

HYDROCARBONS

TEST

Hydrocarbons, General 3

Date:

- To burn 20 L of a mixture of C_2H_4 and C_3H_6 gases, 70 liters of O_2 is needed under the same conditions. What is the volume of C_2H_4 in the mixture?
A) 5 B) 7.5 C) 10 D) 12.5 E) 15
- What is the hydrocarbon which forms a white precipitate with ammoniacal $AgNO_3$ solution and decolorizes bromine solution?
A) CH_4 B) C_2H_6 C) C_2H_4 D) C_2H_2 E) C_3H_6
- A hydrocarbon when 0.25 moles is burned it produces 16.8 L of CO_2 at STP. Also 1 mole of this hydrocarbon becomes saturated with 2 moles of H_2 which of the following?
A) $CH_3 - CH = CH_2$
B) $CH_3 - CH_2 = CH - CH_3$
C) $CH_3 - C \equiv C - H$
D) $CH_2 = CH - CH = CH_2$
E) $CH_3 - CH_2 - CH_3$
- How many liters of air are required to burn 7 g of C_2H_4 gas under STP?
A) 67.2 B) 84.0 C) 89.6 D) 112.0 E) 134.4
- 10 cm^3 of a hydrocarbon reacts with 40 cm^3 of O_2 and forms 20 cm^3 of water vapor at the same conditions. What is the formula for this hydrocarbon?
A) CH_4 B) C_2H_6 C) C_2H_4 D) C_3H_4 E) C_3H_6
- How many liters of O_2 at STP are required to burn C_2H_2 obtained from 32g of 80% pure CaC_2 ?
A) 11.2 B) 22.4 C) 33.6 D) 44.8 E) 67.2
- 10 moles of O_2 are required to burn a mixture containing an equal number of moles of CH_4 and C_2H_4 gases. What is the weight of the mixture?
A) 11 B) 44 C) 88 D) 110 E) 280
- 2g of H_2 gas is required to saturate 33.6 L of a mixture of C_2H_2 and C_2H_6 gases at STP. How many grams is this gas mixture?
A) 13 B) 15 C) 30 D) 37 E) 43
- The ratio of the mass of the H_2O produced by the combustion of an alkyne to the mass of the reacted alkyne is 9/10. What volume of CO_2 gas at STP is produced by the combustion of 0.1 mole of this alkyne?
A) 2.24 B) 4.48 C) 6.72 D) 8.96 E) 11.2
- What is the coefficient of O_2 in the combustion reaction of a hydrocarbon having the general formula C_nH_{2n-2} ?
A) $n-1$ B) $(3n-1)/2$ C) $3n+1$ D) $3n-1$ E) $(2n-1)/2$
- How many isomers does the compound $C_2H_2Br_2$ have?
A) 1 B) 2 C) 3 D) 4 E) 5
- How many grams of 20% bromine solution can be decolorized by ethylene produced from 4.6g of C_2H_5OH ?
A) 16 B) 40 C) 80 D) 120 E) 160
- 0.2 mole of an alkyl bromide weighs 19g. This alkyl bromide is used in the production of an alkane by Wurtz synthesis. If 1 mole of this alkane is burned, how many moles of CO_2 can be obtained?
A) 1 B) 2 C) 3 D) 4 E) 5
- How many liters of air are needed at STP to burn acetylene produced from 6.4g of CaC_2 ?
A) 5.6 B) 11.2 C) 22.4 D) 28.0 E) 56.0
- How many π bonds are present in a vinyl acetylene molecule?
A) 1 B) 2 C) 3 D) 4 E) 6