

ADOXYSAN LA996

Liquid Peroxygen Sanitiser

ADOXYSAN LA996 is a powerful liquid sanitizer formulated from a stabilised blend of peracetic acid in hydrogen peroxide. **ADOXYSAN LA996** solutions are used cold and exhibit broad spectrum activity against all types of aerobic and anaerobic bacteria (including spore formers), fungi, yeasts, algae and viruses.

ADOXYSAN LA996 solutions are colourless, non-staining, free rinsing and virtually odourless at use concentrations.

ADOXYSAN LA996 solutions decompose to form water, oxygen, and acetic acid which are readily biodegradable. Using **ADOXYSAN LA996** as a sanitiser presents no environmental problems with disposal of used solutions.

APPLICATION

ADOXYSAN LA996 decomposes to form water, oxygen and acetic acid and can be used in no *rinse* procedures in the food industry for final sanitation of cleaned surfaces.

ADOXYSAN LA996 finds application in the food processing industries for the sanitation of all food contact surfaces such as kettles, conveyors, fillers, blanches, slicers, eviscerating tables, mincers, ovens, tanks, boning tables, syrup pans and mixers.

ADOXYSAN LA996 is non-foaming and is ideal for CIP sanitation in dairy, food, water treatment and cooling plants, laundries, animal health laboratories, soft drink, wineries and brewing industries.

ADOXYSAN LA996 may be used in animal houses for the sanitation of breeder boxes, incubators, feeders, drinking water supply lines and other surfaces.

ADOXYSAN LA996 can also be used for continuous sanitation of the drinking water in animal houses.

FEATURES & BENEFITS

1. Non foaming formulation makes **ADOXYSAN LA996** ideally suited to CIP applications.
2. Products of decomposition present no problems on food contact surfaces - can be safely used in *no rinse* sanitation procedures. It drains freely to leave no residues.
3. Products of decomposition present no environmental problems with discharge of effluent waters. Effluent waters contain low levels of BOD. It is beneficial to effluent.
4. Rapid activity against wide range of micro-organisms, even at low temperatures.
5. Easy to use. Can be used for CIP systems, flood filling, spray balls and fogging.
6. Harmless to plant. Passivates stainless steel. Will not cause corrosion.

CHEMICAL AND PHYSICAL PROPERTIES

Appearance:	Clear, colourless, thin liquid
Flash Point:	Non-flammable
Odour (Concentrate):	Acrid odour
Odour (At Use Solution):	Almost odourless
Specific Gravity:	1.13
pH (Concentrate):	1.0
pH (1% solution):	3.2

METHOD OF USE

ADOXYSAN LA996 solutions are relatively unaffected by organic matter. It kills micro-organisms such as aerobic and anaerobic bacteria and their spores, yeasts, moulds, fungi and their spores and viruses on contact. There are no resistant species.

ADOXYSAN LA996 solutions leave no residue and have little cleaning ability. For optimum sanitation results surfaces should be adequately pre-cleaned prior to sanitation.

ADOXYSAN LA996 should not be exposed to heat, direct sunlight, and sources of ignition or contamination. It is incompatible with acids, alkalis, reducing agents, oxidising agents, rust, resins and combustible materials.

ADOXYSAN LA996 exhibits optimum biocidal activity at pH < 7. Adequate rinsing of alkali cleaned surfaces should be carried out prior to final rinse sanitation with **ADOXYSAN LA996**.

There is no need to post rinse after sanitising surfaces with **ADOXYSAN LA996**. If post rinsing of surfaces is required, it should be done with sterile water to prevent recontamination of the surfaces.

ADOXYSAN LA996 solutions should be used within one hour after dilution and should not be reused.

ADOXYSAN LA996 solutions can be used at ambient temperature (about 20°C) but are effective over the range of 5 - 80°C

ADOXYSAN LA996 is typically used at dilutions of 0.05 - 2% v/v with contact times of 10 - 30 minutes.

ADOXYSAN LA996 may be fogged onto equipment, walls, and floors and into the air to kill surface and dust borne microbes.

Use Concentrations:

Heavily soiled surfaces	1 - 2% v/v
Lightly soiled surfaces	0.2 % v/v
Final rinsing of surfaces	0.05% v/v
Process water streams	0.15 % v/v (max.)
Fruit and vegetable surfaces	0.15 % v/v (max.)
Sanitation of animal house drinking waters	0.05% v/v

EFFECT ON MATERIALS OF CONSTRUCTION

ADOXYSAN LA996 can be used to sanitise plants containing stainless steel, glass, polyethylene, PVC, PTFE(Teflon), Viton and fluorinated silicone rubbers. It should not be used with brass, copper and its alloys, nickel and its alloys, mild steel, aluminium, natural rubbers, nitrile rubbers, neoprene or ABS.

BACTERIACIDAL EFFECTIVENESS

ADOXYSAN LA996 contains 5% peracetic acid. A 0.2% solution in water contains 100 ppm of peracetic acid. Test results below show that at this concentration it is effective against Staphylococcus aureus and Escherichia coli.

The antimicrobial efficacy of peracetic acid was determined using the procedure of the standard A.O.A.C. sanitizing test. The samples were diluted with 500 ppm hard water and employed at 25 degrees C. The bacteria used in the test procedure were S. aureus and E. coli, and TGE plating medium was employed. Exposure time of the compositions to the bacteria was 30 seconds. The neutralizer employed in the testing procedure contained 0.1% thiosulfate, 1.0% peptone, and 0.025% catalase. The antimicrobial activity of Examples 12-14 is summarized in Table X below.

The cidal activity of Peracetic acid is summarized in below. At 500 ppm of product with 5.4% peracetic acid there was about 27 ppm of peracetic acid. At 2000 ppm of product there was about 108 ppm of peracetic acid.

Cidal Activity of Peracetic Acid (PAA)

Concentration (PAA)	pH	Ave. Log reduction <i>sup.(a)</i>	
		S. aureus	E. coli
27 ppm	3.90	NMA. <i>sup.(b)</i>	NMA
108 ppm	3.50	4.60	>7.12
108 ppm	3.49	6.38	6.64
108 ppm	3.49	4.17	--
108 ppm	3.45	4.77	6.44

sup.(a) Log 4 reduction reduces a bacterial population from 1,000,000 to 100. Log 6 reduction reduces bacteria from 1,000,000 to 1.

sup.(b) No measurable activity

Peracetic acid has been reported to be effective against other bacteria including Legionella pneumophila. One reference (6139756) using peracetic acid at 200 ppm to backwash swimming pool filters gave the following results.

Bacteria	1 minute	2 minutes	10 minutes
E. coli	No survivors	No survivors	No survivors
Coliform germs	No survivors	No survivors	No survivors
Pseudomonas aeruginosa	No survivors	No survivors	No survivors
Legionella pneumophila	No survivors	No survivors	No survivors

Listeria

In the last decade, listeriosis, caused by *L. monocytogenes*, has emerged a major food borne disease. Because the bacterium is resistant to low pH and high sodium chloride concentrations and grows at refrigeration temperatures, it is very difficult to eradicate from food processing plants. Treatment of *L. monocytogenes* is shown in the table below

Treatment of ***Listeria*** *monocytogenes* Scott A

Treatment	time (min)	log count	log count
None	0	5.85
50 ppm Peracetic acid pH 2.8	0.5	<1	>4.85
	1	<1	>4.85
	5	<1	>4.85

The treatment of 50 ppm Peracetic acid at pH 2.8 proved very effective against ***Listeria*** *monocytogenes*, with no cells recovered at 0.5 min.