

Basis of Science Review

Name: _____
 Period: _____

Which of these two chemicals is more hazardous to your health? <i>Chloroform (higher #)</i> Which one is more flammable? <i>Acetone</i>	At-a-Glance Acetone Health — 1 Flammability — 3 Reactivity — 2 Exposure — 1 Storage — 3	At-a-Glance Chloroform Health — 2 Flammability — 0 Reactivity — 1 Exposure — 2 Storage — 2	First Aid Measures—Chloroform Call a physician, seek medical attention for further treatment, observation and support after first aid. Inhalation: Remove to fresh air at once. If breathing has stopped give artificial respiration immediately. Eye: Immediately flush with fresh water for 15 minutes. External: Wash continuously with fresh water for 15 minutes. Internal: Induce vomiting. After vomiting, give mixture of 2 Tbs. of activated charcoal mixed with one cup of water. Call a physician or poison control at once.
	What should you wear in the lab to protect against chemical spills? <i>apron</i> What should you wear to protect your eyes against splashing chemicals? <i>goggles</i> What should you wear to protect your feet from chemicals and falling objects? <i>closed-toed shoes</i>		

*Use the MSDS information above to answer the following:
 Which section tells you what to do if someone breathed in chloroform? *Inhalation (think "inhale")*
 Which section if someone drinks it? *Internal**

Can this statement be supported by the scientific method?
 "I chocolate chip is the best ice cream flavor." *No*
 Why? *It is an opinion.*

Use the Scientific Method to figure out if a substance is a liquid or solid. (The first step is done for you.)
Step 1: Observe: *the substance changes shape.*
Step 2: *hypoth. : the substance is a liq.*
Step 3: *Exp. : Does it change volume? Data: No*
Step 4: *Concl: substance must be a liquid.*

Liquid	Color	Burns?	Volume	Reacts with Baking Soda?
A	Clear	<i>No</i>	35 mL	<i>Yes</i>
B	Clear	Yes	12 mL	No
C	Clear	<i>No</i>	46 mL	<i>Yes</i>
D	Clear	No	88 mL	No

Make a reasonable conclusion from the above data table.
liquid A+C are probably the same, (volume doesn't matter.)

Object A: 1.8 cm
 Object B: 2.8 cm

2.1 mL

Remember: 100cm = 1m so 1cm = .01m

How many millimeters is object A? <i>18 mm</i>	How many millimeters is object B? <i>28 mm</i>
How many centimeters is object A? <i>1.8 cm</i>	How many centimeters is object B? <i>2.8 cm</i>
How many meters is object A? <i>.018 m</i>	How many meters is object B? <i>.028 m</i>

341.7 g (don't forget units!)

2.1 mL

How many mL of water is there in the graduated cylinder?
2.1 mL

What is the curve of water called?
meniscus
remember to read it at the bottom.

1 mL

2 mL

Which of the two cylinders above is more precise?
The right one.
 Why? *each mark = 0.1 mL. The left one, each mark = 2 mL.*

<p>How is a solid different from a liquid? liquids change shapes, solids don't</p>	<p>How is a liquid similar to (like) a gas? Both liquids + gases can change shapes [take the shape of whatever container their in]</p>	<p>The temperature at which a solid turns to liquid is called: melting point</p>
<p>How is a solid similar to (like) a liquid? Both retain (keep) their volume,</p>	<p>What causes a substance to change phase? add or take away energy. Do this by changing temperature,</p>	<p>The temperature at which a liquid turns to a gas is called: boiling pnt</p>
<p>How is a liquid different from a gas? Gases take the volume of their container. (Think of tires: you can compress, <u>force</u> air into the tire.)</p>	<p>When a substance changes phase, is this a <u>physical</u> or chemical change? solid water (ice) is still H₂O → the same chemical substance,</p>	<p>The temperature at which a gas turns to liquid: condensation point</p>
		<p>The temperature at which a liquid turns to a solid: freezing point</p>
		<p>When a solid turns straight to a gas is called: sublimation.</p>
		<p>At what temperature does water melt? 0°C (32°F) At what temperature does water boil? 100°C (212°F)</p>

<p>Mixture (M) versus Substance (S) (non-mixture):</p> <p>Salt Water <u>M</u> Chicken Soup <u>M</u> Water <u>S</u> Salt <u>S</u> Silver <u>S</u> Chex Mix <u>M</u></p>	<p>1. Substance or non-mixture <u>f</u> 2. Mixture <u>2</u> 3. Heterogeneous Mixture <u>b</u> 4. Matter <u>g</u> 5. Element <u>d</u> 6. Homogeneous Mixture <u>c</u> 7. Compound <u>e</u></p>	<p><input checked="" type="checkbox"/> Made up of two types of matter that can be physically separated. <input checked="" type="checkbox"/> Two samples might not be the same. <input checked="" type="checkbox"/> Two samples will have the same makeup. <input checked="" type="checkbox"/> Has only one kind of atom in the sample. <input checked="" type="checkbox"/> Contains two kinds of atoms that <i>cannot</i> be physically separated. <input checked="" type="checkbox"/> Cannot be separated by physical means. <input checked="" type="checkbox"/> A classification of anything that has mass and takes up space.</p>
<p>Homogenous (Ho) versus Heterogenous (He)</p> <p>Salt Water <u>Ho</u> Chicken Soup <u>He</u> Tomato Soup <u>Ho</u> Plain Jello <u>Ho</u> Jello with Fruit <u>He</u> Chex Mix <u>He</u></p>		
<p>What do we call things that can be felt and seen, but we cannot touch and has no mass? <u>energy</u></p>	<p>What do we call things that can be felt and seen, but we cannot touch and has no mass? <u>energy (sorry - repeat)</u></p>	

<p>Draw the metric prefixes chart here:</p> <p style="text-align: center;">1,000,000 M X X K X X $\frac{M}{g}$ X c m X X μ 1,000,000</p>	<p>Convert the following</p> <p>3.2 kilometers = <u>3,200</u> meters 0.23 centimeters = <u>2,300</u> micrometers 0.12 liter = <u>120</u> milliliters 2500 milliliters = <u>2.5</u> liters 4500 grams = <u>4.5</u> kilograms 9 kilograms = <u>9,000</u> grams 54 megaliters = <u>5,400,000,000</u> centiliters</p>
<p>What is the correct order <u>shortest to longest</u> ^{smallest biggest}</p> <p>Kilogram milligram Megagram gram centimeter microgram</p> <p><u>micro - milli - centi - gram Kilo - Mega -</u></p>	
<p>Which is bigger?</p> <p><u>Mega</u> or kilo-? <u>Centi</u> or milli-? <u>Micro</u> or milli-? <u>Centi</u> or micro-? <u>Kilograms</u> or grams?</p>	<p>How Big Are They Really?</p> <p>A centimeter is the width of: <u>pinky</u> The size of a liter is: <u>bigger than a quart</u> A meter is how many feet? <u>3.3ft</u> A gram is about: <u>a dollar bill</u> A millimeter is the width of: <u>finger nail</u></p>