Update August 2024

List of Approved On-Line Reprocessing (OLR) Antimicrobial Systems for Poultry

Approved OLR System	Company Name/ Distributor	Substance (antimicrobial) and if applicable, FDA's Food Contact Notification (FCN)	PPM Concentration (range), pH, contact time, temperature (if applicable)	Method of Application (e.g., Spray, Wash, Inside Outside Bird Washer (IOBW) with or without brushes
Accutab Chlorination™	Southeastern Systems Inc.	Chlorine (Calcium hypochlorite)	Between 20 and 50 ppm, pH between 6 - 7, Citric acid Sodium bisulfate or an approved acidifier will be used to adjust pH level, spray rate in brush cabinet 5-10 gallons per minute.	IOBW and brush cabinet with spray nozzles.
Acid FX 32	Craft Chem, Inc	An aqueous solution of citric acid and hydrochloric acid adjusted to a pH of 1.0 to 2.0	pH: 1.0-2.0; contact time: 2 to 5 seconds; pressure: 5-40 psi; temperature: 34°-75°F	Spray Cabinet
AFCO 4360 FC-100	AFCO	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1389)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 800 ppm, and HEDP not to exceed 96 ppm, minimum contact time of three (3) to ten (10) seconds	Spray
AFCO 4363 Perasafe 23	AFCO	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1389)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 765 ppm, and HEDP not to exceed 62.6 ppm, with a contact time of three (3) to ten (10) seconds	Spray
AFCO Peragonn™	AFCO	An aqueous solution of Peroxyacetic acid,	Peroxyacetic acid (not to exceed 220	Spray cabinet

	Safe Foods Corporation	hydrogen peroxide, and HEDP. FCN 1089	ppm), 160 ppm for hydrogen peroxide, and 11 ppm for 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP). Delivery pressure of 55-80 psi for a total contact time that can be from 55-65 seconds.	
Amplon™ formerly AFTEC 3000 (AFT Clear 3000)	Zoetis formerly Advanced Food Technologies	Sulfuric acid, sodium sulfate and water	Fed continuously with tap water dosed with Amplon™ to a target pH of 1.8 +/- 0.4. For spray cabinets, the fresh mixture will be delivered to spray bars at a minimum system pressure of 10 psi and mixture flow between 5 gal/minutes and 10 gal/minute.	Spray cabinet
Apex Clear	SafeQuest Technologies/ PSSI Chemical Innovations	Sulfuric acid, sodium sulfate and water	Fed continuously with tap water dosed with Apex Clear™ to a target pH of 1.8 +/- 0.4. For spray cabinets, the fresh mixture will be delivered to spray bars at a minimum system pressure of 10 psi and mixture flow between 5 gal/minutes and 10 gal/minute.	Spray Cabinet
ASCEND™	Zee Company	Acidified Sodium Chlorite.	Acidified Sodium Chlorite 500 to 1200 ppm in combination with citric acid, sodium bisulfate (sodium acid sulfate), or any GRAS acid sufficient to achieve a pH of 2.3 to 2.9 in accordance with 21 CFR 173.325 (Note: The pH depends on the type of poultry product.)	Spray
AVGard®XP	Danisco Inc.	Anhydrous sodium metasilicate (SMS) and Sodium sulfate	SMS rinse applied at a level of 4% +/- 2%	First Spray Cabinet - 20 ppm chlorine Second Spray Cabinet - SMS rinse

		or sodium carbonated as an anti- scaling agent		applied at a level of 4% +/- 2% utilizing drench nozzles at sufficient flowrates and pressures so as to reduce particulate and microbial levels.
Avibrom	Albemarle Corp.	1,3-dibromo-5,5-dimethylhydantion DBDMH	AviBrom minimum of 60 ppm and maximum of 450 ppm available bromine; 0.1 gallons of aqueous bromine solution for up to 15 seconds; Flow of water 25 psi pressure and 10 gallons per minute water input.	First Spray Cabinet - 60-100ppm available bromine Second Spray Cabinet - recycled solution used for this cabinet to meet the requirements of water reuse, specifically 9 CFR 416.2(g)
Bio-Cide	Bio-Cide International, Inc.	Acidified sodium chlorite FCN 739	Mixing an aqueous solution of sodium chlorite with any GRAS acid to achieve a pH of 2.2 to 3.0 then further diluting this solution with a pH elevating agent (i.e., sodium bicarbonate, sodium carbonate, or an un-acidified sodium chlorite solution) to a final pH of 5.0 to 7.5. The final sodium chlorite concen-tration does not exceed 1200 mg/kg and the chlorine dioxide concentration does not exceed 30 mg/kg.	Spray cabinet
Biosan 2205 MPS, Biosan 1510 MPS, Oxysan 2205, Oxysan 1510	Biosan, LLC	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-disphonic acid (HEDP) and/or dipicolinic acid (DPA), and optionally, sulfuric acid. FCN 2036 replaces FCN 1639	PAA not to exceed 2000 ppm, hydrogen peroxide, will not exceed 1474 ppm, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) will not exceed 136 ppm; and dipicolinic acid (DPA) will not exceed 4 ppm;	Dip Dip Tank Drag Thru Dip Tank Spray

			contact time: one (1) – thirty (30) seconds; pH 1.0 – 2.0; pressure: 10 – 90 psi	
BirkoSide 15/ BirkoSide 22	Brainerd Chemical Company, Birko Corp.	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA). (FCN 1823)	Not to exceed 2000 ppm PAA, 1474 ppm HP, 14 ppm HEDP, and 0.88 ppm DPA. pH range: 2-10; spray, maximum contact time of fifteen (15) seconds with a pressure of 5-170 psi; dip dwell/contact time, 5-40 seconds	spray, dip
Birkoside MP-2	Envirotech, Birko Corp.	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). FCN 887	PAA between 80-150 ppm, HP not to exceed 110 ppm, HEDP not to exceed 13 ppm or DPA concentration not to exceed 4.00 ppm. pH 3.0 – 7.0, contact time between 3 – 30 seconds.	Spray cabinet
CECURE™	Safe Foods Corp	Cetylpyridinium chloride (The solution shall also contain propylene glycol complying with 21 CFR 184.1666 at a concentration of 1.5 times that of cetylpyridinium chloride). May be used in combination with an approved defoamer (i.e. Foamfix) in accordance with 21 CFR 173.340 and 9 CFR 424.21(c)	As a fine mist spray of an ambient temperature aqueous solution applied to raw poultry carcasses/ parts prior to immersion in a chiller, at a level not to exceed 0.3 gram cetylpyridinium chloride per pound of raw poultry carcass/ parts, provided that the additive is used in systems that collect and recycle solution that is not carried out of the system with the treated poultry carcasses/ parts, or	Spray cabinet, drench, dip

