



Spartan Chemical Company, Inc.

1110 Spartan Drive, Maumee OH 43537

Phone: (800) 537-8990

www.spartanchemical.com

Training Information

Market Segment:

Title:

IMPORTANCE OF DETERGENT PROPERTIES IN CLEANER DISINFECTANTS

Check If Applicable: ☐ Rx Procedure ☒ None
☐ Cleancheck Procedure

Procedures:

I. Detergents Have Four Functions in Cleaning

- A. Wetting
- B. Penetrating
- C. Soil suspension
- D. Emulsifying

II. Wetting Properties Make Water Wetter

- A. "Wetter" water penetrates soil better and faster.
- B. Wetting agent acts as the carrier for the disinfecting agents.

III. Penetrating Properties Bring the Disinfectant Into Contact With the Bacteria

- A. Disinfectant must penetrate bacterial coatings.
 - 1. Outer coating or capsule
 - 2. Slimy substance called a pellicle
- B. How quat and phenolic disinfectants work
 - 1. Normal bacteria cell membrane acts as a selective filter.
 - a. Nourishment goes in
 - b. Waste products come out
 - 2. Disinfectant destroys the selectivity of the bacterial cell membrane
 - 3. The result is death of the cell, the microorganism

- C. Not leaving the solution down long enough, before proper penetration of the cell membrane can happen, can lead to incomplete kill of microorganisms.

IV. Soil Suspension Properties Hold Loosened Soil and Bacteria in Solution

A. Overloaded disinfecting solution

1. When too much soil is in solution, disinfecting activity is negated.
2. Live bacteria may be carried in solution and spread.
3. Using fresh solution and changing solution frequently will reduce this risk.

V. Emulsifying Properties Tie Greasy Soils to Water

- A. Soils tend to be greasy and acidic.
- B. Oil and water do not mix.
- C. Emulsifiers in the detergent make a bridge between soil and water, allowing the soil to be picked up and carried away with the detergent solution.

VI. Advantage of One Step Cleaner Disinfectants

- A. Labor savings - only make one cleaning and disinfecting pass
- B. No live bacteria carried in cleaning solution for cross contamination
- C. Better kill of bacteria due to better wetting and penetration properties

VII. Quats versus Phenolics as Cleaners

- A. Quat formulations generally have better detergent characteristics
 1. Tend to have higher pH
 2. Enhances their cleaning ability