



الفضلات الكيميائية في اللحوم والدواجن والبيض

**Chemical Residue Limits in Meat, Poultry and Eggs
For Product Disposition and Case Development**

Prepared by

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Guidelines

1. Retained product is condemned based upon official analyses showing that the "residue limits" have been exceeded. Residue findings exceeding residue limits are called "Residue Violations". Residue limits are defined further in the annual Food Safety and Inspection Service document, "Compound Evaluation and Analytical Capability National Residue Program Plan."¹
2. The residue limits are based upon Food and Drug Administration (FDA) and Environmental Protection Agency (EPA) residue tolerances, action levels, and administrative guidelines. Although some tolerances target specific metabolites, only the parent compound name is recorded in the tables that follow. This convention will not interfere with use of the findings for disposition purposes.
3. The left half of the table designates whether the residue limit is reported in parts per million (ppm) or parts per billion (ppb). It also provides residue limits for tissues of slaughter classes and eggs not referenced in detail on the right side under "Exceptions." Slaughter classes, except where noted, are limited to subgroups of the following: cattle, calves, sheep, goats, swine, horses, rabbits, chickens, turkeys, ducks and geese. Consult with a residue specialist in the Technical Services Center (TSC) for positive findings in ratites or other unlisted classes and for residues not listed in this guide.
4. "No Limit" in the "Amount" column means FDA has determined that harmful residues will not occur and a residue limit or tolerance is not needed.
5. The entry "?????" in the "Amount" column means FDA has not defined a tolerance for the designated tissue although unsafe residues are possible. In these cases, FDA defines a target tissue that has a tolerance and is used as a reference. A residue specialist in the Technical Services Center must be consulted before a disposition is made. **Compounds with the following residue codes are in the "?????" category for one or more slaughter classes and tissues: 917, 921, 923, 926, 927, 951, 952, and 955.**
6. Liver, muscle, kidney, and fat are abbreviated as L, M, K, F respectively, as needed, to save space. "All" refers to liver, muscle, kidney and fat inclusive. "SkelMusc" refers exclusively to skeletal muscle. "Fat in Muscle" refers to fat extracted in the laboratory from a muscle tissue specimen. "Skin + AdherFat" refers to poultry skin with subcutaneous fat attached.
7. A residue analytical finding is normally recorded on FSIS Form 10,530.1, FSIS Form 10,000-2 or other designated form as four numerical characters with the decimal point absent, but inferred, between the second and third character. For example, "2.50 ppm" is expressed as "0250" on the form. This four character analytical finding is preceded by a three character residue code and a one or two character tissue code. For Example, 104-1-1234 means dieldrin (104) was found in the fat (1) at 12.34 parts per million (1234).

¹ Under FSIS Directive 10,530.3, Contamination Response System (CRS), a potential violation is defined as a concentration of a pesticide or environmental contaminant, insufficient for product condemnation but sufficient to suggest a developing or ongoing residue problem in animals or products from the same source. This concentration is 80% to 100% of the residue limit unless otherwise defined by FSIS on an individual basis. The laboratory notifies FSIS headquarters, a residue specialist in the Technical Services Center and the regional office of such findings for CRS residue case development.

Residue Limits

RESIDUE			EXCEPTIONS		
Code	Compound	Amount	Slaughter Class	Tissue	Amount
30	Aflatoxin	0.00 ppb			
80	I. Residue Class: Synthetic Pyrethrin Compounds				
81	Cypermethrin	0.00 ppm			
82	Deltamethrin	0.00 ppm			
83	Fenvalerate	1.50 ppm	Poultry and Rabbits	All	0.00
84	Flucythrinate	0.00 ppm	Horse, Swine, Cattle, Calves, Sheep and Goat	Fat L,M,K	1.00 0.10
85	Permethrin	0.00 ppb	Cattle, Calves, Horse, Sheep and Goat Swine Poultry	L,K Muscle Fat L,K Muscle Fat L,K Muscle Fat Eggs	2.00 0.25 3.00 3.00 0.25 3.00 0.25 0.05 0.15 1.00
86	II. Residue Class: Natural Pyrethrin Compounds				
100	III. Residue Class: Halogenated Hydrocarbon Compounds				
101	Aldrin	0.30 ppm		Eggs	0.03
102	BHC	0.30 ppm		Eggs	0.05
103	Chlordane	0.30 ppm		Eggs	0.10
104	Dieldrin	0.30 ppm		Eggs	0.03
105	DDT	5.00 ppm		Eggs	0.5
106	Endrin	0.30 ppm		Eggs	0.03
107	Heptachlor	0.20 ppm		Eggs	0.01
108	Lindane	4.00 ppm	Cattle, Horses, Sheep and Goats	Fat Eggs	7.00 0.05
109	Methoxychlor	3.00 ppm		Eggs	0.00
110	Toxaphene	7.00 ppm		Eggs	0.70