			Except when used as an immersion such as a dip tank (≤10 seconds), an aqueous solution such as a drench (minimum of 2 to 5 seconds) applied to raw poultry carcasses/ parts either prior to or after chilling at an amount not to exceed 5 gallons of solution per carcass, provided that the additive is used in systems that recapture at least 99 percent of the solution that is applied to the poultry carcasses/ parts. The concentration of cetylpyridinium chloride in the solution applied to the carcasses/ parts shall not exceed 0.8 percent by weight. When application of the additive is not followed by immersion in a chiller, the treatment will be followed by a potable water rinse of the carcass/parts. The potable water may contain up to 50 ppm free available chlorine.	
ChemSan RBR	ChemStation	Peroxyacetic acid (PAA), FCN 887	PAA between 80-150 ppm and a pH between 3-7	Spray cabinet/ IOBW
ChemSan RBR-22	EnviroTech	Peroxyacetic acid (PAA), hydrogen peroxide (HP), etic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid	An aqueous mixture of PAA between 80-2000 ppm and HP not to exceed 770 ppm. HEDP not to exceed 100 ppm, or	1) Spray Cabinet 2) Dip

		(HEDP), or dipicolinic acid (DPA). (FCN 1806)	DPA concentration not to exceed 4.00 ppm. pH between 2.0- 7.0; contact time 1) spray cabinet, 15-120 seconds 2) dip, 5-40 seconds.	
ChemSan RBR-XC ChemSan RBR-XL	Envirotech	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 1806)	The concentrated PAA formula is diluted and is to be supplied to the application at a concentration of: PAA between 80 – 2000 ppm and HP not to exceed 770 ppm. HEDP not to exceed 100 ppm or DPA concentration not to exceed 4.00 ppm. pH 2.0 – 7.0, contact time 1) spray cabinet, 15 – 120 seconds 2) dip, 5 - 40 seconds.	1) Spray Cabinet 2) Dip
ChemSan T22	Brainerd Chemical Company, ChemStation	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA). (FCN 1823)	Not to exceed 2000 ppm PAA, 1474 ppm HP, 14 ppm HEDP, and 0.88 ppm DPA. pH range: 2-10; spray, maximum contact time of fifteen (15) seconds with a pressure of 5-170 psi; dip dwell/contact time, 5-40 seconds	spray, dip
ChloroSan	Ecolab Inc., Alcide Corporation	Acidified sodium chlorite	Between 500 to 1200 ppm in combination with any GRAS acid at a level sufficient to achieve a pH of 2.3 to 2.9.	Spray cabinet,
Circlean IOBW Hypochlorous acid	Tecumseh Farms Smart Chicken, LLC	A mixture of sodium hypochlorite briquettes, carbon dioxide and water (citric acid may be added for chlorine tank descaling)	Between 20 – 50 ppm hypochlorous acid solution, pH 5-7**,** contact time of 2-4 seconds at 5-170 psi. 50% Citric acid at a final concentration of 1.995 ppb.	IOBW (with small brushes inside)

Citrilow™ Citrilow Plus™	Safe Foods Corporation	Citrilow™, Citrilow Plus™ formerly Precure™, is an aqueous solution of Citric and Hydrochloric acids	pH 1.0 – 2.0, contact time is a minimum 2 seconds	Spray cabinet
CMS Clear	CMS Technology, LLC	An aqueous mixture of sulfuric acid, sodium sulfate, and water	The aqueous mixture is to be supplied for the spray application at a target pH of 1.8, with a range of 1.4 to 2.2. The mixture will be delivered at a minimum system pressure of 10 psi and mixture flow between 5 to 10 gallons per minute.	Spray Cabinet
DiverContact P16 and DiverContact XP	Diversey, Inc	An aqueous mixture containing peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA) and optionally sulfuric acid (FCN 1936)	Concentration: 2000 ppm PAA, 1474 ppm HP, 118 ppm HEDP and 0.5 ppm DPA; pH Range: 2.0-8.0; Exposure Time: 5-120 seconds, Delivery Method: Spray pressure: between 10 and 90 psi; wash, rinse and dip contact time between 5 and 30 seconds	Wash, dip, rinse, spray cabinet
DiverContact® P16	Diversey, Inc. and Cryovac, Inc.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and sulfuric acid (optional, as a catalyst) and water (FCN 1284)	An aqueous mixture of peroxyacetic acid (PAA) not exceeding 2000 ppm and 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) and 136 ppm as listed in FCN 1284. Application pressures range between 20 and 90 pounds per square inch with a contact time between 3 and 30 seconds. An aqueous mixture of	Spray

			peroxyacetic acid (PAA) not exceeding2000 ppm and 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) and 136 ppm as listed in FCN 1284. Application Pressures range between 20 and 90 pounds per square inch with a contact time between 3 and 30 seconds.	
Enviro Tech	Enviro Tech Chemical Services, Inc.	Peroxyacetic acid FCN 887	Between 80-150 ppm and a pH between 3-7	Spray cabinet/ IOBW
FRESHFX L-12	PeroxyChem LLC, formerly SteriFx, Inc.	A mixture of GRAS acids (citric, phosphoric and hydrochloric) that utilizes low pH to kill pathogens	pH 2.2 or less	Spray cabinet
FreshFX LP	PeroxyChem LLC, formerly SteriFx, Inc.	A mixture of GRAS Acids (citric, phosphoric and sulfuric) that utilizes low pH to kill pathogens	pH of 2.2 or less	Spray cabinet/
HydriShield PA 15 LP, HydriShield PA 15 HP, HydriShield PA 22 HP, HydriShield PA 22 LP, HydriShield PA 22 SF	Hydrite Chemical Co.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, optionally, sulfuric acid, and optionally, 1-hydroxyethylidene1,1-diphosphonic acid (HEDP), and/or optionally dipicolinic acid (DPA) (FCN 2274) FCN 2274 replaces FCN 1872	PAA between 20-2000 ppm, HP not to exceed 1474 ppm, and HEDP not to exceed 100 ppm; pH Range: 2.0-8.0; exposure time: 5-60 seconds; pressure: 5-150 psi	spray cabinet wash dip rinse IOBW
Hydrishield HC	Hydrite Chemical Co.	A concentrated formula of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-	The concentrated PAA formula is diluted and is to be supplied to the application at a concentration of: PAA between 80-	Dip Spray Cabinet

		hydroxyethylidene-1,1-disphonic acid (HEDP), or dipicolinic acid (DPA). FCN 1806	2000 ppm, HP will not exceed 770 ppm, HEDP will not exceed 100 ppm or DPA will not exceed 4.00 ppm; pH 2.0 – 7.0, spray cabinet contact time: 15 – 120 seconds; dip contact time: 5 - 40 seconds.	
Hypochlorous acid	CMS Technology, LLC	Hypochlorous acid acidified with CMS Blue, a combination of sulfuric acid, ammonium sulfate, copper sulfate, and water	CMS Blue added to 20-50 ppm chlorinated water to form hypochlorous acid at a pH range of 5 to 7. The mixture will be delivered at a system pressure range of 5-170 p.s.i.	Spray cabinet
Hypochlorous Acid	Tyson Foods	Hypochlorous acid, acidified chlorine	Between 20 – 50 ppm hypochlorous acid solution, pH 5 to 7	Spray cabinet
Hypochlorous acid	TOMCO2 Systems	Hypochlorous acid	Not to exceed 50 ppm, contact time minimum of 10 seconds. Delivery pressure: 5-170 psi, pH: 5-10	IOBW/spray cabinet system
INSPEXX™ 100	Ecolab, Inc.	An aqueous mixture of peroxyacetic acid (PAA), peroxyoctan-oic acid, acetic acid, octanoic acid, hydrogen peroxide, and 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP)	1. PAA Concentration: The PAA concentration is applied at a concentration between 20-220 ppm using a single spray cabinet, wash or rinse. 2. Carcass Exposure Time: Carcass exposure to the PAA concen-tration is a minimum of 8 seconds. 3. Pressure: Cabinet water pressure is a minimum of 20 psi.	IOBW/spray wash
Inspexx 150	ECOLAB	Peroxyacetic acid (PAA), acetic acid, hydrogen peroxide, and 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP). FCN 1096	The level of PAA is applied at a concentration between 20- 220 ppm.	Spray cabinet/ Wash/IOBW

Inspexx 150, 3DT Inspexx 150, Inspexx 250, 3DT, Inspexx 250	ECOLAB	Peroxyacetic acid (PAA), acetic acid, hydrogen peroxide, and 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP). FCN 1495	The level of PAA is applied at a concentration between 20- 2000 ppm**,** exposure time: minimum of five (5) seconds, pH 2.0-8.0, pressure: minimum of 5 psi.	Spray cabinet/ Wash/IOBW
Inspexx 150TM, 3DT Inspexx 150TM, Inspexx 250TM, or 3DT Inspexx 250TM	Ecolab	Peroxyacetic acid (PAA), hydrogen peroxide, 1-hydroxyethyl idine-1, 1-diphosphonic acid (HEDP). (FCN 1745)	The concentration of PAA is between 20-2000 ppm, 1474 ppm hydrogen peroxide and 118 ppm 1-hydroxyethylidene-1, 1-diphosphonic acid in spray, exposure time: between 5 and 60 seconds, pH 2.0-8.0, pressure: minimum of 5 psi.	Spray cabinet/wash IOBW
Inspexx™150; Inspexx™250; Inspexx™250 S; Inspexx™250 PLUS; Inspexx™ 250 S PLUS	Ecolab	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxethylidine- 1,1-disphonic acid (HEDP) and/or dipicolinic acid (DPA), and optionally, sulfuric acid. (FCN 2046)	The concentration of PAA is applied at 20 –2000 ppm PAA,1474 ppm hydrogen peroxide and 136ppm 1-hydroxyethylidene-1,1-diphosphonic acid, and 6.7 ppm DPA; Spray exposure time: 5 – 60 seconds, pH: 2 – 8; pressure: minimum of 5 psi. Use a PAA test kit or in-line monitor to verify the PAA concentration in the water.	Spray cabinet/ Wash/IOBW
Interox ProxiViv 15 Interox ProxiViv 22	Solvay Chemicals, Inc.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA) and sodium hydroxide. FCN 1641	PAA not to exceed 2000 ppm, HP will not exceed 933 ppm, HEDP will not exceed 120 ppm, and DPA will not exceed 0.5 ppm; pH range: 2-10; spray contact time: maximum of 15 seconds; spray	Spray Dip

			pressure: 5-120 psi; dip/dwell contact time: 5-40 seconds	
IOBW Hypochlorous acid	Tecumseh Farms Smart Chicken, LLC	A mixture of Sodium hypochlorite briquettes, carbon dioxide and water (citric acid may be added for chlorine tank descaling)	Between 20 – 50 ppm hypochlorous acid solution, pH 5-7, contact time of 2-4 seconds at 5-170 psi. 50% Citric acid at a final concentration of 1.995 ppb	IOBW
KF 27145	Kroff Tech	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and optionally sulfuric acid (SA); (FCN 1693)	200-2000 ppm PAA, pH Range: 1.0-7.0, Contact Time: 1-120 seconds for spray, wash, rinse, and dip Spray pressure: 5–100 psi	wash, dip, rinse, spray
Microtox 5 P	Valley Chemical Solutions	Peroxyacetic acid (PAA), hydrogen peroxide, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) FCN 1247	PAA is not to exceed 2000 ppm, 750 ppm hydrogen peroxide, and 136 ppm HEDP. Delivery pressure is 10-60 psig.	Spray
Microtox Plus	Valley Chemical Solutions	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) FCN 1247	The concentrated PAA formula is diluted and supplied to the spray cabinet at a concentration between 25 - 2,000 ppm, 750 ppm hydrogen peroxide, and 136 ppm HEDP. Delivery pressure is 10-60 psig.	Spray
Microtox Plus	Valley Chemical Solutions	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, sulphuric acid and 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) (FCN 1514)	1) PAA not to exceed 2000 ppm, hydrogen peroxide not to exceed 666 ppm, acetic acid, sulfuric acid, and HEDP not to exceed 130 ppm. 2) PAA not to exceed 2000 ppm, hydrogen peroxide not to exceed 666 ppm, acetic acid, sulfuric acid, and HEDP not to exceed 130 ppm; contact time: 12-40	1) Spray Cabinet 2) Dip

