

UNITED STATES DEPARTMENT OF AGRICULTURE
 FOOD SAFETY AND INSPECTION SERVICE
 WASHINGTON, DC

FSIS DIRECTIVE

7120.1
Rev. 48

12/6/18

SAFE AND SUITABLE INGREDIENTS USED IN THE PRODUCTION OF MEAT, POULTRY, AND EGG PRODUCTS

I. PURPOSE

This directive provides inspection program personnel (IPP) with the latest up-dates to the list of substances that may be used in the production of meat, poultry, and egg products. As a reminder, this directive no longer provides the complete listing of approved substances and On-Line Reprocessing (OLR) and Off-Line Reprocessing (OFLR) Antimicrobial Intervention Systems. The complete [listing of approved substances and OLR and OFLR Antimicrobial Intervention Systems](#) is available at the above link. FSIS is also providing a link to the [complete list of safe and suitable ingredients](#) and a [Web based look-up table](#) to search ingredients by name.

II. CANCELLATION

FSIS Directive 7120.1, Revision 47, *Safe and Suitable Ingredients Used in the Production of Meat, Poultry, and Egg Products*, 10/18/18

III. LATEST UP-DATE TO THE LIST OF SUBSTANCES

Table 1: Summary of Updates to list of substances

1) The use of the substances is consistent with FDA's labeling definition of a processing aid., 2) Generally Recognized as Safe (GRAS), 3) Secondary Direct Food Additive, 4) Direct Food Additive, 5) Color Additive, 6) Food Contact Substance (FCS) subject to food contact notifications (FCN) is defined as any substance that is intended for use as a component of materials used in manufacturing, packing, packaging, transporting, or holding food if such use is not intended to have any technical effect in such food.				
Substance	Intended Use of Product	Amount	REFERENCE	LABELING REQUIREMENTS
Antimicrobial				
An aqueous sodium hydroxide-based solution with proprietary blends of adjuvants	Hide-on carcass wash for cattle and swine	1) sodium hydroxide-based wash solution used at a final concentration of .5-2.0 oz. of wash per gallon of water, alkalinity levels from .2-.7%, flow rate of 100-400 gallons per minute, temperature of the wash solution	Acceptability determination	None under the accepted conditions of use (1)

DISTRIBUTION: Electronic

OPI: OPPD

		<p>between 40-180°F, contact time of 8-15 seconds, optional post water rinse for 5-10 seconds at a flow rate of 50-100 gallons per minute at a temperature of 50-60°F.</p> <p>2) Sodium hydroxide-based wash solution used at a final concentration of .5-4 oz. of wash solution per gallon of water, alkalinity levels between .1-1%, cabinet pressure rates between 20-100 psi, temperature of the solution between 80-130°F, and a contact time of 8-20 seconds. For edible skin, a fresh water rinse is required. at 50-80°F at 20-100 psi for 5-10 seconds post application.</p>		
Dried potato	For use as a binder in products where binders are allowed	As a binder in meat products at 3.5 percent individually or collectively with other binders and extenders for use in meat where binders are permitted and at 3 percent for cooked poultry products and 2 percent for raw poultry products where binders are permitted.	Acceptability determination	Potato powder or potato (dry)
Dried potato and mustard flour	For use as a binder in	As a binder in meat products at	Acceptability determination	Potato powder or potato (dry)

	products where binders are allowed	3.5 percent individually or collectively with other binders and extenders for use in meat where binders are permitted and at 3 percent for cooked poultry products and 2 percent for raw poultry products where binders are permitted.		and mustard flour
A mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and dipicolinic acid (DPA)	(1) Used in spray, wash, rinse, dip, chiller water, low temperature (e.g., less than 40 °F) immersion baths, or scald water for whole or cut poultry carcasses, parts, trim, and organs (2) Used in process water or ice used for washing, rinsing, or cooling whole or cut meat, including carcasses, parts, trim, and organs (3) Used in water, brine, or ice used for washing, rinsing, or cooling processed and pre-formed poultry as defined in 21 CFR 170.3(n)(34) (4) Used in water, brine, or ice used for washing, rinsing, or cooling processed and	(1) An aqueous mixture not exceeding 2000 ppm peroxyacetic acid (PAA), 1474 ppm hydrogen peroxide (HP), 14 ppm 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP), and 0.88 ppm dipicolinic acid (DPA); (2) An aqueous mixture not exceeding 1800 ppm PAA, 1215 ppm HP, 12 ppm HEDP, and 0.5 ppm DPA; (3) An aqueous mixture not exceeding 230 ppm PAA, 186 ppm HP, 14 ppm HEDP, and 0.1 ppm DPA; (4) A mixture not exceeding 495 ppm PAA, 335 ppm HP, 14 ppm HEDP, and 0.1 ppm DPA	Food Contact Substance Notification (FCN 1823)	None under the accepted conditions of use (6)

