



# PROPERTIES OF A DETERGENT

Cleaning today is more complex than ever. With the rising labor costs, increased legislation, a variety of supplies and equipment, new varied types of surfaces and emphasis on costs, those in the business of cleaning must thoroughly understand how their products perform.

## **Four Functions of a Detergent:**

1. Wetting
2. Penetration
3. Emulsification
4. Soil suspension

## **Building a cleaner:**

### **pH:**

1. A unit of measurement of acidity or alkalinity of aqueous based solutions
2. 7 is neutral, less than 7 is acid, more than 7 is alkaline
3. Neutral products clean light duty dirt and dust (polished floors, painted surfaces)
4. Acid products clean alkaline soils (rust, hard water mineral deposits)
5. Alkaline products clean acidic soils (normal dirt, oils, greases)

### **Surfactant: (surface active agent)**

1. Assists in wetting, penetration, emulsion and suspension.
2. Lowers surface tension thus making water wetter.
3. The type of surfactant will determine the cleaning characteristics of a product

### **Alkaline Builders:**

1. Add pH to products
2. Oils and fats are more soluble at a higher pH
3. Examples---sodium hydroxide, potassium hydroxide, sodium metasilicates

### **Solvency:**

1. Thin soils quickly, very effective against greases and oils
2. Solvents have no pH
3. Examples---butyl, ammonia, alcohol, terpenes



**Key Elements that Affect Detergent Cleaning Ability:**

1. Time---allow time for the product to work
2. Agitation---equipment can make the task easier
3. Chemical dilution---dilute products properly
4. Temperature---some soils are removed easier with hot water