

PROPERTIES AND CHANGES OF MATTER & LAW OF CONSERVATION OF MASS

<p>PHYSICAL <u>PROPERTIES</u>:</p> <p>_____</p> <p>_____</p> <p><i>Extensive property:</i> depends on the amount of substance. Ex: Volume, Mass</p> <p><i>Intensive property:</i> does NOT depend on the amount of the substance. Ex: Color, luster, malleability, ductility, brittleness, odor, taste, density, texture, hardness, conductivity, boiling/melting point, solubility</p>	<p>CHEMICAL <u>PROPERTIES</u>:</p> <p>_____</p> <p>_____</p> <p>-Determines whether or not it will react chemically; depends on how easily it is for them to gain or loss electrons. -Grouped together in periodic table based on chemical properties. Ex: Reactivity, combustibility, flammability, oxidation (rust, tarnish)</p>
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Properties of Matter Practice

Write *C* or *P* to indicate whether each of the following is a chemical or physical property.

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| 1) ___ Antioxidants are used as food preservatives in margarine. | 6) ___ Copper is ductile and can be used in wiring. |
| 2) ___ White phosphorous glows in the dark. | 7) ___ Gallium has a melting point of about 86° Fahrenheit. |
| 3) ___ White phosphorous ignites easily. | 8) ___ Iron rusts when it is exposed to air. |
| 4) ___ Sugar can dissolve in water. | 9) ___ Diamonds are the hardest mineral. |
| 5) ___ Gold does not react with water. | 10) ___ Silver is a good conductor of electricity. |

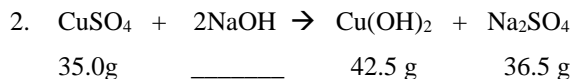
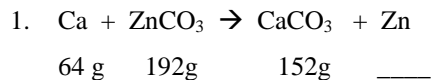
<p>PHYSICAL <u>CHANGES</u>:</p> <p>_____</p> <p>_____</p> <p>-Occurs when the APPEARANCE of the substance changes, but chemically the substance is still the same. -Physical changes include ALL phase changes (melting, boiling, freezing, evaporating, etc.)</p> <p>Ex: Phase changes (solid, liquid, gas) Substance dissolving</p>	<p>CHEMICAL <u>CHANGES</u>:</p> <p>_____</p> <p>_____</p> <p>-Occurs when a chemical reaction takes place; NEW substance formed with different properties. -Energy is always involved.</p> <p><u>4 SIGNS OF CHEMICAL CHANGES:</u></p> <ol style="list-style-type: none"> 1. solid precipitate formed 2. heat or light produced 3. unexpected gas production 4. unexpected color change <p style="text-align: right; font-weight: bold; font-size: small;">IRREVERSIBLE!!</p>
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Changes of Matter Practice

Examine the list of changes below. Write *C* before each chemical change. Write *P* before each physical change:

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|---------------------------------------|---|
| 1. ___ erosion of a riverbed by water | 9. ___ salt dissolving into water |
| 2. ___ leaves changing color | 10. ___ vinegar is mixed with baking soda. |
| 3. ___ carving a statue out of marble | 11. ___ cooking waffles |
| 4. ___ sanding a piece of wood | 12. ___ lighting a match |
| 5. ___ ice cream melting | 13. ___ mothballs disappear over time |
| 6. ___ fireworks exploding | 14. ___ plants undergo photosynthesis |
| 7. ___ baking a cake | 15. ___ a drop of hydrochloric acid on marble |
| 8. ___ chocolate melting | |

Law of Conservation of Mass: _____



HOMEWORK: Physical vs. Chemical Changes/ Properties & Law of Conservation of Mass

Classify the following as being a physical (P) or chemical (C) PROPERTY:

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|---|---|
| 1. blue color _____ | 6. Sour taste _____ |
| 2. density _____ | 7. Melting point _____ |
| 3. flammability _____ | 8. luster _____ |
| 4. reacts acid to form H_2 _____ | 9. Reacts with a base to form water _____ |
| 5. support combustion _____ | 10. Can neutralize a base _____ |

Classify the following as being a physical (P) or chemical (C) CHANGE:

- | | |
|--|---|
| 11. sodium hydroxide dissolves in water _____ | 16. Hydrochloric acid reacts with zinc _____ |
| 12. water is heated and changed to steam _____ | 17. A pellet of sodium is sliced in two _____ |
| 13. iron rusts _____ | 18. Ice melting _____ |
| 14. wood rotting _____ | 19. Milk sours _____ |
| 15. wood is being cut _____ | 20. Cooking pancake _____ |

Work out the following Law of Conservation of Mass problems:

