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Chemistry  
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Name: \_\_\_\_\_ Seat #: \_\_\_\_\_

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## PHC Chapter 18 *Crossword Puzzle*

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## ACROSS

- 1 A state where opposing forces are equal in strength or where opposite processes occur at equal rates
- 9 Increasing the number of gas \_\_\_\_\_ in a container will increase the pressure.
- 11 abbreviation for a meal that soldiers can heat up without needing fire, using the exothermic reaction of water and magnesium or magnesium/iron
- 14 one hundred protons
- 15 In order for a reaction to \_\_\_\_\_, reactant molecules must bump into each other hard enough and facing the right directions.
- 17 the entity that many people believe wrote the true laws of physics
- 18 If you \_\_\_\_\_ a system of chemicals at equilibrium, they will do whatever it takes to un-do what you have done to them, but only partially.
- 19 Your outer layer of skin is called your \_\_\_\_\_ dermis. It is this layer that gets smacked by countless air molecules every second.
- 20 device that uses an instantaneous, exothermic reaction to propel a projectile forward at a high speed
- 22 mechanism whose strength helps to determine the rate at which a car can cover distance over time
- 25 The higher the concentration of the \_\_\_\_\_, the faster the reaction rate.
- 29 The smaller the \_\_\_\_\_ of the reactant particles, the more surface area they have in total, and, therefore, the faster they react.
- 30 between iron and nickel
- 31 the second heaviest member of the oxygen family
- 32 vanadium's big sister
- 35 the continent where Henri LeChatelier lived and worked
- 36 The higher the \_\_\_\_\_, the more often reactant molecules collide, and the harder they smack each other.
- 38 mostly inert gas, the heaviest of the noble gases
- 40 Equilibrium is a \_\_\_\_\_ state where the amounts of each chemical does not change over time.
- 42 chemical that reduces the activation energy requirement for a reaction, thereby making it go faster
- 44 If you make a \_\_\_\_\_ of reactant consumed versus time, the rate of the reaction will be the slope.
- 47 a form of water in which reactions occur so slowly as to be almost stopped completely
- 50 bovine utterance
- 54 Reactant molecules can only collide with the \_\_\_\_\_ surface of another reactant's particles, so it helps if they're as small as possible to maximize surface area.
- 55 the way you're facing, the way you're pointing, the way you're rotated relative to other objects
- 56 a tiny person of young age
- 57 transition element given for coming in second; it's a very good conductor of electricity
- 58 material from the earth from which economically useful amounts of metal can be extracted
- 59 when two things bump into each other, like, let's say, two reactant molecules
- 60 One way for a disturbed chemical system to reverse an increase in \_\_\_\_\_ is to do whatever it takes to decrease the number of gas molecules.

## DOWN

- 1 Reactant molecules must hit each other with enough \_\_\_\_\_ to break old bonds or new ones can't form.
- 2 Whatever is made during the forward reaction is \_\_\_\_\_ during the reverse reaction.
- 3 another name for sodium hydroxide, a strong base that is handy for unclogging drains
- 4 amount of reactants consumed divided by time elapsed
- 5 abbreviation for 0.001 meter
- 6 It's determined by number of protons.
- 7 when a sound wave bounces back to its source

- 8 0.001 liter
- 10 where reactant molecules come into contact with each other . . . you need lots of this kind of area to have a high reaction rate
- 12 \_\_\_\_\_ reactants react relatively quickly because their molecules are moving relatively fast.
- 13 one of the most common elements in the earth's core, second only to iron
- 16 amount divided by volume, a thing that affects reaction rate by increasing crowding and, therefore, collisions
- 18 You have a cartilaginous \_\_\_\_\_ between every two adjacent vertebrae in your backbone.
- 20 activation energy is required to loosen the \_\_\_\_\_ that atoms have on each other so the activated complex can form.
- 21 The speed with which reactants turn into \_\_\_\_\_ is known as "reaction rate".
- 23 formula for the hydroxide ion, the essence of an Arrhenius base
- 24 the densest element
- 26 If a system \_\_\_\_\_ energy, it is doing something endothermic.
- 27 rate = change divided by \_\_\_\_\_ elapsed
- 28 Decomposition reactions in this organ are sped up by enzymes that cooperate with hydrochloric acid
- 33 Greek letter used to represent change. Rate = this letter divided by time elapsed.
- 34 the most famous alkali metal
- 37 A bunsen burner is not a \_\_\_\_\_, and neither is a beaker or a bottle of acid. You must be serious during labs, not playful.
- 39 Kelvin temperature = \_\_\_\_\_ molecular kinetic energy.
- 41 You need to get this under control if you're going to be an effective part of a team or any other kind of relationship with other people
- 43 this element has an entire horizontal row of elements named after it. They sit on top of the actinides.
- 45 molecular speed is proportional to the square \_\_\_\_\_ of kinetic energy
- 46 An inhibitor might " \_\_\_\_\_ " a catalyst, reducing its ability to speed up a reaction.
- 48 Arsenic, cyanide, mercury, and lead are all highly \_\_\_\_\_ to human beings.
- 49 Oxygen is very famous for its ability to \_\_\_\_\_ electrons from atoms of other elements.
- 50 he pities the fool
- 51 A specialized enzyme helps the two strands of a DNA double-helix to \_\_\_\_\_ from each other so that its nucleotide sequence can be read by yet another enzyme.
- 52 If a reactant is made of \_\_\_\_\_ particles, it will tend to react slowly. To speed up the reaction, more surface area can help.
- 53 moves forward at a low rate due to injury
- 57 Reactants \_\_\_\_\_ turned into products either quickly or slowly, depending upon reaction rate factors.
- 58 abbreviation for where surgeons cut you up and sew you back together