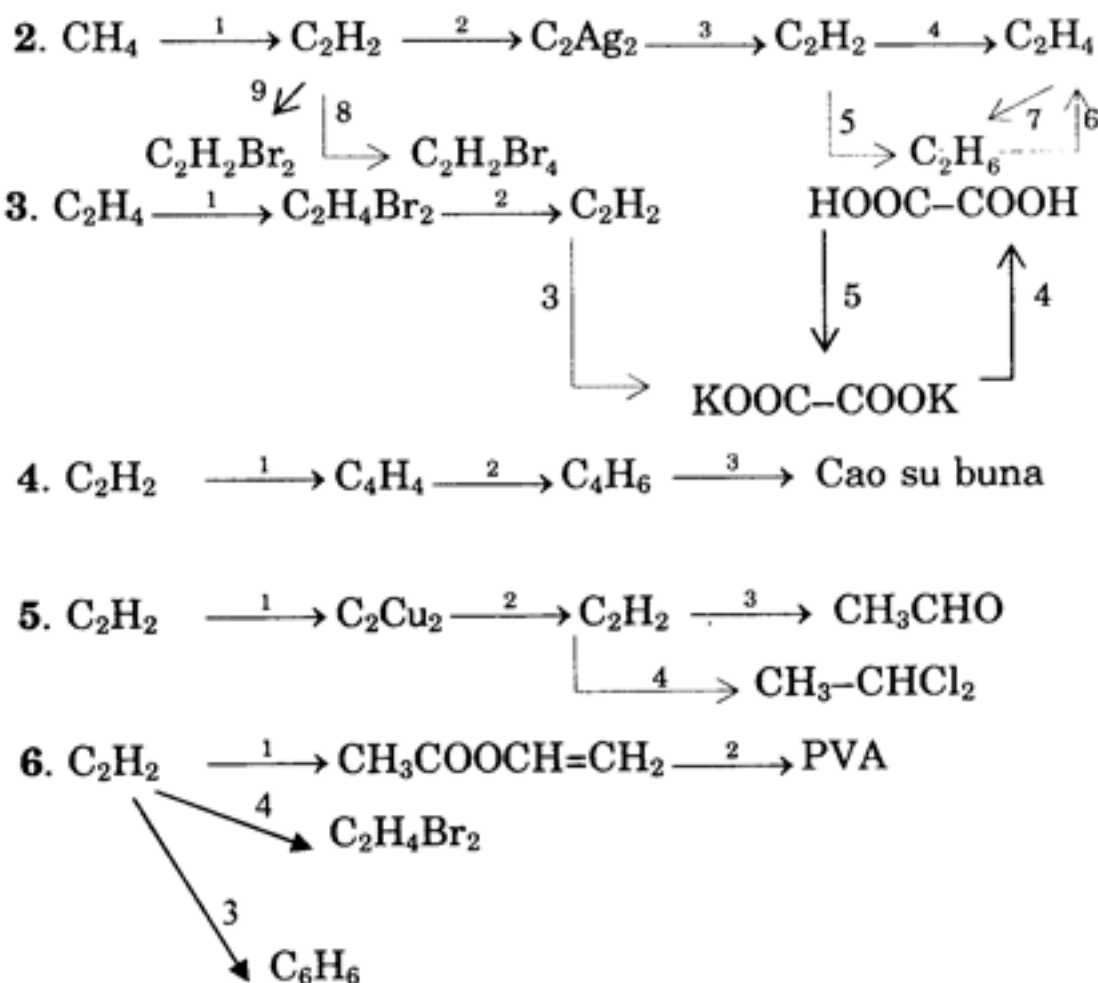
1. Axetilen

a. Từ đá vôi

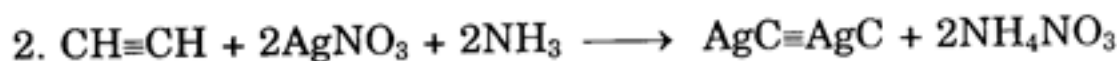
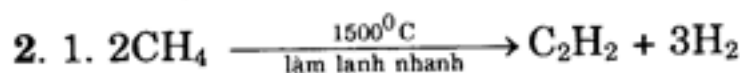
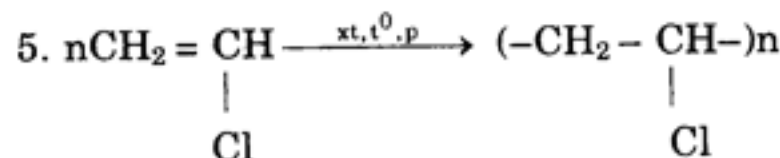
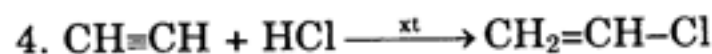
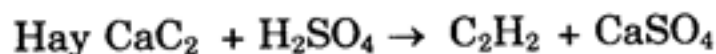
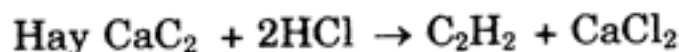
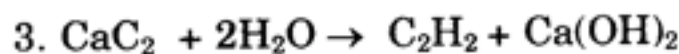
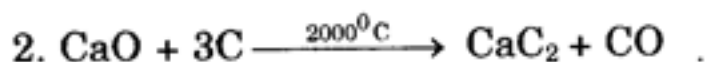
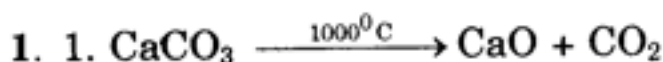


Cho CaC_2 (canxi cacbua – đất đèn) tác dụng H_2O hoặc dung dịch HCl hoặc dung dịch H_2SO_4 sẽ thu được axetilen.





GIẢI



Hay viết thu gọn:

