STANDARD OPERATING PROCEDURES

DIVISION OF COMPARATIVE MEDICINE
UNIVERSITY OF SOUTH FLORIDA

TITLE:	**Reagents, Solutions and Decontaminants - Labeling and Use**
SCOPE:	All Animal Program Personnel
RESPONSIBILITY:	Facility Manager, All Animal Program Personnel
PURPOSE:	To Ensure Uniformity of Labeling and Use of All Reagents/Disinfectants.

I. PURPOSE

1. To ensure the uniformity of labeling of all reagents used in the animal facilities.

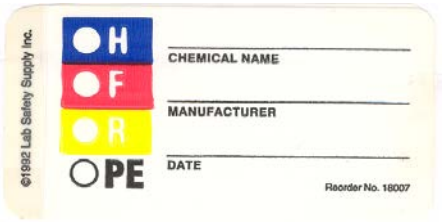
II. RESPONSIBILITY

1. All program staff contributes to the accurate and consistent labeling of all reagents.

III. PROCEDURES

1. **All reagents and solutions removed from their original container**, and are not designated for immediate and complete use, **shall be labeled** to indicate identity, titer or concentration, storage requirements (if requires specific storage requirements), and expiration date, if applicable.

    a. The attached label is to be used in all animal facilities and will be purchased from Lab Safety, catalog #9B-18007
    b. **Indicate reagent name** on first line, mixture or **concentration** and specific **storage requirements** on second line, and **date preparation expires** on third line. **If an expiration date cannot be determined** then on the third line record the date the solution was prepared or placed in the container, or date original container was opened and clearly identify what the date represents (e.g. prepared, filled, or opened).
    c. **Check appropriate box** on left side of label to indicate concerns expressed by SDS. H = health hazard, F = flammability, R = reactivity, PE = use of protective equipment recommended.
    d. **All entries will be made with permanent ink sharpie**.
    e. Outdated reagents and solutions shall not be used.
    f. Reagents without labels or containing illegible labels shall not be used.
    g. Reagents appearing deteriorated shall not be used.



2. Disinfectants approved for use:
   a. **Decon-Spore 200 Plus**-
      Active ingredient - peracetic and hydrogen peroxide solution
      Preparation
         Floor machines – combine one bottle of the 13 oz concentrate (#DS200-03-13ZA) and approximately 6-8 gallons of water
         Mop buckets - combine one bottle of the 2 oz concentrate (#DS200-03-2ZA) and approximately 2-3 gallons of water
      Safety - strong oxidizer and corrosive-use in a well-ventilated area
      PPE - gloves and eye protection when handling/mixing concentrate
      Uses - sanitizing floors throughout the animal facility and sanitizing water bottle stoppers and sipper tubes by soaking for 10 minutes prior to washing.
      Specific uses- Mopping floors and floor machine (T500 or Clarke CA60)
      Efficacy - *Staphylococcus aureus, Enterobacter aerogenes, Escherichia coli, Listeria monocytrogenes, Salmonella typhimurium, Psuedomonus aeruginosa,* and *Saccharomyces cerevisiae*
      Contact time - 5 minutes at ambient temperature.

   b. **Sporicidin**
      Active ingredient - phenol solution
      Preparation -used undiluted
      Safety – may cause eye irritation; avoid contact with skin or clothing
      PPE – gloves and eye protection recommended
      Uses - general disinfectant and deodorizer for hard non-porous **surfaces that do not come in contact with animals.** If used on surfaces that come in contact with animals, surface must be rinsed with alcohol and allowed to dry prior to animal contact.
      Specific Uses- medical equipment, countertops, carts, and walls
      Efficacy - germicidal including vegetative organisms, passes AOAC efficacy standards for institutional and hospital disinfection
      Contact time – 5 minutes for viruses, 10 minutes for bacteria

   c. **Chlorhexidine**
      Active ingredient –chlorhexidine gluconate solution
      Preparation - diluted 1 oz:1 gallon water
      Safety – corrosive, avoid contact with eyes and skin
      PPE – gloves and eye protection when handling/mixing concentrate
      Uses - bacteriostatic and bactericidal, general disinfectant for use on rubber and surgical equipment.
      Specific uses- anesthesia breathing hoses, bellows, flutter valves and hard non-porous surfaces of surgical monitoring equipment.
      Efficacy - broad-spectrum biocide effective against Gram-positive bacteria, Gram-negative bacteria and fungi. Effective against many viruses.
      Contact time - 1 minute

   d. **Oxivir**
      Active ingredient –accelerated hydrogen peroxide solution
      Preparation – Oxivir Tb and Oxivir wipes are ready to use. Oxivir Five 16 concentrate is diluted 1 part concentrate: 16 parts water
      Safety – excellent safety, avoid contact with eyes and skin
      PPE – gloves and eye protection when handling/mixing concentrate

