# The Proper Role of Disinfectants in Reopening Schools and Businesses





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# CDC has given guidelines for the reopening of businesses, schools and shops





- Guidelines for schools recently updated in February
- Currently over half of schools are either closed or reduced capacity
- Guidelines for businesses were updated in January
- Guidelines for all businesses, schools and shops share common themes

# Mitigation Strategies to Reduce the Transmission of SARS-CoV-2 in Schools and Businesses



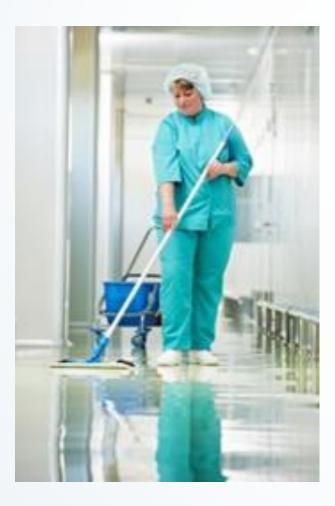
- Universal and correct use of masks.
- Physical distancing (6 ft min.)
- Handwashing and respiratory etiquette
- Cleaning
- Contact tracing



# "Cleaning" among top 5 elements cited by CDC to reduce the spread of COVID-19

- The mode of transmission for COVID-19 is person to person contact by air borne virus particles
- Transmission from hard surfaces is secondary, but important
- COVID-19 is not the only pathogen threatening reopening employees, shoppers and students
- CDC has guidelines for cleaning
- Clean is good, hygienic is better

# Beyond Clean Creating a Hygienic Environment



- <u>Hygienic</u>: conditions or practices conducive to maintaining health and preventing disease, especially through cleanliness.
- A "Beyond Clean" is created when the environmental pathogen level is reduced.
- Disinfecting reduces the level of environmental pathogens.
- Disinfectants and sanitizers are tools to reduce the risk of infection by creating a hygienic environment.
- Creating a hygienic environment, not just a clean environment but an environment that promotes a healthy place to learn, live and work.



### Steps to a Hygienic Environment

### Step 1 Cleaning

- Removal of dirt, soil and some germs
- Prepares surface for next step

### Step 2 Sanitizing

- Reduces the number of bacteria to a, "safe level"
- Viruses excluded

# Step 3 Disinfecting

 Elimination of specific pathogens including viruses



### Where to Clean & Disinfect?







- CDC recommends highly touched surfaces: doorknobs, door handles railings, egresses
- Classroom objects: desks, lockers
- Food service areas: cafeterias, sinks, countertops, and eating areas
- Not mentioned: bathrooms, buses

# When to Clean & Disinfect Schools?





 Clean and disinfect frequently touched surfaces at <u>least daily</u> or between use by different students. Limit the use of shared objects when possible, or clean and disinfect between use.

### Options for cleaning and disinfection include:

- In the morning before students arrive
- Between classes (if students change rooms and while students are not present)
- Between use of shared surfaces or objects
- Before and after food service
- Before students return from recess or breaks
- After students leave for the day



### What Products Should be Used?





CDC recommends EPA registered products on List N

All products on this list meet EPA's criteria for use against SARS-CoV-2, the virus that causes COVID-19. Each product has either:

- Demonstrate efficacy against the coronavirus SARS-CoV-2 (COVID-19);
- Demonstrate efficacy against a pathogen that is harder to kill than SARS-CoV-2 (COVID-19); or
- Demonstrate efficacy against a different human coronavirus similar to SARS-CoV-2 (COVID-19)

# Selected EPA-Registered Disinfectant Lists

- EPA has 14 lists of registered disinfectant products
  - Identifies specific disinfectant products that have tested and found to be effective against specific pathogens
  - Virucidal: Norovirus, Blood Borne Pathogens: HIV, Hepatitis B&C
  - Bactericidal: Antibiotic resistant bacteria like MRSA, Clostridium difficule, Tb
- Special for COVID-19: EPA List N
  - Created in March 2020
  - 500+ products; 60+ products SARS-Cov-2 effective (COVID-19 virus)
  - Use the EPA List N to confirm that you have disinfectant capable of disinfecting the COVID-19 virus



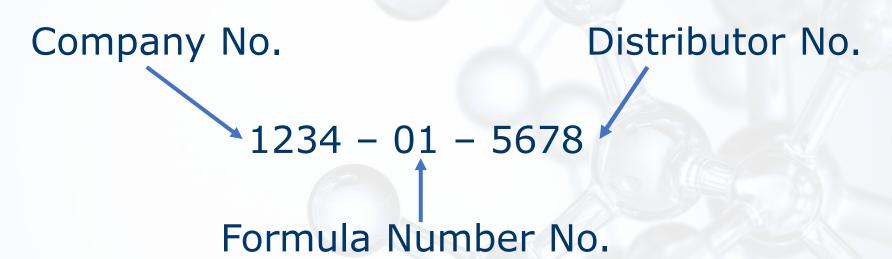
### Mason Chemical Company List N Products: 35

Product Name	EPA Registration Number	Active Ingredient(s)	Contact Time (in minutes)	To kill SARS-CoV-2 (COVID-19) follow disinfection directions for the following pathogen(s)
Maguard® 1522	10324-230	Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)	1	Human coronavirus
Maguard 5626®	10324-214	Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)	2	SARS-CoV-2
Maquat®256-NHQ	10324-141	Maquat®MQ615/624M	10	SARS-CoV-2
Maquat®64-NHQ	10324-154	Maquat®2420	10	SARS-CoV-2
Maquat®128-NHQ	10324-155	Maquat®2420	10	SARS-CoV-2
Maquat®32-NHQ	10324-157	Maquat®2420	10	SARS-CoV-2
Maquat®86-M	10324-85	Maquat® MQ2525M	10	SARS-CoV-2
Maquat®710-M	10324-117	Maquat® MQ615/624M	10	Norovirus; Feline calicivirus
Maquat®7.5-M	10324-81	Maquat®MQ615/624M	10	Norovirus; Feline calicivirus
Maquat®128-PD	10324-105	Maquat® MQ2525M	10	Human coronavirus
Maquat®256-MN	10324-108	Maquat® MQ615/624M	10	Human coronavirus
Maquat®128-MN	10324-112	Maquat®MQ615/624M	10	Human coronavirus
Maquat®64-MN	10324-113	Maquat®MQ615/624M	10	Human coronavirus
Maquat®32-MN	10324-114	Maquat® MQ615/624M	10	Human coronavirus
Maquat®750-M	10324-115	Maquat®MQ2525M	10	Human coronavirus
Maquat®MQ2525M-CPV	10324-140	Maquat® MQ615/624M	10	Human coronavirus
Maquat®MQ2525M-14	10324-142	Maquat®MQ2525M	10	Human coronavirus
Maquat®512-NHQ	10324-156	Maquat®2420	10	Human coronavirus

Product Name	EPA Registration Number	Active Ingredient(s)	Contact Time (in minutes)	To kill SARS-CoV-2 (COVID-19), follow disinfection directions for the following pathogen(s)
Maquat®256-PD	10324-164	Maquat®MQ2525M	10	Human coronavirus
Maquat®32	10324-166	Maquat®MQ2525M	10	Human coronavirus
Maquat®32-PD	10324-167	Maquat®MQ2525M	10	Human coronavirus
Maquat®705-M	10324-177	Maquat®MQ615/624M	10	Human coronavirus
Maquat®2420-10	10324-194	Maquat®2420	10	Human coronavirus
Maquat®702.5-M	10324-198	Maquat®MQ615/624M	10	Human coronavirus
Maquat®42	10324-57	Maquat®MQ2525M	10	Human coronavirus
Maquat®128	10324-58	Maquat®MQ2525M	10	Human coronavirus
Maquat®64	10324-59	Maquat®MQ2525M	10	Human coronavirus
Maquat®10	10324-63	Maquat®MQ2525M	10	Human coronavirus
Maquat®280	10324-71	Maquat®MQ615/624M	10	Human coronavirus
Maquat®615-HD	10324-72	Maquat®MQ615/624M	10	Human coronavirus
Maquat®5.5-M	10324-80	Maquat®MQ615/624M	10	Human coronavirus
Maquat®64-PD	10324-93	Maquat®MQ2525M	10	Human coronavirus
Maquat®20-M	10324-94	Maquat®MQ2525M	10	Human coronavirus
Maquat®50-DS	10324-96	Maquat®MQ2525M	10	Human coronavirus
Maquat®10-PD	10324-99	Maquat®MQ2525M	10	Human coronavirus



