Elements, Compounds & Mixtures: More Practice

**Elements** – will only have one type of atom. In the drawings, this is indicated by only one color of circle present in the box. These are pure substances.

**Compounds** – are two or more elements chemically bonded together in a certain way. These will show two or more colored dots which are touching in the same arrangement again, and again in the box. These are pure substances.

**Mixtures** – are not pure substances. Can be mixtures of two different elements but are not bonded (not touching). Or they can be mixtures of two different compounds (not touching). Or the can be a mixture of an element and a compound.

Identify if each box shows an element, a compound or a mixture. Write E, C or M on the line to by each letter on the right.

A. _______  B. _______
C. _______  D. _______
E._______  F. _______ 
G. _______  H. _______
I._______  J. _______
K. _______  L. _______
M._______  N. _______
O. _______  P. _______
Q._______  R. _______
S. _______  T. _______
Elements, Compounds & Mixtures - Practice Drawing Diagrams

Below are descriptions of different substances. Based on the information given, draw a diagram of the substance in the box using circles to represent atoms.

- Use a different color or shading to show each element. So if a compound has two different elements in it – the drawing of it should have two different colored circles, and so on.
- Remember: atoms in compounds are chemically bonded. Show this by having circles touch which show a chemical bond between them.
- Remember particles in solids are close together, liquids are spread out some, and gases have a lot of space between the particles.

<table>
<thead>
<tr>
<th>1. copper (Cu) in a pipe – hint: it’s a pure substance, and it’s a solid.</th>
<th>2. table salt – NaCl – is a solid, and a pure substance.</th>
<th>3. air: not a pure substance. Contains a mix of O₂, N₂, and CO₂ gas.</th>
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</thead>
<tbody>
<tr>
<td>4. liquid mercury (Hg) in an old mercury bulb thermometer – it’s a pure substance</td>
<td>5. pure distilled water: H₂O – it’s a liquid, and it’s a pure substance</td>
<td>6. gold (Au) in a solid bar from a bank valu</td>
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<tr>
<td>7. steel – a solid mixture of iron (Fe), carbon (C), and nickel (Ni)</td>
<td>8. graphite in your pencil tip is pure carbon (C) and is a solid.</td>
<td>9. carbon dioxide (CO₂) from a paintball gun canister – assume it’s a pure substance, and is a gas.</td>
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