Uses -general disinfectant for hard non-porous surfaces in laboratory animal procedural areas and for **surfaces that come in contact with animals**.
Specific uses- forceps or gloved hand-dipping between handling animals, biosafety cabinet chambers, animal restrainers/containers used in imaging (e.g., irradiator pie cages, anesthetic chambers/nose cones, MRI/Xenogen chambers, behavioral equipment)
Efficacy – virucide, bactericide, fungicide, mildewcide.
Contact time – Disinfects in 1 minute; Tuberculocidal in 5 minutes

e. **Quatricide PV-15**
Active ingredient – quaternary ammonia
Preparation – 1:256 dilution (1/2oz. or 15ml Quat/1 gallon water) good for 14 days
Safety – gloves and eye protection when handling/mixing concentrate
PPE – gloves and eye protection when handling/mixing concentrate.
Uses – general disinfectant/detergent for hard non-porous surface disinfection
Specific uses – Cat room floors (free roaming cats), refrigerated truck box.
Efficacy – Fungicidal, bactericidal and virucidal
Contact time – 10 minutes

f. **Bleach 10%**
Active ingredient – sodium hypochlorite
Preparation – 1:10 dilution (1 part household bleach: 9 parts H_2O) good for 1 week
Safety – corrosive, avoid contact with eyes and skin
PPE – gloves and eye protection when handling/mixing concentrate.
Uses – High level disinfectant suitable for BSL-2&3, ABSL-2 & 3 disinfection of hard surfaces.
Specific uses – counter tops, carts, Biosafety cabinets. After appropriate contact time metal surfaces should be rinsed/wiped with alcohol. (must be followed with alcohol rinse).
Efficacy – virucide, bactericide, fungicide, mildewcide
Contact time – 10 minutes for hard non-porous surface disinfection; 15-20 minutes for biohazard protocols.

5. **ACCEPTABLE HARD SURFACE DISINFECTANTS** (e.g., table tops, equipment).

NAME	EXAMPLES*	COMMENTS
Quaternary Ammonium	Roccal®, Cetylcide®	Rapidly inactivated by organic matter. Compounds may support growth of gram-negative bacteria.
**Chlorine	Sodium hypochlorite (Clorox ® 10% solution) Alcide®)	Corrosive. Presence of organic matter reduces activity. Chlorine dioxide must be fresh (<14 Days old); kills vegetative organisms within 3 minutes of contact.
Aldehydes	Glutaraldehyde (Cidex®, Cidex Wipes®)	Rapidly disinfects surfaces. Toxic. OSHA has set exposure limits.
Hydrogen Peroxide	Oxivir Bioquell HPV 30%	Effective disinfectant, useful in deconning rooms, hard surfaces, non-corrosive.
Phenolics	Lysol®, TBQ®; Sporicidin	Less affected by organic material than other disinfectants.
Chlorhexidine	Nolvasan®, Hibiclens®	Presence of blood does not interfere with activity. Rapidly bactericidal and persistent. Effective against many viruses.

0.6% ortho-Phthaladehyde	Metricide OPA Plus	Presence of protein or bioburden will decrease activity. Contact time is 12min on hard surfaces; rinse with sterile water if using on surfaces that will touch the animal.

* The use of brand names as examples does not indicate a product endorsement. Always follow manufacturer's instructions.

6. ACCEPTABLE METHODS OF INITIAL INSTRUMENT STERILIZATION OR HIGH LEVEL DISINFECTION

AGENTS	EXAMPLES ^	COMMENTS
Physical: Steam sterilization	Autoclave	Effectiveness dependent upon temperature, pressure and time (e.g.,121^{o}C for 30 min. vs. 132^{o}C for 15
Chlorine[1]	Chlorine Dioxide (Alcide®)	Presence of organic matter reduces activity. Must be freshly made (< 24hrs)
Aldehydes[1]	Formaldehyde (6% sol.), Glutaraldehyde	Many hours required for sterilization. Corrosive and irritating. Consult safety representative on proper use.
0.6% ortho-Phthaladehyde	Metricide OPA Plus	Presence of protein or bioburden will decrease activity. Contact time is 12min for instruments/ equipment/catheter high level disinfection; then immerse in sterile saline for one minute and flush lumens with sterile saline

* The use of brand names as examples does not indicate a product endorsement. Always follow manufacturer's instructions.
[1] Instruments must be rinsed thoroughly with sterile saline to remove chemical sterilants before being used.

7. ACCEPTABLE SKIN DISINFECTANTS

NAME	EXAMPLES ^	COMMENTS
Iodophors	Betadine®, Prepodyne®, Wescodyne®	Reduced activity in presence of organic matter. Wide range of microbe killing action. Works best in pH 6-7.
Chlorhexidine	Nolvasan®, Hibiclens®	Rapidly bactericidal and persistent. Effective against many viruses. Excellent for skin. Presence of blood does not interfere with activity.

* The use of common brand names as examples does not indicate a product endorsement.
NOTE: Alternating disinfectants is more effective than using a single agent. For instance, an iodophore scrub can be alternated with alcohol, followed by a final soaking with a disinfectant solution. **Alcohol, by itself, is not an adequate skin disinfectant**. The evaporation of alcohol or alcohol-based products can induce hypothermia in small animals.

8. ACCEPTABLE INSTRUMENT STERILIZATION OR HIGH LEVEL DISINFECTION BETWEEN SURGERIES

AGENTS	EXAMPLES *	COMMENTS
Heat	Hot Bead Sterilizer	Used to resterilize instrument tips. Remove gross contamination before using. After “hot bead,” rinse instrument with sterile saline to cool.

*The use of common brand names as examples does not indicate a product endorsement.
[1] Instruments must be rinsed thoroughly with sterile water or saline to remove chemical sterilants before being used**.**

Approved: **Date:**