### **Deciphering EPA Registration Numbers**



- <u>Company No</u>. Unique identifier: identifies the owner of the registration.
- Formula No. identifies the product; sequential
- **<u>Distributor No.</u>** identifies the seller of the product

# Manufacturing Use Products (MUP) vs. End Use Products (EUP)

### **Manufacturing Use Product**

- Only approved for use in manufacturing of EPA registered products; no claims or efficacy associated
- Active Ingredient in the EUP
- Mason Chemical Company offers 19 MUPs

### **End Use Product**

- Products with the marketing claims and efficacy associated (Ex. SARS-CoV-2, HIV, Tb)
- Available for subregistration
- Mason Chemical Company offers <100 EUPs
  - Food Protection Agricultural to Food Service,
  - Institutional Healthcare, Lodging, Schools
  - Oil & Gas,
  - Wood protection
  - Water Treatment Recirculating and Recreational



# Mason Chemical Company MUP Portfolio

PRODUCT NAME	EPA REG. NO.	CHEMICAL DESCRIPTION
Maquat® LC12S-50	10324-3	n Alleyl (679/ C12, 259/ C14, 79/ C16, 19/ C19) Dimothyl Bonzyl Ammonium Chlorido
Maquat® LC12S-80H	10324-129	n-Alkyl (67% C12, 25% C14, 7% C16, 1% C18) Dimethyl Benzyl Ammonium Chloride
Maquat® MC1412-50	10324-6	n-Alkyl (50% C14, 40% C12, 10% C16) Dimethyl Benzyl Ammonium Chloride
Maquat® MC1412-80E	10324-14	II-Aikyi (50% C14, 40% C12, 10% C10) Diffiethyi Benzyi Affilifiofilati Ciliofide
Maquat® MC1416-50	10324-8	n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) Dimethyl Benzyl Ammonium Chloride
Maquat® MC1416-80	10324-9	II-Aikyi (00% C14, 30% C10, 3% C12, 3% C18) Diffictifyi Berizyi Affilifiofilati Ciliofiae
Maquat® MC5815	10324-98	n-Alkyl (58% C14, 28% C16, 14% C12) Dimethyl Benzyl Ammonium Chloride
Maquat® MC6025-50	10324-26	n-Alkyl (60% C14, 25% C12, 15% C16) Dimethyl Benzyl Ammonium Chloride
Maquat® TC76-50	10324-1	99.6% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) Dimethyl Benzyl Ammonium Chloride, 0.4% Dialkyl (60% C14, 30% C16, 5% C18, 5% C18)
Maquat® MQ2525-50	10324-17	50% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) Dimethyl Benzyl Ammonium Chloride
iviaquat iviQ2323-30	10324-17	50% n-Alkyl (50% C12, 30% C14, 17% C16, 3% C18) Dimethyl Ethylbenzyl Ammonium Chloride
Maquat® MQ2525M-50	10324-28	50% n-Alkyl (60% C14, 30% C16, 5% C12, 5% C18) Dimethyl Benzyl Ammonium Chloride, 50% n-Alkyl (68% C12,
Maquat® MQ2525M-80	10324-27	32% C14) Dimethyl Ethylbenzyl Ammonium Chloride
Maquat® 40-50	10324-31	25% Dioctyl Dimethyl Ammonium Chloride 50% Octyl Decyl Dimethyl Ammonium Chloride 25% Didecyl Dimethyl Ammonium Chloride
Maquat® 4450-E	10324-34	Didecyl Dimethyl Ammonium Chloride
Maquat® 4480-E	10324-35	blacty billethy Ammonan Chloride
Maquat® MQ615M	10324-51	40% n-Alkyl (50% C14, 40% C12, 10% C16) Dimethyl Benzyl Ammonium Chloride, 15% Dioctyl Dimethyl Ammonium
Maquat® MQ624M	10324-52	Chloride 30% Octyl Decyl Dimethyl Ammonium Chloride 15% Didecyl Dimethyl Ammonium Chloride
Maquat® 2420-50	10324-126	40% n-Alkyl (50% C14, 40% C12, 10% C16) Dimethyl Benzyl Ammonium Chloride 60% Didecyl Dimethyl
Maquat® 2420-80	10324-127	Ammonium Chloride