			seconds depending on line speed	
Microtox Prime	Valley Chemical Solutions	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1- diphosphonic acid (HEDP), water, and optionally sulfuric acid (FCN 1844)	An aqueous mixture of PAA between 25-2000 ppm, HP not to exceed 892 ppm, and HEDP not to exceed 7 ppm, pH between 1.0-8.5; pressure between 5-100 psi, contact time 2-60 seconds spray cabinet or 5-30 seconds for dip tank drag thru tank and enters the chiller within 60 seconds after exiting the tank.	Spray cabinet and Drag Thru Dip Tank
Microtox Ultra	Zee Company, Inc.	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, sulfuric acid (optional), 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1666)	1) PAA not to exceed 2000 ppm, hydrogen peroxide not to exceed 750 ppm, and HEDP not to exceed 10 ppm 2) PAA not to exceed 2000 ppm, hydrogen peroxide not to exceed 750 ppm, and HEDP not to exceed 10 ppm; contact time: 12-40 seconds depending on line speed	1) Spray Cabinet 2) Dip
OxyFusion	BioSafe Systems, LLC	Peroxyacetic acid (PAA), hydrogen peroxide (HP), glycerol, and optionally, acetic acid or sulfuric acid (FCN 1783)	Not exceeding 2000 ppm PAA and HP will not exceed 1474 ppm; pH 2.5 – 12.5, exposure time: 3 – 20 seconds, spray pressure: 25 – 45 psi	Spray, IOBW
OxyFX 22	CraftChem, Inc. Predictive Food Safety Solutions, LLC	An aqueous solution Peroxyacetic acid (PAA), acetic acid, hydrogen peroxide, and 1-hydroxyethyliden e-1, 1-diphosphoric acid (HEDP) FCN 1495	The level of PAA applied will not exceed 2000 ppm, hydrogen peroxide will not exceed 750 ppm,1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) will not exceed 136 ppm;	Spray

			contact time: two (2) – fifteen (15) seconds; pH 1.0 – 2.0; pressure: 40-80 psi	
OxypHresh 22	CMS Technology, LLC	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1379)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 728 ppm, and HEDP not to exceed 13.3 ppm; maximum contact time of fifteen (15) seconds; pressure of 5-170 psi	Spray Cabinet
OxypHresh 22	CMS Technology, LLC	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1- hydroxyethylidene-1, 1- diphosphonic acid (HEDP) and water. (FCN 1580)	Not exceed 2000 ppm PAA, hydrogen peroxide will not exceed 730 ppm, and HEDP will not exceed 14 ppm in spray for poultry carcasses measured prior to application; contact time: 0.5 – 120 seconds; pH 2-8; pressure: 0.5-60 psi	Spray
OxypHresh/ OxypHresh 22	Brainerd Chemical Company, CMS Technology, LLC	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA). (FCN 1823)	Not to exceed 2000 ppm PAA, 1474 ppm HP, 14 ppm HEDP, and 0.88 ppm DPA. pH range: 2-10; spray, maximum contact time of fifteen (15) seconds with a pressure of 5-170 psi; dip dwell/contact time, 5-40 seconds	spray, dip
Ozone	BOC Gas	An aqueous ozone solution.	Ozone applied at a rate of 3.5 to 4 ppm of ozone at a 3% concentration.	Spray
Pathiclean ™	TOMCO2 Systems	A blend of peroxyacetic acid, hydrogen peroxide, acetic acid, and optionally 1-	PAA not to exceed 220 ppm, HP not to exceed 110 ppm and acetic acid, HEDP not to	IOBW/spray cabinet system

		hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 887)	exceed 13 ppm or DPA concentration not to exceed 4.00 ppm. Contact time minimum of 10 seconds. Delivery pressure: 5-170 psi, pH: 3-7	
Pathiclean TOMCO2 Systems	TOMCO Equipment Co.	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 1806)	The concentrated PAA formula is diluted and is to be supplied to the application at a concentration of: PAA between 80 - 2000ppm, HP not to exceed 770 ppm. HEDP not to exceed 100 ppm, or DPA concentration not to exceed 4.00 ppm. pH 2.0 – 7.0, contact time 1) spray cabinet, 15 – 120 seconds 2) dip, 5 - 40 seconds.	1) Spray Cabinet 2) Dip
Pearl OX, All-O-San	Xgenex	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) and optionally sulfuric acid, (FCN 1638).	An aqueous mixture not exceeding 2000 ppm peroxyacetic acid (PAA), 950 ppm hydrogen peroxide (HP), 113 ppm acetic acid, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) and optionally, sulfuric acid; contact time: one (1) – 120 seconds; pH 2.0 – 8.0; pressure: 5 – 170 psi, tempera-ture: 32° to 99°F	Spray
Peracet™ 2000	CraftChem, Inc.	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1465)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 750 ppm, and HEDP not to	Spray Cabinet

			exceed 136 ppm, contact time of two (2) to fifteen (15) seconds	
Peraclean 22	Evonik Corporation	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, sulfuric acid (optional), 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA), sulfuric acid and water (FCN 1522)	The aqueous solution is to be supplied to the spray application at a concentration of: PAA not to exceed 1150 ppm, HP not to exceed 235 ppm, HEDP not to exceed 2.5 ppm and DPA not to exceed 0.5 ppm, pH 2-7, contact time of 1-15 seconds.	Spray
Perasan MP-2	Envirotech	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). FCN 887	PAA between 80-150ppm, HP not to exceed 110 ppm. HEDP not to exceed 13 ppm or DPA concentration not to exceed 4.00 ppm. pH 3.0 – 7.0, contact time between 3 – 30 seconds.	Spray cabinet
Perasan MP-2C	Envirotech	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP) or dipicolinic acid (DPA). (FCN 1806)	The concentrated PAA formula is diluted and is to be supplied to the application at a concentration of: PAA between 80-2000 ppm, HP not to exceed 770 ppm. HEDP not to exceed 100 ppm or DPA concentration not to exceed 4.00 ppm. pH 2.0 – 7.0, contact time 1) spray cabinet, 15 – 120 seconds 2) dip, 5 - 40 seconds.	1) Spray Cabinet 2) Dip
Peroyx X15™ and Peroyx X22™	Xgenex	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1- diphosphonic acid (HEDP), and	An aqueous mixture not exceeding 2000 ppm PAA, 950 ppm HP, and 113 ppm HEDP	Spray

