

Name: _____

Classification of Dispersions: Solutions, Colloids, and Suspensions

Directions: Prepare the following mini-labs. Then: 1) Check to see if the mixture separates. 2) Check for a Tyndall Effect. 3) Fill in the table and classify each as a solution, suspension, or colloid.

Preparations:

1. Fill a test tube approx. half full of vinegar and oil salad dressing. Shake vigorously. Let it set and observe over a period of time.
2. Boil 100 ml of water in a beaker. Put one spoon or one packet of gelatin in the beaker, stir, and let it set.
3. Stir 2 grams, or half of a spoonful, of borax into 200 ml water in a 250 ml beaker.
4. Cook 2-3 pieces of macaroni in 100 ml water. Decant the water into a different beaker. Observe the water.
5. Capture smoke from incense into an inverted beaker.
6. Stir 2 grams, or half of a spoonful, of salt into 200 ml water in a 250 ml beaker.
7. Stir 5 grams, or one spoonful, of clay into 200 ml water in a 250 ml beaker.
8. Stir in 5 drops food coloring into 200 ml water in a 250 ml beaker.
9. Fill a test tube with club soda.
10. Using a hot mitt, capture steam into an inverted beaker from another beaker of boiling water.
11. Stir 12 grams, or 3 spoonfuls, of sugar into 200 ml water in a 250 ml beaker.
12. Stir 10 ml milk into 30 ml water in your smallest beaker.

Table 2: Classification of Dispersions

Mixture	Preparation (observe each in a 250 = mL beaker)	Does It Separate?	Tyndall Effect?	Classification
		yes	yes	suspension
		no	yes	colloid
		no	no	solution
oil and vinegar salad dressing	shake oil and vinegar salad dressing and observe <i>test tube, shake</i>			
gelatin	prepare a container of Jello® or similar gelatin dessert <i>1 spoon/100 mL</i>			
sodium borate (Na ₂ B ₄ O ₇) in water	stir 2 g (0.5 tsp) Boraxo® hand cleaner into 200 mL water			
starch in water <i>1 piece/100 mL</i>	cook macaroni or other pasta, decant starch water and observe			
smoke in air	capture smoke from touch paper or incense, and cover with a watch glass			
salt in water	stir in 2 g (0.5 tsp) of noniodized table salt (NaCl) in 200 mL water			
clay in water	stir in 5 g (1.5 tsp) of clay or fine dirt in 200 mL water			
food coloring in water	stir in 5 drops of food coloring in 200 mL water			
carbon dioxide (CO ₂) in water	fill container with club soda or similar colorless carbonated drink			
steam in air	using a hot mitt, capture a beaker of steam above boiling water			
table sugar in water (sucrose, C ₁₂ H ₂₂ O ₁₁)	stir 12 g sucrose (3 tsp) in a beaker of water			
homogenized milk	stir 50 mL of regular homogenized milk in 150 mL water			