RESIDUE			EXCEPTIONS		
Code	Compound	Amount	Slaughter Class	Tissue	Amount
111	PCB	3.00 ppm		Eggs	0.30
112	HCB	0.50 ppm		Eggs	0.30
113	Mirex	0.10 ppm		Eggs	0.10
114	Strobane	0.00 ppm			
115	Nonachlor	0.00 ppm			
116	Dioxin - OCDD				
117	Dioxin - HCDD				
118	Dioxin - HEXA-CC				
123	Pentachlorophenol	0.00 ppm			
154	Phosalone	0.00 ppm	Cattle, Swine, Sheep and Goats	All	0.25
161	ParaDichlorobenzine	0.00 ppm			
191	PBB	0.00 ppb			
192	Ethylene Dibromide	0.00 ppm			
200	IV. Residue Class: Antibiotics				
201	Penicillin	0.00 ppm	Cattle and Calves Turkeys	All All	0.05 0.01
202	Streptomycin	0.00 ppm	Rabbits Cattle, Calves, Swine and Chickens Turkeys, Ducks and Geese	Kidney Muscle Kidney L,M,F All	2.00 0.50 2.00 0.50 0.50
203	Chloramphenicol	0.00 ppb			
204	Tetracycline	0.00 ppm	Cattle, Calves, Swine, Sheep, Chickens, Turkeys and Ducks	Muscle Liver Fat kidney	2.00 6.00 12.00 12.00
205	Tylosin	0.20 ppm	Rabbits, Horses, Sheep and Goats	All	0.00
206	Erythromycin	0.00 ppm	Cattle, Calves and Swine Chicken and Turkeys	All All Egg	0.10 0.125 0.025

RESIDUE			EXCEPTIONS		
Code	Compound	Amount	Slaughter Class	Tissue	Amount
207	Neomycin	0.00 ppm	Horse, Calves and Cattle	Muscle	0.25
				All	0.25
				Liver	0.50
			Swine	Muscle	0.25
				Kidney	7.20
				Fat	1.00
				Liver	0.75
				Muscle	0.25
				Kidney	7.20
			Sheep and Goats	Fat	1.00
				Liver	1.25
				Muscle	0.25
				Kidney	7.20
				Fat	1.25
			Poultry	Liver	0.75
Muscle	0.25				
Kidney	7.20				
Fat	0.50				
208	Oxytetracycline	0.00 ppm	Cattle, Calves, Swine, Sheep, Chicken, Turkeys and Ducks	Liver	6.00
				Muscle	2.00
				Kidney	12.00
				Fat	12.00
209	Chlortetracycline	0.00 ppm	Cattle, Calves, Swine, Sheep, Chicken, Turkeys and Ducks	Liver	6.00
				Muscle	2.00
				Kidney	12.00
				Fat	12.00
210	Unidentified Microbial Inhibitor. Not a Violation - FSIS Directive 10,012.1.				
211	Gentamicin	0.00 ppm	Swine	Liver	0.30
				Muscle	0.10
			Chickens and Turkeys	K, F	0.40
				All	0.10
212	Lincomycin	0.00 ppm	Swine	All	0.10
213	Cloxacillin	0.00 ppm	Cattle and Calves	All	0.01
214	Apramycin	0.00 ppm	Swine	Liver	0.30
				Muscle	0.10
				K, F	0.40
215	Amoxicillin	0.00 ppm	Cattle, Calves and Swine	All	0.01
216	Novobiocin	0.00 ppm	Cattle, Calves	All	1.00

RESIDUE			EXCEPTIONS		
Code	Compound	Amount	Slaughter Class	Tissue	Amount
			and Poultry		
218	Virginiamycin	0.00 ppm	Swine	Liver	0.30
				Muscle	0.10
				K,F	0.40
				Skin	0.40
			Young Chickens	Liver	0.30
				Muscle	0.10
				Kidney	0.50
				Fat	0.20
				Skin	0.20

