

Chemistry chapters 16 and 17 Practice Test

Know and be able to define the following vocabulary terms:

activation energy

calorimeter

catalyst

chemical potential energy

energy

heat

inhibitor

joule

law of conservation of energy

molar enthalpy of fusion

molar enthalpy of vaporization

rate law

specific heat

specific rate law constant

thermochemical equation

Given the reaction $A + B \rightarrow AB + \text{energy}$, would the sign of the ΔH be positive or negative?

What is the difference between Cal and cal?

What is the specific heat capacity of water?

Generally, what two factors determine if a chemical substance will form when two separate substances collide?

How will the change of temperature affect a chemical reaction?

What effect will doubling the concentration of A have on a reaction rate if the substance is said to be first order relative to the concentration of A? On a reaction said to be second order?

In the rate law expression $\text{Rate} = k[A]^2[B]$, what is the order of the reaction relative to B? What is the overall rate order?

24.5 grams of methanol (CH_3OH) is melted in a small container. Given that the ΔH_{fus} for methanol is 3.22 kJ/mol, how much energy entered the methanol?

From the following reaction, determine the mass of nitrogen that could be vaporized by adding 42.0 kJ to a given sample of liquid nitrogen .



A small portion of a given sample of food is burned completely in a calorimeter that contains 1250 g of water. What was the energy content of the food if the water heated from 20.0°C to 91.5°C?

(sp.ht. H₂O = 4.18 j/g°C)

Use the table below to indicate the rate orders for the substances A and B.

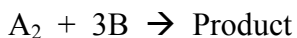
Initial [A]	Initial [B]	Initial rate (mol/L min)
0.10	0.10	2×10^{-4}
0.20	0.10	2×10^{-4}
0.20	0.20	4×10^{-4}

Rate order relative to A _____

Rate order relative to B _____

Rate law expression for this reaction _____

Use the following information to determine the actual rate rate law expression for the given reaction.



Initial [A]	Initial [B]	Initial rate (mol/L min)
1.0	1.0	6×10^{-2}
2.0	1.0	24×10^{-2}
2.0	2.0	48×10^{-2}

Rate law expression _____