



Action Products, Inc.

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THE EFFECTS OF DISINFECTANTS ON ACTION® PADS

Testing was performed to determine the effects of disinfectants on Action pads. Sixteen commercially available surface disinfectants, germicidal detergents, and cleansers made for hospital use were tested. Chlorine bleach and isopropyl alcohol were also tested.

Test pads were disinfected according to product use instructions, and then subjected to further exposure in their disinfecting solution, soaking for up to 18 days. Any changes in the pads were observed and recorded. All test pads were standard 12 inches by 4 inches by .25 inch thick. Action O.R. pads with 3m clear and 5m tan polyether film. Test solutions of commercially available disinfectants were prepared according to the product labels. Where dilution of a concentrate was required, regular chlorinated tap water was used. An undiluted 70% solution of isopropyl alcohol was used in the testing. Chlorine bleach was tested in two concentrations; undiluted (5.25 sodium hypochlorite). All tests were performed at room temperature (68-72 F).

Some product labels recommended spraying a surface with disinfectant and then wiping it clean after 1-10 minutes. Other products' instructions require soaking the product in disinfectants for a period of time, usually about 10 minutes. A few of the product labels recommend longer soak times, in one case up to 10 hours. In most cases the pads were unaffected by the disinfectant following recommended use. The only commercial disinfectant which produced a visible effect with recommended use was Sagrotan, which is approximately 50% alcohol. This product permeated the film and caused swelling of the Akton Polymer within about 45 minutes. The recommended soaking time for disinfection with Sagrotan is 60 minutes.

Extended soaking of test pads (up to 18 days) in disinfectants produced a variety of results. Disinfectants with dimethyl ammonium chloride, dialdehydes, and chlorhexidine gluconate as active ingredients had no effects. Extended soaking in phenols and potassium peroxomonosulphate solutions had very slight effects. These effects included a slight wrinkling of the seal edges, and, in some cases, a slight film discoloration. There may also have been a slight swelling of the Akton or shrinking of the film.

Extended soaking of pads in disinfectants containing alcohol resulted in slight to extreme swelling of the polymer depending on the amount of alcohol present. The polymer also lost some of its softness. It should be noted that when pads were removed from alcohol solutions, the swelling and stiffness disappeared after several days.

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Of the chlorine solutions, one spray disinfectant containing .55% sodium hypochlorite was tested. Two concentrations of clorox were also tested. For several days, no change in the pads could be detected. After 3-6 days, a dulling of the film surfaces was noted. Eventually, the film began to decompose, and obvious disintegration became apparent in 6 to 15 days.

Dimethyl Ammonium Chloride

Viro GUARD-Q	no effect
SaniMaster III	no effect
Hi-Tor Plus (Huntington)	no effect
Ascend (Huntington)	no effect

Dialdehyde

Metricide	no effect
Buraton 10F	no effect

Chlorhexidine Gluconate

Hibiclens	no effect
Betasept 4%	no effect

Potassium Peroxomonosulphate

Perform	24 hrs., edge seals wrinkled; 6
days, possible	slight swelling

Phenol

Terralin	24 hrs., slightly wrinkled edge
seals	
ProSpray (Cottrell)	24 hrs., slightly wrinkled edge
seals	
Fen-o-cide	10 hrs., wrinkled edge seals; 3
days, slight	Film discoloration and possible
	slight swelling
	of the pad
Beaucoup (Huntington)	10 hrs., wrinkled edge seals; 3
days, film	
	Discoloration and possible slight
swelling of	the pad

Alcohol

Cavicide spray(15%)	10 hrs., wrinkled edge seals and
slight	
increases with time	Swelling of the pad which
Sagrotan med (50%)	30 minutes, pad swelling which
increases to	extreme swelling and stiffness

Isopropyl (70%)
increases to

10 minutes, pad swelling which
extreme swelling and stiffness

Chlorine (sodium hypochlorite)
Dispatch (Caltech) (.55%)
days, film

6 days, film looks dulled; 15

Clorox, with 10 parts water (.525%)
apparent

Decomposition is apparent
6 days, film decomposition is

Clorox (5.25%)
6 days, total

3 days, film surface looks dulled;
film decomposition

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