### "NHQ" Series - Included on List N

- Neutral pH, built disinfectants
- Broad spectrum
- Cleans and Disinfectant one step

Product Name	EPA Number	Active Concentration	General Disinfecting/Virucidal Use- Dilution	To kill SARS-CoV-2 (COVID-19), follow disinfection directions for the following pathogen(s)
Maquat® 512-NHQ	10324-156	33.80%	0.25 oz./ gal.	Human Coronavirus
Maquat® 256-NHQ	10324-141	16.90%	0.5 oz./ gal.	SARS-CoV-2
Maquat® 128-NHQ	10324-155	8.45%	1 oz./ gal.	SARS-CoV-2
Maquat® 64-NHQ	10324-154	4.23%	2 oz./ gal.	SARS-CoV-2
Maquat® 32-NHQ	10324-157	2.12%	4 oz./ gal.	SARS-CoV-2

MUP: Maquat® 2420-50 or Maquat® 2420-80



### "MN" Series - Included on List N

- Neutral pH, built disinfectants
- Broad spectrum
- Cleans and disinfectants one step

Product Name	EPA Number	Active Concentration	General Disinfecting/Virucidal Use-	To kill SARS-CoV-2 (COVID-19), follow disinfection directions for the following pathogen(s)
Maquat® 256 MN	10324-108	22.48%	0.5 oz./ gal.	Human Coronavirus
Maquat® 128 MN	10324-112	11.24%	1 oz./ gal.	Human Coronavirus
Maquat® 64 MN	10324-113	5.62%	2 oz./ gal.	Human Coronavirus
Maquat® 32 MN	10324-114	2.81%	4 oz./ gal.	Human Coronavirus

MUP: Maquat® MQ615M or Maquat® MQ624M



### Alkaline Disinfectants - Included on List N

- Built Disinfectants pH 8 -11
- Broad Spectrum
- Cleans and disinfectants one step

Product Name	EPA Number	Active Concentration	General Disinfecting	To kill SARS-CoV-2 (COVID-19), follow disinfection directions for the following pathogen(s)
Maquat® 615-HD	10324-72	21.70%	1 oz/gal.	Human Coronavirus
Maquat® 5.5-M	10324-80	5.50%	2 oz/gal.	Human Coronavirus
Maquat® 86-M	10324-85	0.086%	Ready to Use	SARS-CoV-2