	pre-formed meat as defined in 21 CFR 170.3(n)(34)			
An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (H ₂ O ₂), acetic acid, sulfuric acid (optional) and 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP)	(1) process water and ice used to spray, wash, rinse, or dip meat carcasses, parts, trim, and organs, and in chiller water or scald water for meat carcasses, parts, trim, and organs; (2) process water and ice used to spray, wash, rinse, or dip poultry carcasses, parts, trim, and organs and in chiller water, immersion baths (e.g., less than 40° F), or scald water for poultry carcasses, parts, trim, and organs (3) in water, brine, and ice for washing, rinsing, or cooling of processed or preformed meat products; (4) water, brine, and ice for washing, rinsing, or cooling of processed or pre-formed poultry products; (5) in brines, sauces, and marinades applied either on the surface	(1) The level not to exceed 1200 ppm PAA, 862 HP, and 60 ppm HEDP; (2) The level not to exceed 2000 ppm PAA, 1436 ppm HP, and 100 ppm HEDP; (3) The level not to exceed 466 ppm PAA, 335 ppm HP, and 23 ppm HEDP; (4) The level not to exceed 230 ppm PAA, 165 ppm HP, and 12 ppm HEDP; pH range for above applications is 2.0 – 8.0; spray contact time: 5 – 60 seconds; spray pressure: 5 – 150 psi; wash and rinse contact time: 5-60 seconds; dip dwell time: 5-30 seconds. (5) The level not to exceed 46 ppm PAA, 33 pm HP, and 2 ppm HEDP and; (6) The level not to exceed 1200 ppm PAA, 862 pm HP, and 60 ppm HEDP	Food Contact Notification (FCN 1872)	None under the accepted conditions of use (1)

	<p>or injected into processed or unprocessed, raw and ready-to-eat (RTE) poultry parts and pieces; and in surface sauces and in marinades applied on processed and preformed meat and poultry products;</p> <p>(6) in water for washing shell eggs.</p>			
<p>An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (H₂O₂), acetic acid,) 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) and sulfuric acid</p>	<p>(1) process water applied as a wash, spray, dip, rinse, chiller water, low-temperature (less than 40°F) immersion bath, or scald water for whole or cut poultry carcasses, parts, trim, and organs;</p> <p>(2) process water or ice used in washing, rinsing, or cooling whole or cut meat carcasses, parts, trim, and organs</p> <p>(3) process water, ice, or brine used in washing, rinsing, or cooling processed and pre-formed meat products;</p>	<p>(1) The level not to exceed 2000 ppm PAA, 800 ppm HP, and 133 ppm;</p> <p>(2) The level not to exceed 1800 ppm PAA, 700 ppm HP, and 120 ppm;</p> <p>(3) The level not to exceed 495 ppm PAA, 193 ppm HP, and 33 ppm HEDP;</p> <p>(4) 230 ppm PAA, 90 ppm HP, and 15 ppm HEDP;</p> <p>pH range for the above applications are 2.0 – 12.0;</p> <p>spray contact time: 2 – 15 seconds;</p> <p>wash and rinse contact time: 2-120 seconds;</p> <p>spray pressure: 5 – 120 psi; dip dwell time: 2-60 seconds.</p> <p>(5) The level not to exceed 50 ppm PAA, 17 ppm HP, and 4</p>	<p>Food Contact Notification (FCN 1867)</p>	<p>None under the accepted conditions of use (1)</p>

	(4) process water, ice, or brine used in washing, rinsing, or cooling processed and pre-formed poultry products; (5) brines, sauces, and marinades applied to the surface or injected into processed or unprocessed, raw or ready-to-eat whole or cut poultry; and in surface sauces and marinades applied on processed and preformed meat and poultry products; and (6) process water used in washing shell eggs.	ppm HEDP; (6) The level not to exceed 2000 ppm PAA, 800 ppm HP, and 120 ppm HEDP.		
A tablet composed of calcium hypochlorite, sodium chloride, calcium hydroxide, calcium chlorate, calcium carbonate, pentasodium triphosphate, and calcium chloride adjusted to a final solution pH of 6.2 - 7.0 using citric acid, sodium bisulfate or other approved acidifier	Poultry carcasses in scald tanks	An aqueous mixture not exceeding 400 ppm total chlorine at a controlled pH of 6.2 to 7.0 in scalding make-up water to achieve 0.05 ppm free chlorine residual in the scalding tank	Acceptability determination Sodium bisulfate; GRAS No. 000003 Citric acid; 9 CFR 424.21	None under the accepted conditions of use (1)(2)
List of Approved On-Line Reprocessing (OLR) Antimicrobial Systems for Poultry				
Approved OLR System	Company name/Distributor	Substance	Concentration	Method of application
Acid FX 32	Craft Chem, Inc	An aqueous solution of citric acid and	pH: 1.0-2.0; contact	Spray Cabinet