		sulfuric acid (optional) and water (FCN 1638)		
Peroxyacetic acid (PAA) FCN 1960	Harcros Chemicals, Inc.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and optionally sulfuric acid and/or dipicolinic acid (DPA) (FCN 1960)	Not to exceed 2000 ppm PAA, 947 ppm HP, 116 ppm HEDP and 0.5 ppm DPA; pH: 1.0-9.0; contact time (spray, wash, rinse): 1 – 60 seconds; dip dwell time: 2-60 seconds; spray pressure: 5-60 psi	spray, wash, rinse, dip
Promoat ™ Promoat XL™	Brainerd Chemical Company, Safe Foods Corporation	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) and water. (FCN 1580)	Not exceed 2000 ppm PAA, hydrogen peroxide (HP) will not exceed 730 ppm, and HEDP will not exceed 14 ppm; exposure time: 2-15 seconds, spray pressure: 5-120 psi	Spray
Promoat XL™, Promoat™	Safe Foods Chemical Innovations	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid (AA), 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and/or dipicolinic acid (DPA), and optionally sulfuric acid. (FCN 2266 replaces FCN 1986)	PAA not to exceed 2000 ppm, HP not to exceed 1333 ppm, HEDP not to exceed 133 ppm; and DPA not to exceed 6.5 ppm; pH range: 1.0 – 12.0; Spray Pressure: 5 – 120 psi; Spray contact time: 0.5 – 15 seconds; Wash and rinse contact time: 0.5 – 120 seconds; Dip dwell time: 0.5 – 60 seconds	Wash, Dip, Rinse, Spray cabinet
ProtectFX System	PeroxyChem LLC, formerly Synergy Technologies	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, and 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP). (FCN 1379)	The level of PAA not to exceed use concentrations of 2000 ppm, 728 ppm hydrogen peroxide, and 13.3 ppm of HEDP.	Spray cabinet
SaniDateFD	Biosafe Systems, LLC	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid	Spray, IOBW

		1,1-diphosphonic acid (HEDP), and water (FCN 1501)	not to exceed 2000 ppm, hydrogen peroxide not to exceed 728 ppm, and HEDP not to exceed 13.3 ppm with a contact time of 2 to 12 seconds	
SaniDateFD Plus	BioSafe Systems, LLC	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1501)	Peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 933 ppm, and HEDP not to exceed 120 ppm; contact time of 2 to 12 seconds pH 3.0 – 4.5, pressure: 30-90 psi	Spray, IOBW
Sanova	Ecolab Inc., Alcide Corporation	Acidified sodium chlorite	Between 500 to 1200 ppm in combination with any GRAS acid at a level sufficient to achieve a pH of 2.3 to 2.9.	Spray cabinet,
Sodium Hypochlorite	N/A	Sodium Hypochlorite	20-50 ppm calculated as free available chlorine.	Spray, Wash, Rinse, or Dip
Spectrum ™/ Spectrum 2000™	PeroxyChem LLC, formerly Peroxygens, FMC	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, and 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP). FCN 880	Spray/ IOBW brushes: An aqueous mixture of PAA between 18-2000 ppm and 136 ppm 1-hydroxyethylidene-1,1- diphosphonic acid (HEDP) with a contact time of 1-30 seconds. Dip: An aqueous mixture of PAA between 100-2000 ppm and 136 ppm 1-hydroxyethylidene-1,1- diphosphonic acid (HEDP) with a contact time of up to 25 seconds.	Spray, IOBW/ Brushes or dip tank
ASSIST	Safe Foods Corporation	An aqueous solution of sulfuric acid and Sodium sulfate	Concentration sufficient to achieve a targeted pH range of 1-2.2; delivered	Spray, Drench, Dip

			at a minimum system pressure of 0.5 psi; and minimum contact time of 2 seconds.	
Syntrx3200	PeroxyChem LLC, formerly Synergy Technologies	An aqueous solution of citric and hydrochloric acids adjusted to a pH of 1.0 to 2.0	Applied with a contact time of 2 to 5 seconds measured prior to application.	Spray cabinet
Terrastat FCN 1379	Brainerd Chemical Company	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, and 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP). (FCN 1379)	The level of PAA not to exceed 2000 ppm, 728 ppm hydrogen peroxide, and 13.3 ppm of HEDP	Spray cabinet
Terrastat FCN 1580	Brainerd Chemical Company	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) and water. Peroxyacetic acid (FCN 1580)	PAA not exceed 2000 ppm, hydrogen peroxide will not exceed 730 ppm, and HEDP will not exceed 14 ppm in spray for poultry carcasses measured prior to application	Spray
Terrastat 15/ Terrastat 22	Brainerd Chemical Company	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA). (FCN 1823)	Not to exceed 2000 ppm PAA, 1474 ppm HP, 14 ppm HEDP, and 0.88 ppm DPA. pH range: 2-10; spray, maximum contact time of fifteen (15) seconds with a pressure of 5-170 psi; dip dwell/contact time, 5-40 seconds	spray, dip
Trisodium phosphate		Trisodium phosphate (TSP)	Pre-chill: Applied to carcasses as a spray up to 15 seconds using an 8-12 percent solution. Applied in accordance with good manufacturing practice. (21 CFR 182.1778)	Spray cabinet

Update August 2024

List of Approved Off-Line Reprocessing (OFLR) Antimicrobial Systems for Poultry

Approved OFLR System	Company Name/ Distributor	Substance (antimicrobial) and if applicable, FDA's Food Contact Notification (FCN)	PPM Concentration (range), pH, contact time, temperature (if applicable)	Method of Application (e.g., Spray, Wash, Inside Outside Bird Washer (IOBW) with or without brushes
AFCO 4360 FC-100	AFCO	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1389)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 800 ppm, and HEDP not to exceed 96 ppm, contact time of three (3) to ten (10) seconds	Spray
AFCO 4363 Perasafe 23	AFCO	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1389)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 765 ppm, and HEDP not to exceed 62.6 ppm, minimum contact time of three (3) to ten (10) seconds	Spray
AVIBROM (DBDMH)	Albemarle Corp. AVIBROM	1,3-dibromo- 5,5 dimethylhydation DBDMH bromine (FCN 334, FCN 453, FCN 1190)	Avibrom between 60-450 ppm available bromine; complete coverage of outside and inside of carcass for 60-90 seconds.	IOBW/spray cabinets
Biosan 2205 MPS, Biosan 1510 MPS, Oxysan 2205, Oxysan 1510	Biosan, LLC	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-	PAA not to exceed 2000 ppm, hydrogen peroxide not to exceed 1474 ppm, 1-	Dip Dip Tank Drag Thru Dip Tank Spray

		hydroxyethylidene- 1,1-disphonic acid (HEDP) and/or dipicolinic acid (DPA), and optionally, sulfuric acid. FCN 2036 replaces FCN 1639	hydroxyethylidene-1,1-diphosphonic acid (HEDP) not to exceed 136 ppm; and dipicolinic acid (DPA) not to exceed 4 ppm; contact time: one (1) – thirty (30) seconds; pH 1.0 – 2.0; pressure: 10-90 psi	
Birkoside MP-2	Envirotech, Birko Corp.	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 887)	PAA between 80-150 ppm and HP not to exceed 110 ppm. HEDP not to exceed 13 ppm or DPA concentration not to exceed 4.00 ppm. pH 3.0 – 7.0, contact time between 3 – 30 seconds.	Spray cabinet
BirkoSide 15/ BirkoSide 22	Brainerd Chemical Company, Birko Corp.	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA). (FCN 1823)	Not to exceed 2000 ppm PAA, 1474 ppm HP, 14 ppm HEDP, and 0.88 ppm DPA. pH range: 2-10; spray, maximum contact time of fifteen (15) seconds with a pressure of 5-170 psi; dip dwell/contact time, 5-40 seconds	spray, dip
Calcium Hypochlorite	N/A	Calcium hypochlorite	20 ppm calculated as free available chlorine Note: Agency guidance has allowed the use of up to 50 ppm calculated as free available chlorine	Spray