MUP: Maquat® MQ615M or Maquat® MQ624M



### "Maquat® 7" Series - Included on List N

- Food Contact Sanitizers No rinse
- Disinfectants
- Broad spectrum

Product Name	EPA Number	Active Concentration	General Disinfecting/Virucidal Use-Dilution	tollow disintection directions	Food Contact Sanitizing Use-Dilution
Maquat® 750-M	10324-115	50.00%	0.5 oz./ 4 gal.	Human Coronavirus	0.2 oz/4 gal
Maquat® 710-M	10324-117	10.00%	1.2 oz/ 2 gal	Norovirus; Feline calicivirus	1 oz/4 gal
Maquat® 7.5-M	10324-81	7.50%	3.5 oz./4.5 gal.	Norovirus; Feline calicivirus	1.36 oz./4 gal. (0.34 oz/gal.)
Maquat® 705-M	10324-177	5.00%	1.2 oz./ gal.	Human Coronavirus	2.1 oz/4 gal
Maquat® 702.5-M	10324-198	2.50%	2.3 oz./ gal.	Human Coronavirus	4.1 oz/4 gal

MUP: Maquat® MQ615M or Maquat® MQ624M



### "Maquat® 10" Series - Included on List N

- Food Contact Sanitizers No rinse
- Disinfectants
- Broad spectrum

Product Name	EPA Number	Active Concentration	Disinfecting/Virucidal Use-	To kill SARS-CoV-2 (COVID- 19), follow disinfection directions for the following pathogen(s)	Food Contact Sanitizing Use-Dilution
Maquat® 10	10324-63	10.00%	4.0 oz./ 5 gal.	Human Coronavirus	1.0 oz/4 gal
Maquat® 20-M	10324-94	20.00%	2.0 oz./ 5 gal.	Human Coronavirus	2 oz/5 gal
Maquat® 50-DS	10324-96	50.00%	4.0 oz./25 gal.	Human Coronavirus	1.0 oz./20 gal.

MUP: Maquat® MQ2525M-50 or Maquat® MQ2525M-80



### Why Quats, Maquat®?

- Quaternary ammonium compounds (QACs) have over an 80-year history of use.
- First large-scale use of QACs as a disinfectant was in World War II --- disinfecting troop carriers.
- QACs finds general acceptance by regulatory agencies around the globe:
  - EPA, FDA, ECHA,
- QACs are effective as a disinfectant, capable of controlling a broad spectrum of bacteria and viruses including MRSA, VRE, HIV, Hepatitis B, Influenza and SARS-CoV-2.
- Versatility QACs are used in a wide variety of applications not limited to disinfectants and sanitizers. QACs are used as a wood preservative, pool algicide, industrial water treatment.
- Mason Chemical Company has been a reliable supplier of high quality QACs for over 50 years.

## Maguard® Peracetic Acid Disinfectants - Included on List N



- Short dwell times: 1 & 2 Minutes
- High level disinfection Tb effective
- Broad spectrum
- Sanitizes food contact surfaces

<b>Product Name</b>	EPA Number	Active Ingredient(s)	General Disinfection	To kill SARS-CoV-2 (COVID-19), follow disinfection directions for the following pathogen(s)
Maguard® 1522	10324-230	Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)	0.85 oz/gal	Human coronavirus
Maguard® 5626	10324-214	Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)	1.5 - 4 oz/gal	SARS-CoV-2

Active ingredients: Hydrogen peroxide; Peroxyacetic acid (Peracetic acid)



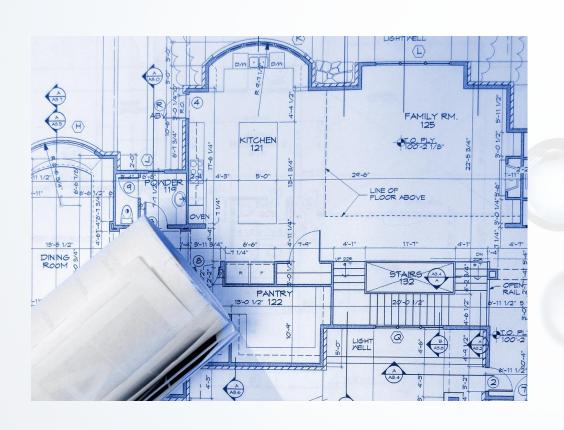
### Why Peracetic Acid, Maguard®?