300	(a).	Residue Class: Non-Chlorinated Organophosphates throughout the 300 series			
360	(b).	Residue Class: Chlorinated Organophosphates throughout the 300 series			
301	Coumaphos	1.00 ppm	Rabbits	All	0.00
				Eggs	0.10
302	Dichlorvos	0.02 ppm	Swine	All	0.10
			Poultry	All	0.05
			Rabbits	All	0.00
				Eggs	0.05
303	Diazinon	0.00 ppm	Cattle, Calves and Sheep	All	0.70
304	Ethion	0.20 ppm	Cattle and Calves	Fat	2.50
				L,K	1.00
				Fat in	2.50
				Muscle	
			Rabbits	All	0.00
305	Malathion	4.00 ppm	Rabbits	All	0.00
				Eggs	0.10
306	Parathion	0.00 ppm			
307	Ronnel	0.00 ppm			
308	Crufomate	0.00 ppm			
309	Trichlorfon	0.00 ppm	Horse, Cattle, Calves, Sheep and Goats	F,L,M,K	0.10
310	Methyl Parathion	0.00 ppm			
311	Dioxathion	0.00 ppm	Horse, Cattle, Calves, Swine, Sheep and Goats	Fat	1.00
312	Disulfoton	0.00 ppm			
313	Fenitrothion	0.00 ppm			
314	Stirofos	0.00 ppm	Horse	Fat	0.50
			Cattle and Calves	Fat	1.50
			Swine	Fat	1.50
			Sheep and Goats	Fat	0.50
			Poultry	Fat	0.75
				Eggs	0.10
315	Chlorpyrifos	0.00 ppm	Cattle and Calves	Fat	0.30
				M,L,K	0.05
			Swine	Fat	0.20
				M,L,K	0.05
			Sheep and Goats	Fat	0.20
				M,L,K	0.05
			Poultry	F,M,L,K	0.10
			Horse	F,M,L,K	0.25
				Eggs	0.01
318	Carbophenothion	0.00 ppm			
320	Chlorfenvinphos	0.00 ppm	Horse, Goats, Swine and Poultry	Fat	0.005

			Cattle, Calves and Sheep	Fat	0.20
				Eggs	0.005
360	V (b). Residue Class: Chlorinated Organophosphates throughout the 300 series				
400	VI. Residue Class: Trace Elements -				
	Tolerances are only defined for arsenic and are limited to species where ar compounds are approved as pesticides or growth as promotants. Many trace elements are normal in edible tissue but may be toxic if present in excess. Technical Services Center will provide guidance.				
401	Arsenic: (Residue amounts represent FDA and EPA tolerances calculated in terms of elemental arsenic. FSIS reports all findings as elemental arsenic)		Cattle and Calves	L,K	2.05
				M,F	0.53
			Swine	L,K	2.00
				Muscle	0.50
			Chicken and Turkey	L,K	2.00
				M	0.50
				Egg	0.50
500	VII. Residue Class: Hormones				
501	DES	0.00 ppb			
504	MGA	0.00 ppb	Cattle and Calves	Fat	25.00
510	Zeranol	0.00 ppb	Cattle and Calves	Kidney	450.00
				Liver	300.00
				Muscle	150.00
				Fat	600.00
513	Zearalenone	0.00 ppb			
515	Trenbolone	0.00 ppb	Cattle and Calves	All	No Limit
560	VIII. Residue Class: Beta Agonists				
561	Clenbuterol	0.00 ppb			
600	IX. Residue Class: Carbamates				
601	Carbaryl	0.00 ppm	Horse, Swine, Cattle, Calves, Sheep and Goats	F,M L,K	0.10 1.00
			Poultry	F,M	5.00
602	Aldicarb	0.01 ppm	Poultry and Rabbits	All	0.00
				Eggs	0.00
604	Propoxur	0.00 ppm			
605	Carbofuran	50.00 ppb	Poultry and Rabbits	All	0.00
				Eggs	0.00
606	Methiocarb	0.00 ppm			
607	Bufencarb	0.00 ppm			
608	Methomyl	0.00 ppm			
615	Thiram	0.00 ppm			
62	Cyromazine	0.00 ppm	Mature Chickens	F, L, M, K	0.05
1			Eggs (Cyromazine+ Melamine)		0.25