CECURE™	Safe Foods Corp	Cetylpyridinium chloride (The solution shall also contain propylene glycol complying with 21 CFR 184.1666 at a concentration of 1.5 times that of cetylpyridinium chloride). May be used in combination with an approved defoamer (i.e. Foamfix) in accordance with 21 CFR 173.340 and 9 CFR 424.21(c)	As a fine mist spray of an ambient temperature aqueous solution applied to raw poultry carcasses/ parts prior to immersion in a chiller, at a level not to exceed 0.3 gram cetylpyridinium chloride per pound of raw poultry carcass/ parts, provided that the additive is used in systems that collect and recycle solution that is not carried out of the system with the treated poultry carcasses/ parts, or Except when used as an immersion such as a dip tank (≤10 seconds), an aqueous solution such as a drench (minimum of 2 to 5 seconds) applied to raw poultry carcasses/ parts either prior to or after chilling at an amount not to exceed 5 gallons of solution per carcass, provided that the additive is used in systems that recapture at least 99 percent of the solution that is applied to the poultry carcasses/ parts. The concentration of cetylpyridinium	Spray cabinet, drench, dip

			chloride in the solution applied to the carcasses/ parts shall not exceed 0.8 percent by weight. When application of the additive is not followed by immersion in a chiller, the treatment will be followed by a potable water rinse of the carcass/parts. The potable water may contain up to 50 ppm free available chlorine.	
ChemSan RBR-22 ChemSan RBR-XC ChemSan RBR-XL	Envirotech ChemStation	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 1132)	The concentrated PAA formula is diluted and is to be supplied to the spray application at a concentration of: PAA between 80- 400 ppm, HP not to exceed 385 ppm. HEDP is not to exceed 50 ppm or DPA not to exceed 4.00 ppm. pH 2.0 – 7.0, contact time between 15 – 120 seconds.	Spray
ChemSan T22	Brainerd Chemical Company, ChemStation	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA). (FCN 1823)	Not to exceed 2000 ppm PAA, 1474 ppm HP, 14 ppm HEDP, and 0.88 ppm DPA. pH range: 2-10; spray, maximum contact time of fifteen (15) seconds with a pressure of 5-170 psi; dip dwell/contact time, 5-40 seconds	spray, dip
Citrilow™, Citrilow Plus™	Safe Foods Corporation	Citric Acid (CA), Hydrochloric acid (HCl), and water.	Contact time: a minimum of 2 seconds. pH: 1.0-2.0	Spray

DiverContact P16 and DiverContact XP	Diversey, Inc	An aqueous mixture containing peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA) and optionally sulfuric acid (FCN 1936)	Concentration: 2000 ppm PAA, 1474 ppm HP, 118 ppm HEDP and 0.5 ppm DPA; pH Range: 2.0-8.0; Exposure Time: 5-120 seconds, Delivery Method: Spray pressure: between 10 and 90 psi; wash, rinse and dip contact time between 5 and 30 seconds	Wash, dip, rinse, spray cabinet
DiverContact® P16	Diversey, Inc. and Cryovac, Inc.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and sulfuric acid (optional, as a catalyst) and water (FCN 1284)	An aqueous mixture of peroxyacetic acid (PAA) not exceeding 2000 ppm and 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) not exceeding 136 ppm; contact time: three (3) –thirty (30) seconds; pH: 3.5 – 6.5; pressure: 20 -	Spray
Enviro Tech	Enviro Tech Chemical Services, Inc.	Peroxyacetic acid (PAA), FCN 887	PAA between 80-150 ppm and a pH between 3-7	Spray
HydriShield PA 15 LP, HydriShield PA 15 HP, HydriShield PA 22 HP, HydriShield PA 22 LP, HydriShield PA 22 SF	Hydrite Chemical Co.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, optionally, sulfuric acid, and optionally, 1-hydroxyethylidene1,1-diphosphonic acid (HEDP), and/or optionally dipicolinic acid (DPA) (FCN 2274) (FCN 2274 replaces FCN 1872)	PAA between 20-2000 ppm, HP not to exceed 1474 ppm, and HEDP not to exceed 100 ppm; pH Range: 2.0-8.0; exposure time: 5-60 seconds; pressure: 5-150 psi	spray cabinet dip rinse wash IOBW

Hydrishield HC	Hydrite Chemical Co.	A concentrated formula of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1,1-disphonic acid (HEDP), or dipicolinic acid (DPA). Spray: FCN 1132 Spray Cabinet: FCN 1806	Spray: The concentrated PAA formula is diluted and is to be supplied to the application at a concentration of: PAA between 80-400 ppm, HP will not exceed 385 ppm, HEDP will not exceed 50 ppm or DPA will not exceed 4.00 ppm; pH 2.0 – 7.0, contact time: 15 – 120 seconds. Spray Cabinet: The concentrated PAA formula is diluted and is to be supplied to the application at a concentration of: PAA between 80-2000 ppm, HP will not exceed 770 ppm, HEDP will not exceed 100 ppm or DPA will not exceed 4.00 ppm; pH 2.0 – 7.0, contact time: 15 – 120 seconds	Spray Spray Cabinet
Hypochlorous acid	N/A	Electrolytically generated hypochlorous acid	20 ppm calculated as free available chlorine Note: Agency guidance has allowed the use of up to 50 ppm calculated as free available chlorine.	Spray
Inspexx 150	ECOLAB	Peroxyacetic acid (PAA), acetic acid, hydrogen peroxide, and 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP). FCN 1096	The level of PAA is applied at a concentration between 40-220 ppm PAA.	Spray, Wash or Rinse
Inspexx 150, 3DT Inspexx 150, Inspexx 250 3DT, Inspexx 250	ECOLAB	Peroxyacetic acid (PAA), acetic acid, hydrogen peroxide, and 1-hydroxyethylidene-1, 1-diphosphonic acid	The level of PAA is applied at a concentration between 40 - 2000 ppm, exposure time: minimum of	Spray, Wash, or Rinse

