S-C-7-1_Mixtures Worksheet and KEY

Name _____Class _____Date _____

**Learning Activity Worksheet**

# Classifying and Separating Mixtures

**1.** Classify each of the following mixtures as either homogeneous or heterogeneous.

_____ **a.** beef stew

_____ **b.** dry air

_____ **c.** granola bar

_____ **d.** brass

_____ **e.** natural gas

_____ **f.** ocean water

_____ **g.** forest soil

_____ **h.** lemonade

_____ **i.** olive oil

_____ **j.** fizzing soda pop

| Substance | Physical properties | Separation procedure |
|---|---|---|
| Sawdust | solid particles; visible to the eye; do not dissolve in water; floated on top of the water; nonmagnetic | |
| Potassium chloride | solid, white, crystals; able to see small grains; quickly dissolve in water; nonmagnetic | |
| Powdered limestone | solid, fine white particles; too tiny to see; do not dissolve in water; are suspended in water; nonmagnetic | |
| Nickel powder | solid, fine gray particles; too tiny to see; do not dissolve in water; sink in water and fall to the bottom; magnetic | |
| Copper pellets | solid, shiny, red pellets about 0.5 mm in diameter; do not dissolve in water, sink in water and fall to the bottom; nonmagnetic | |
| Ethanol | liquid, clear and colorless; lower density than water; dissolves immediately in water; nonmagnetic | |

**1.** Classify each of the following mixtures as either homogeneous or heterogeneous.

| | |
|---|---|
| *heterogeneous* | **a.** beef stew |
| *homogeneous* | **b.** dry air |
| *heterogeneous* | **c.** granola bar |
| *homogeneous* | **d.** brass |
| *homogeneous* | **e.** natural gas |
| *homogeneous* | **f.** ocean water |
| *heterogeneous* | **g.** forest soil |
| *homogeneous* | **h.** lemonade |
| *homogeneous* | **i.** olive oil |
| *heterogeneous* | **j.** fizzing soda pop |
| *heterogeneous* | **k.** salsa |
| *homogeneous* | **l.** white cider vinegar |

| Substance | Physical properties | Separation procedure |
|---|---|---|
| Sawdust | solid particles; visible to the eye; does not dissolve in water; floated on top of the water; nonmagnetic | *Skim off the sawdust from the top of the water using a plastic spoon. –OR– Filter the mixture through a funnel with filter paper.* |
| Potassium chloride | solid, white, crystals; able to see small grains; quickly dissolves in water; nonmagnetic | *Pour water into small plastic cup. Allow water to evaporate overnight leaving potassium chloride crystals. –OR– Do a distillation. Water will be the distillate and remaining solid will be calcium chloride.* |
| Powdered limestone | solid, fine white particles; too tiny to see; does not dissolve in water; are suspended in water; nonmagnetic | *Place funnel over small plastic cup. Pour mixture through filter paper. Collect particles of powdered limestone in filter paper.* |
| Nickel powder | solid, fine gray particles; too tiny to see; does not dissolve in water; sink in water and fall to the bottom; magnetic | *Place a magnet over the nickel powder and draw the particles out the water. Scrape the nickel powder off the magnet. –OR– Evaporate off the water leaving the nickel powder behind.* |
| Glycerol | liquid, viscous, clear and colorless; higher density and much higher boiling point than water; dissolves quickly in water; nonmagnetic | *Do a distillation of the mixture collecting water as the distillate with the glycerol left behind in the distillation flask.* |