**Chemical Testing Lab**

**Materials needed**

* everyday chemicals
  + dish soap
  + laundry soap
  + bleach
  + drain cleaner
  + acetone (CH3)2CO (paint thinner or nail polish remover)
* lab chemicals
  + hydrochloric acid (HCl)
  + sodium hydroxide (lye) (NaOH)
* grease
* cooking, motor, or vegetable oil
* polluted water (can be made with water plus soil, pesticide, herbicide, or waste products).
* polluted salt water (can be made with water plus oil, pesticide, herbicide, or waste products, and salt such a table or sea salt to mimic brackish water.)

**Testing equipment (per group)**

* goggles (1 per person)
* protective gloves
* 12 pipettes
* up to 12 test tubes, beakers, or cups
* up to 12 pieces of their material

**Chemical properties tests**

As a materials engineer, you must make sure that your material can withstand chemicals with which it may come in contact. (Dried cement is fairly unreactive.)

**Procedure**

1. Obtain and wear goggles and gloves
2. Place a sample of the material into a small beaker or test tube
3. Add a chemical
4. Record observations
5. Repeat for each material
6. At the end of testing, dispose of the tested materials properly

**Observations**

**Material 1**

|  |  |
| --- | --- |
| Dish Soap | Polluted Salt Water |
| Bleach | Oil |
| Polluted water | Vinegar |
| Nail Polish Remover | Grease |
| Sodium Hydroxide | Drain Cleaner |
| Hydrochloric Acid | Laundry Soap |

**Material 2**

|  |  |
| --- | --- |
| Dish Soap | Polluted Salt Water |
| Bleach | Oil |
| Polluted water | Vinegar |
| Nail Polish Remover | Grease |
| Sodium Hydroxide | Drain Cleaner |
| Hydrochloric Acid | Laundry Soap |

**Material 3**

|  |  |
| --- | --- |
| Dish Soap | Polluted Salt Water |
| Bleach | Oil |
| Polluted water | Vinegar |
| Nail Polish Remover | Grease |
| Sodium Hydroxide | Drain Cleaner |
| Hydrochloric Acid | Soap |

**Questions/Conclusions:**

In two paragraphs or more, explain which of your samples is best and why. Make sure you include information from your data tables.