		(HEDP). FCN 1495	five (5) seconds, pH 2.0-8.0, pressure: minimum of 5 psi.	
Inspexx 150TM, 3DT Inspexx 150TM, Inspexx 250TM, or 3DT Inspexx 250TM	Ecolab	Peroxyacetic acid (PAA), hydrogen peroxide, 1-hydroxyethyl idine-1, 1-diphosphonic acid (HEDP). (FCN 1745)	The concentration of PAA 40-2000 ppm, 1474 ppm hydrogen peroxide and 118 ppm 1-hydroxyethylidene-1, 1-diphosphonic acid in spray, exposure time: 5-60 seconds, pH 2.0-8.0, pressure: minimum of 5 psi.	Spray cabinet/wash IOBW
Inspexx™150; Inspexx™250; Inspexx™250 S; Inspexx™250 PLUS; Inspexx 250™ S PLUS	Ecolab	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxethylidine- 1,1-disphonic acid (HEDP) and/or dipicolinic acid (DPA), and optionally, sulfuric acid. (FCN 2046)	The concentration of PAA is applied at 40 – 2000 ppm, 1474 ppm hydrogen peroxide and 136 ppm 1-hydroxyethylidene-1, 1-diphosphonic acid, and 6.7 ppm DPA; Spray exposure time: 5 – 60 seconds, pH: 2 – 8; pressure: minimum of 5 psi. Use a PAA test kit or in-line monitor to verify the PAA concentration in the water.	Spray cabinet/Wash/IOBW
Interox ProxiViv 15 Interox ProxiViv 22	Solvay Chemicals, Inc.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA) and sodium hydroxide. FCN 1641	PAA not to exceed 2000 ppm, HP will not exceed 933 ppm, HEDP will not exceed 120 ppm, and DPA will not exceed 0.5 ppm; pH range: 2-10; spray contact time: maximum of 15 seconds; spray pressure: 5-120 psi; dip/dwell contact time: 5-40 seconds	Spray Dip

KF 27145	Kroff Tech	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene- 1,1-diphosphonic acid (HEDP), and optionally sulfuric acid (SA). (FCN 1693)	200-2000 ppm PAA, pH Range: 1.0-7.0, Contact Time: 1-120 seconds for spray wash rinse, and dip, Spray pressure: 5–100 psi	wash, dip, rinse, spray cabinet
Microtox 5 P	Valley Chemical Solutions	Peroxyacetic acid (PAA), hydrogen peroxide, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) FCN 1247	PAA is not to exceed 2000 ppm, 750 ppm hydrogen peroxide, and 136 ppm HEDP. Delivery pressure is 10-60 psig.	Spray
Microtox Plus	Valley Chemical Solutions	Peroxyacetic acid (PAA), hydrogen peroxide, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) FCN 1247	The concentrated PAA formula is diluted, supplied to the spray equipment at ambient pressure and at a concentration of: PAA is not to exceed 2000 ppm, 750 ppm hydrogen peroxide, and 136 ppm HEDP.	Spray
Microtox Plus	Zee Company, Inc.	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, sulfuric acid (optional), 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1514)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 666 ppm, and HEDP not to exceed 130 ppm	Spray
Microtox Prime	Valley Chemical Solutions	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), water, and optionally sulfuric acid (FCN 1844)	An aqueous mixture of PAA between 25-2000 ppm, HP not to exceed 892 ppm, and HEDP not to exceed 7 ppm; pH between 1.0-8.5; pressure between 5-100 psi, contact time sufficient to remove contamination–not to exceed 60	Spray cabinet

			seconds in a spray cabinet	
Microtox Ultra	Zee Company, Inc.	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, sulfuric acid (optional), 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1666)	Peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 750 ppm, and HEDP not to exceed 10 ppm	Spray
OxyFusion	BioSafe Systems, LLC	Peroxyacetic acid (PAA), hydrogen peroxide (HP), glycerol, and optionally, acetic acid or sulfuric acid (FCN 1783)	Not exceeding 2000 ppm PAA and HP will not to exceed 1474 ppm; pH 2.5 – 12.5, exposure time: 3 – 20 seconds, spray pressure: 25 – 45 psi	Spray, IOBW
OxyFX 22	CraftChem, Inc., Predictive Food Safety Solutions, LLC	An aqueous solution Peroxyacetic acid (PAA), acetic acid, hydrogen peroxide, and 1-hydroxyethylide ne-1, 1-diphosphoric acid (HEDP) FCN 1495	The level of PAA applied will not exceed 2000 ppm, hydrogen peroxide will not exceed 750 ppm,1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) will not exceed 136 ppm; contact time: of two (2) – fifteen (15) seconds; pH 1.0 – 2.0; pressure: 40-80 psi	Spray
OxypHresh/Oxyphresh 22	Brainerd Chemical Company, CMS Technology LLC	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA). (FCN 1823)	Not to exceed 2000 ppm PAA, 1474 ppm HP, 14 ppm HEDP, and 0.88 ppm DPA. pH range: 2-10; spray, maximum contact time of fifteen (15) seconds with a pressure of 5-170 psi; dip dwell/contact time, 5-40 seconds	spray, dip
Pathiclean TOMCO2 Systems	TOMCO Equipment Co.*	Concentrated formula of Peroxyacetic acid (PAA), hydrogen	PAA not to exceed 220 ppm and HP not to exceed 110	Spray

		peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 887)	ppm. HEDP not to exceed 13 ppm or DPA not to exceed 4.00 ppm. Contact time 5 seconds at 5-170 psi/g.	
Pathiclean TOMCO2 Systems	TOMCO Equipment Co.*	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 1132)	The concentrated PAA formula is diluted and is to be supplied to the spray equipment at a concentration of: PAA between 80-400 ppm and HP not to exceed 385 ppm. HEDP not to exceed 50 ppm, and DPA not to exceed 4.00 ppm. pH 2.0 – 7.0, contact time of 5 seconds at 5-170 psig.	Spray
Pearl OX, All-O-San	Xgenex	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) optionally, sulfuric acid, (FCN 1638).	An aqueous mixture not exceeding 2000 ppm peroxyacetic acid (PAA), 950 ppm hydrogen peroxide (HP), 113 ppm acetic acid, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) and optionally, sulfuric acid; contact time: one (1) – 120 seconds; pH 2.0 – 8.0; pressure: 5 – 170 psi, tempera-ture: 32° to 99°F	Spray
Peracet™ 2000	CraftChem, Inc.	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1465)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 750 ppm, and HEDP not to exceed 136 ppm, contact time	Spray Cabinet