		hydrochloric acid adjusted to a pH of 1.0 to 2.0	time: 2 to 5 seconds; pressure: 5-40 psi; temperature: 34°-75°F	
OxypHresh 22 FCN 1580	CMS Technology, INC	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
ChemSan RBR-22	EnviroTech	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1- hydroxyethylidene-1,1- diphosphonic acid (HEDP), water, and optionally sulfuric acid (FCN 1806)	An aqueous mixture of PAA between 80-2000 ppm, HP not to exceed 770 ppm, and HEDP not to exceed 100 ppm, pH between 2.0-7.0; pressure between >20 psi, contact time 15-120 seconds spray cabinet	Spray Cabinet
ChemSan RBR-XC	Envirotech	Peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1- hydroxyethylidene-1,1- diphosphonic acid (HEDP), water, and optionally sulfuric acid (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 Hydrogen peroxide not to exceed 770 ppm, HEDP not to exceed 100 ppm, Ph 2.0 – 7.0, contact time between 15 – 120 seconds.	Spray Cabinet
Perasan MP-2C	Envirotech	Concentrated formula of Peroxyacetic acid	The concentrated PAA formula is	Spray

		(PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP) and water. (FCN 1806)	diluted and is to be supplied to the application at a concentration of: PAA between 80-2000 ppm Hydrogen peroxide not to exceed 770 ppm, HEDP not to exceed 100 ppm, Ph 2.0 – 7.0, contact time between 15 – 120 seconds.	
Pathiclean TOMCO2 Systems	TOMCO Equipment Co.	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP) and water. (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 Hydrogen peroxide not to exceed 770 ppm, HEDP not to exceed 100 ppm, Ph 2.0 – 7.0, contact time between 15 – 120 seconds.	Spray
HydriShield PA 22 LP, Hydrishield PA 22 HP (FCN 1872)	Hydrite Chemical Co.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene-1,1-diphosphonic acid (HEDP) and optional sulfuric acid. (FCN 1872)	PAA between 20-2000 ppm, hydrogen peroxide not to exceed 1436 ppm, HEDP not to exceed 100 ppm; pH Range: 2.0-8.0 Exposure Time: 5-60 seconds. Pressure: 5 and 150 psi	Spray cabinet, wash and IOBW

List of Approved Off-Line Reprocessing (OFLR) Antimicrobial Systems for Poultry				
Approved OFLR System	Company name/Distributor	Substance	Concentration	Method of application
Perasan MP- 2C	Envirotech	Concentrated formula of Peroxyacetic acid (PAA), hydrogen peroxide, acetic acid, 1-hydroxyethylidene- 1, 1- diphosphonic acid (HEDP) and water. (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 Hydrogen peroxide not to exceed 770 ppm, HEDP not to exceed 100 ppm, Ph 2.0 – 7.0, contact time between 15 – 120 seconds.	Spray Cabinet
HydriShield PA 22 LP, HydriShield PA 22 HP (FCN 1872)	Hydrite Chemical Co.	An aqueous mixture of peroxyacetic acid (PAA), hydrogen peroxide (HP), acetic acid, 1-hydroxyethylidene- 1,1-diphosphonic acid (HEDP) and optional sulfuric acid. (FCN 1872)	PAA between 20-2000 ppm, hydrogen peroxide not to exceed 1436 ppm, HEDP not to exceed 100 ppm; pH Range: 2.0-8.0 Exposure Time: 5-60 seconds. Pressure: 5 and 150 psi	Spray cabinet, wash and IOBW

IV. QUESTIONS

A. Refer questions regarding this directive to the Office of Policy and Program Development through [askFSIS](#) or by telephone at 1-800-233-3935. When submitting a question, use the Submit a Question tab, and enter the following information in the fields provided:

Subject Field: Enter **Directive 7120.1**
 Question Field: Enter question with as much detail as possible.
 Product Field: Select General Inspection Policy from the drop-down menu.
 Category Field: Select New Technology as the main category then select either Ingredients or Processing Aides from the drop-down menu.
 Policy Arena: Select Domestic (U.S.) Only from the drop-down menu.

B. For labeling questions enter the following information:

Subject Field: Enter **Ingredient Labeling**
 Question Field: Enter question with as much detail as possible.
 Product Field: Select Labeling from the drop-down menu.
 Category Field: Select Ingredients/Additives or other applicable category from the drop-down menu.
 Policy Arena: Select Domestic (U.S.) Only from the drop-down menu.

When all fields are complete, press **Continue** and at the next screen press **Finish Submitting Question**.

NOTE: Refer to [FSIS Directive 5620.1](#), *Using askFSIS*, for additional information on submitting questions.

A handwritten signature in black ink that reads "Rebecca J. Wagner". The signature is written in a cursive style with a large, stylized initial 'R'.

Assistant Administrator
Office of Policy and Program Development