- Peracetic acid is one of the more rapidly growing disinfection technologies.
- Peracetic acid is replacing sodium hypochlorite in broad number of industries and applications.
- Peracetic acid finds general acceptance by regulatory agencies around the globe.
- Peracetic acid is an effective high-level disinfectant, capable of controlling, "difficult to kill" microbes like Mycobacterium (Tb), Polio and Parvo virus.
- Peracetic acid is considered to be, "sustainable." Decomposes into benign components: water, oxygen and vinegar.
- Maguard® a trusted source of antimicrobial ingredients.

# Mason Chemical Company Supplemental Registration Program

- Mason Chemical Company license its EUPs to qualified customers.
   Grant the use of these EUP registrations to customer who desires to market & sell a disinfectant product under their own name
- Advantages
  - ✓ Speed to market reduce time in developing and registering a disinfectant product
  - ✓ Reduce costs over primary registration development costs are reduced, and Federal fees are eliminated
- See your Mason Chemical Company representative for further detail or email us: techservice@pilotchemical.com

# The Hygiene Plan Where, When to Clean and Disinfect?

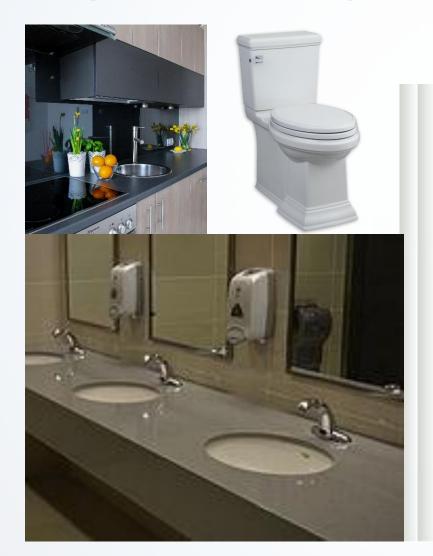


- CDC & EPA recommends EPA registered products be <u>kept away</u> from children
- Disinfectant should be applied according to label instructions
- Disinfectants should be applied by trained professionals
- Facilities should have a hygiene plan to clean and disinfect

# Suggested Cleaning and Disinfection Process for Reopening of Businesses and Shops

#### Plan Clean Disinfect **Prepare** Inspect Treat surface with Review the treated Clean with detergent Put-on PPE • Identify the places, disinfectant according area surfaces to be clean to the directions Remove dirt and soil **Aprons** and treated Dispose of excess Gloves • Select the proper Allow disinfectant to cleaningand Spray Goggles products stay wet as specified in disinfectant solution. Mop **Boots** the directions: 1-10 Plan a time to Wipe Minutes clean and disinfect Secure your cleaning Check inventory: and disinfect supplies when there are less Wipe off excess in a safe, secure area. people around and **Cleaning solution** disinfectant no children Disinfectant • Train the cleaning **Applicators** team

### Prioritization Areas of Disinfection





### Highly touched surfaces:

- Doors (doorknobs)
- Railings
- Egresses: elevators

#### Bathrooms:

- Toilets
- Sinks
- Facets

#### Kitchens:

- Facets
- Sinks



### **Applying Disinfectants**

- Read the directions.
- Use whatever personal protection equipment (PPE) recommended: gloves, eye protection
- Be aware of the ventilation in the area to be disinfected.
- Dispense the disinfectant according to the label directions.
  - Do not fog or mist any disinfectant product
- Apply to surfaces that are identified on the labels: floors, walls countertops, sinks, doorknobs, railing and toilets
- Allow the surface to be wet as long as directed. Standard dwell time: 10 minutes ---there are products with shorter dwell times