			of two (2) to fifteen (15) seconds	
Peraclean 22	Evonik Corporation	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, sulfuric acid (optional), 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA), sulfuric acid and water (FCN 1522)	The aqueous solution is to be supplied to the spray application at a concentration of: PAA not to exceed 1150 ppm, HP not to exceed 235 ppm, HEDP not to exceed 2.5 ppm and DPA not to exceed 0.5 ppm, pH 2-7, contact time of 1-15 seconds.	Spray
Peragonn™	Safe Foods Corporation	Peroxyacetic acid (PAA), hydrogen peroxide, and 1-hydroxyethylidene-1,1- diphosphonic acid (HEDP). FCN 1089	PAA is not to exceed 220 ppm; hydrogen peroxide; and 11 ppm 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP).	Spray
Perasan MP-2	Tyson Foods*	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 887)	PAA between 80-150 ppm and HP not to exceed 110 ppm, HEDP not to exceed 13 ppm, and DPA concentration not to exceed 4.00 ppm. pH 3.0 – 7.0, contact time between 3 – 30 seconds.	Spray
Perasan MP-2C	Enviro Tech Chemical Services Inc.	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 1806)	The concentrated PAA formula is diluted and is to be supplied to the application at a concentration of: PAA between 80 – 2000 ppm and HP not to exceed 770 ppm. HEDP not to exceed 100 ppm, and DPA not to exceed 4.00 ppm. pH 2.0 – 7.0, contact time spray cabinet, between 15 – 120 seconds.	Spray Cabinet

Perasan MP-2C	Envirotech	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, and optionally 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP), or dipicolinic acid (DPA). (FCN 1132)	The concentrated PAA formula is diluted and is to be supplied to the spray application at a concentration of: PAA between 80- 400ppm and HP not to exceed 385 ppm. HEDP not to exceed 50 ppm or DPA concentration not to exceed 4.00 ppm. pH 2.0 – 7.0, contact time between 15 – 120 seconds.	Spray
Peroyx X15™ and Peroyx X22™	Xgenex	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and sulfuric acid (optional) and water (FCN 1638)	An aqueous mixture not exceeding 2000 ppm PAA, 950 ppm HP, and 113 ppm HEDP (FCN 1638)	Spray
Peroxyacetic acid (PAA) FCN1960	Harcros Chemicals, Inc	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and optionally sulfuric acid and/or dipicolinic acid (DPA) (FCN 1960)	Not to exceed 2000 ppm PAA, 947 ppm HP, 116 ppm HEDP and 0.5 ppm DPA; pH: 1.0-9.0; contact time (spray, wash, rinse): 1 – 60 seconds; dip dwell time: 2-60 seconds; spray pressure: 5-60 psi	spray, wash, rinse, dip
Promoat ™ Promoat XL™	Brainerd Chemical Company, Safe Foods Corporation	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene1,1-diphosphonic acid (HEDP) and water. (FCN 1580)	Not exceed 2000 ppm PAA, hydrogen peroxide (HP) will not exceed 730 ppm, and HEDP will not exceed 14 ppm; exposure time: 2-15 seconds, spray pressure: 5-120 psi	Spray
Promoat XL™, Promoat™	Safe Foods Chemical Innovations	An aqueous mixture of peroxyacetic acid (PAA), hydrogen	PAA not to exceed 2000 ppm, HP not to exceed 1333	Wash, Dip, Rinse, Spray cabinet

		peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and/or dipicolinic acid (DPA), and optionally sulfuric acid. (FCN 2266 replaces FCN 1986)	ppm, HEDP not to exceed 133 ppm; and DPA not to exceed 6.5 ppm; pH range: 1.0 – 12.0; Spray Pressure: 5 – 120 psi; Spray contact time: 0.5 – 15 seconds; Wash and rinse contact time: 0.5 – 120 seconds; Dip dwell time: 0.5 – 60 seconds	
PROTECTFX™ 993	PeroxyChem LLC, formerly Synergy Technologies	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1- hydroxyethylidene-1, 1- diphosphonic acid (HEDP) and water. Peroxyacetic acid (FCN 993)	The level of PAA not to exceed 220 ppm, hydrogen peroxide will not exceed 80 ppm, and HEDP will not exceed 1.5 ppm measured prior to application	Spray
SaniDateFD	Biosafe Systems, LLC	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and water (FCN 1501)	The aqueous solution is to be supplied to the spray application at a concentration of: peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 728 ppm, and HEDP not to exceed 13.3 ppm with a contact time of 2 to 12 seconds	Spray
SaniDateFD Plus	BioSafe Systems, LLC	An aqueous mixture of peroxyacetic acid, hydrogen peroxide, acetic acid, 1-hydroxyethylidene- 1,1-diphosphonic acid (HEDP), and water (FCN 1501).	Peroxyacetic acid not to exceed 2000 ppm, hydrogen peroxide not to exceed 933 ppm, and HEDP not to exceed 120 ppm; contact time of 2 to 12 seconds pH 3.0 – 4.5, pressure: 30-90 psi	Spray, IOBW
Sodium Hypochlorite	N/A	Sodium Hypochlorite	20-50 ppm calculated as free available chlorine.	Spray, Dip
Spectrum® /	PeroxyChem	A aqueous mixture of	PAA between 18-	Spray, dip tank,

Spectrum 2000®	LLC, formerly Peroxygens, FMC	FCS 323 or FCS 880, peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, and 1- hydroxyethyl-lidene-1, 1- diphos-phonic acid (HEDP)	2000 ppm; Contact with the antimicrobial treatment solution will be between 1 – 30 seconds.	IOBW brush cabinet with spray nozzles.
Terrastat FCN 1580	Brainerd Chemical Company	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1, 1- diphosphonic acid (HEDP) and water. Peroxyacetic acid (FCN 1580)	PAA not exceed 2000 ppm, hydrogen peroxide will not exceed 730 ppm, and HEDP will not exceed 14 ppm in spray for poultry carcasses measured prior to application	Spray
Terrastat 15/ Terrastat 22	Brainerd Chemical Company	Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), dipicolinic acid (DPA). (FCN 1823)	Not to exceed 2000 ppm PAA, 1474 ppm HP, 14 ppm HEDP, and 0.88 ppm DPA. pH range: 2-10; spray, maximum contact time of fifteen (15) seconds with a pressure of 5-170 psi; dip dwell/contact time, 5-40 seconds	spray, dip