EDMAR CHEMICAL COMPANY

H1N1 (Influenza A) and Hand Sanitizers

THE "FLU"

- 30 Million people get influenza each year in the US alone
- 100,000 people get hospitalized from influenza or influenza related symptoms
- 30,000 people die in the US each year from influenza or influenza related symptoms
- Swine influenza H1N1 (a strain of Influenza A) was first identified in the US in early 1930s
- It has resurface many times and since that first outbreak it is estimated that 50% of our countries pigs have been exposed or carry H1N1
- Pigs pass it to other pigs and it is controlled by vaccinations
- It rarely passes from a pig to a human. However there have been cases of this happening especially with those that work with pigs.
- The issue or the scare is when it passes from human to human.
- Influenza is spread by either a person sneezing or coughing directly on another person or, more often, by hand to mouth transfer….hands touch an unknown contaminated surface and we transfer it to our mouth. How often do you touch your face or your mouth?
- We can take a room and disinfect it. Fill it with healthy people and healthy people will come out of it. Take that same room that has been thoroughly disinfected and add a mixture of healthy and sick people, and more sick people will come out of that room. Hand to mouth transfer!

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ANTIMICROBIAL HAND SANITIZERS

Although the CDC (Center for Disease Control) has stated that the use of hand sanitizers is critical in controlling the spread of viruses, The United States FDA (Food & Drug Administration, the oversight body for OTC hand sanitizers) does not allow Antimicrobial hand products to make stated claims against viruses.

THIS IS TRUE FOR ALL "LEAVE-ON" HAND & SKIN SANITIZERS WHETHER THEY ARE ALCOHOL-BASED OR ALCOHOL-FREE!

The claim that hand sanitizers may make is that they reduce bacteria on the skin by a minimum of 99.9%. Reduces is not a 100% kill. The U.S. EPA and U.S. FDA require that Viruses have to be killed completely (100% eradication).

Bacteria live on the surface of a hand or environmental surface. Viruses have to live inside a host. In this case the human or the pig. They can mutate. That is why 100% kill is required.

BENZALKONIUM CHLORIDE

Benzalkonium chloride is an antimicrobial that belongs to a group of surfactants called quaternary ammonium compounds, or "quats."

Benzalkonium chloride is effective at inactivating Influenza A virus, based on hard surface disinfectant data! On these non-porous surfaces it takes about 400 ppm (or 0.04%) of Benzalkonium chloride to kill Influenza A. **PRO~TEX™ Foaming Hand & Skin Sanitizer** has almost 3 times that level. Although we (or any other manufacturer) cannot claim on the label of a hand sanitizer product that it kills (100% elimination) the H1N1 virus, the data would suggest that this is a very prudent step to take.

The use of Benzalkonium chloride hand sanitizers has been demonstrated to reduce Elementary School illness absenteeism versus hand washing alone.

BENZALKONIUM CHLORIDE vs. Alcohol-Based Sanitizers

- Alcohol works. It has been around for a long time. Quat-based hand sanitizers just work better! Alcohol works by drying up the cell. It needs to have contact time to do that. Once it is gone it is gone. There is no residual efficacy. Did it have enough contact time to work????? Typically we talk about 15-30 seconds for a product to work effectively.

- Quats work by attaching directly to the cell. They "dissolve" the cell wall. It is not a poison. It is a surfactant. It has the potential to remain active and efficacious on the skin for hours (depending upon environmental variables)

- Quats are antimicrobials, not antibiotics. Pathogens do not develop resistance to antimicrobials because antimicrobials are "non-specific."

- Alcohol has to have a carrier or it runs off your hands. Commonly the product is thickened. These thickeners are left on your hands. They can trap dead bacteria in the pores of your hand. Dead bacteria are a food source for live bacteria. Your hands may end up more contaminated then what you started with. This is no fault to the alcohol but the thickeners may decrease the action of the product overall.

- Published studies demonstrate that alcohol-based hand sanitizers increase skin susceptibility to infection, which can increase the chances of spreading disease causing microorganisms among patients.

- Alcohol dries out your skin much the same as dries out bacteria cells. Quats can be formulated to be effective and make the skin feel good.

- Quats are non-flammable.

- In published studies comparing Quat-based hand sanitizers versus Alcohol-based hand sanitizers (The Journal of Hygiene, Association of Operating Room Nurses Journal), it has been demonstrated that:

  - ✓ ***Benzalkonium chloride-based hand sanitizers have greater sustained antibacterial activity than alcohol-based hand sanitizers.***

  - ✓ ***Alcohol-based hand sanitizers became less effective with repeated use and irritated the hands of subjects.***

  - ✓ ***Benzalkonium chloride-based hand sanitizers became more effective after repeated use - without irritation!***