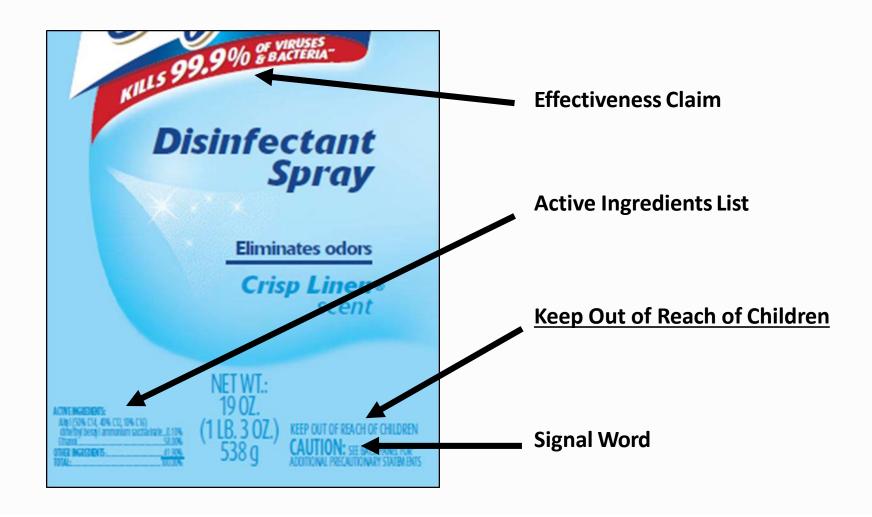


### Purpose of a Label

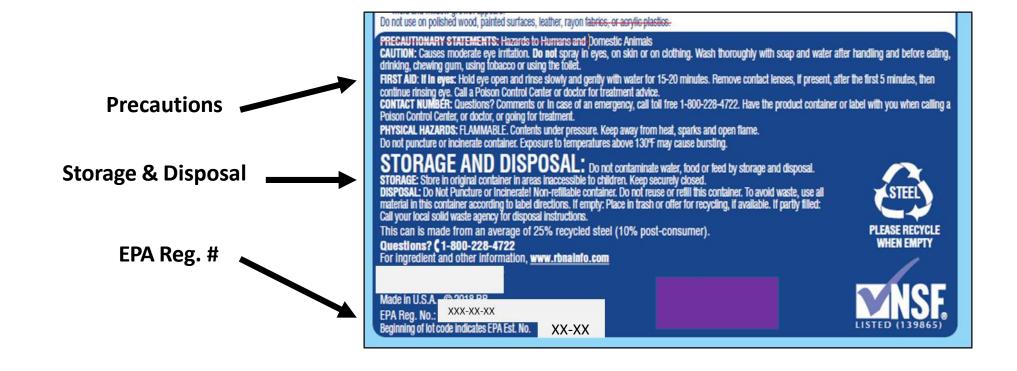
- Primary tool to communicate to user
- Provides Information:
  - Active ingredients
  - Safety
  - Use
    - Directions
    - Area of Use
  - Storage and Disposal
  - Marketing Claims (optional)



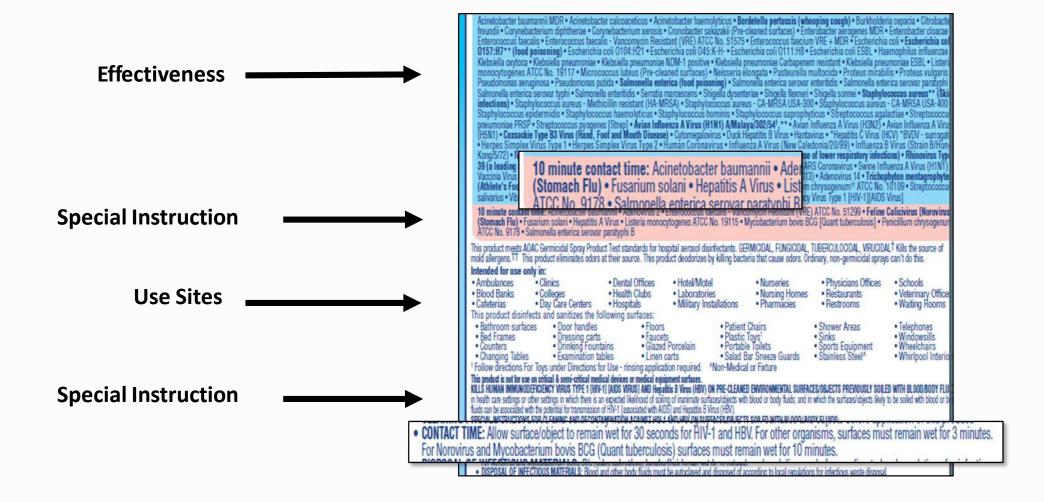
### **Understanding Disinfectants Labels - Front Label**