622	Melamine	0.00 ppm	Mature Chicken Eggs (Cyromazine+ Melamine)	F,L,M,K	0.05 0.25
700	X. Residue Class: Herbicides				
701	2,4-D	0.00 ppm	Horse, Swine, Cattle, Calves, Goat and Sheep Poultry	F,L,M Kidney F,L,M,K Eggs	0.20 2.00 0.05 0.05
702	2, 4, 5-T	0.00 ppm			
710	XI. Residue Class: Triazine Herbicides				
712	Propazine	0.00 ppm			
713	Terbuthylazine	0.00 ppm			
714	Atrazine	0.02 ppm	Rabbit	All	0.00
717	Simazine	0.02 ppm	Rabbit	All	0.00
725	Alachlor	0.02 ppm	Rabbit	All	0.00
800	XII. Residue Class: Sulfonamides				
801	Sulfaethoxy pyridazine	0.00 ppm	Cattle and Calves	All	0.10
802	Sulfachlorpyridazine	0.00 ppm	Calves and Swine	All	0.10
803	Sulfadimethoxine	0.00 ppm	Cattle, Calves, and Poultry	All	0.10
804	Sulfanitran	0.00 ppm			0.10
805	Sulfamethazine	0.00 ppm	Cattle, Calves, Swine, Chickens, and Turkeys	All	0.10
806	S-Chloropyrazine monohydrate	0.00 ppm			
807	S-Methoxy pyridazine	0.00 ppm			
808	Sulfamerazine	0.00 ppm			
809	Sulfathiazole	0.00 ppm	Swine	All	0.10
810	Sulfaquinoxaline	0.00 ppm	Cattle, Calves, Rabbits, Chickens and Turkeys	All	0.10
811	S-Bromomethazine	0.00 ppm	Cattle and Calves	All	0.10
812	Sulfamethiazole	0.00 ppm			
813	Sulfanilamide	0.00 ppm			
814	Sulfapyrazine	0.00 ppm			
815	Sulfadiazine	0.00 ppm			
816	Sulfadoxene	0.00 ppm			
817	Sulfamethaxazole	0.00 ppm			
900	XIII. Residue Class: Drugs- General				
901	Clopidol	0.00 ppm	Cattle, Calves, Sheep and Goats Swine Poultry	Liver Muscle Kidney All L,K	1.50 0.20 3.00 0.20 15.00

				Muscle	5.00
904	Decoquinate	0.00 ppm	Cattle, Calves, Goats & Chickens	All-- except SkelMusc	2.00 1.00
905	Monensin	0.00 ppm	Cattle, Calves, and Goats Chickens, Turkeys and Quail	All All	0.05 No Limit
907	Carbadox	0.00 ppb	Swine	All	30.00
908	Robenadine	0.00 ppm	Chickens	Fat L,M,K	0.20 0.10
910	Levamisole	0.00 ppm	Cattle, Calves, Swine and Sheep	All	0.10
912	Gentian Violet	0.00 ppm			
913	Dibutyltindilaurate	0.00 ppm			
917	Lasalocid	0.00 ppm	Cattle and Calves Sheep Chickens	Liver M,K,F All Skin+ AdherFat M,L,K	0.70 ???? No limit 0.30 ????
921	Morantel Tartrate	0.00 ppm	Cattle and Calves	Liver M,K,F	0.70 ????
922	Pyrantel Tartrate	0.00 ppm	Swine	L,K Muscle	10.00 1.00
923	Ivermectin	0.00 ppb	Cattle and Calves Swine Sheep Reindeer	Liver M,K,F Liver M,K,F Liver M,K,F Liver M,L,F	100.00 ???? 20.00 ???? 30.00 ???? 15.00 ????
925	Diminazine Aceturate	0.00 ppb			
926	Halofuginone	0.00 ppm	Young Chickens Turkeys	Liver M,K,F Liver M,K,F	0.16 ???? 0.13 ????
927	Clorsulon	0.00 ppm	Cattle and Calves	Kidney L,M,F	1.00 ????
928	Nicarbazine	0.00 ppm	Chickens	L,M,K	4.00
951	Albendazole	0.00 ppm	Cattle and Calves Sheep	Liver M,K,F Liver M,K,F.	0.20 ???? 0.25 ????

952	Fenbendazole	0.00 ppm	Cattle, Calves and Goat Swine	Liver M, K, F All	0.80 ???? No Limit
953	Thiabendazole	0.10 ppm	Rabbits	All	0.00
954	Mebendazole	0.00 ppm			
955	Oxfendazole	0.00 ppm	Cattle and Calves	Liver M, K, F	0.80 ????
961	Ipronidazole	0.00 ppb			
962	Dimtridazole	0.00 ppb			