### **Understanding Disinfectants Labels -Side panel**



### **Understanding Disinfectants Labels – side panel**



### **Understanding Disinfectants Labels**

#### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS.

WARNING: Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if absorbed through skin. Harmful if inhaled. Avoid contact with skin. Avoid breathing vapor or spray mist. Wear goggles or face shield, long sleeved shirt, long pants, socks, shoes and chemical-resistant gloves made of any waterproof material. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

#### **ENVIRONMENTAL HAZARDS**

\*This product is toxic to fish and aquatic invertebrates. Do not appy directly to water, or to areas where surface water is present, or to inter-tidal areas below the mean high water mark. See Directions for Use for additional precautions and requirements.

#### PHYSICAL OR CHEMICAL HAZARDS

Flammable, Keep away from heat and open flame.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Some materials that are chemically-resistant to this product are barrier laminate, butyl, nitrile, neoprene, polyvinyl chloride (PVC), or Viton. For more options, follow the instructions for category C on the chemical resistant category chart.
- Applicators and other handlers must wear; Long sleeve shirts and long pants and shoes plus socks.

#### **USER SAFETY REQUIREMENTS**

- Follow manufacturer's instructions for cleaning / maintaining PPE. If no such instructions for washables exist, use detergent
  and hot water. Keep and wash PPE separately from other laundry.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

#### USER SAFETY RECOMMENDATIONS

- . User should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- . User should remove clothing PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon

#### **Safety information**

- Precautionary Statements
- Environmental Hazards
- PPE Directions
- Other safety recommendations



# Disinfectants: A Regulated Product in Regulated World





- EPA regulates all chemicals with a few exceptions.
- EPA regulates disinfectants and sanitizer through a group of laws referred to: Federal Insecticide, Fungicide and Rodenticide Act. (FIFRA)
- EPA defines these products as pesticides because these products are effective in eliminating or reducing a, "pest": bacterial, fungi or viruses
- The US EPA uses, "registration" as the chief means of regulating chemicals under the FIFRA.
- Product labeling is EPA's key regulatory tool for ensuring safe use of pesticides:
   <u>The Label Is The Law</u>."
- Local EPA and state environmental agencies enforce these rules by a combination of criminal and civil \$\$ penalties.



# Summary The DOs and the DON'Ts of Disinfecting

### **Always**

- Always read and follow the directions on product labels
- Always wear protective gear like gloves if recommended on the label
- Always use products in a well- ventilated area
- Always save the Poison Control number in your phone: 1-800-222-1222
- Always use and reseal child safety caps
- Always keep these products out of a child's sight and reach, even while using
- Always ensure a product container is empty and clean before putting in the recycling bin
- Always immediately clean up any disinfectant spill, no matter how small

#### Never

- Never mix disinfectant products with anything but water
- Never use these products on or in the human body, pets, or food
- Never store products in places easily accessed by children or pets
- Never remove products from their original containers and put into unlabeled containers
- Never use disinfectants near open flames, barbeque grills, lit cigarettes, etc.
- Never leave these products uncovered for extended amounts of time
- Never put used or spilled products back into their container