ANNEX I

No	EC No	Additiv	e Chemic formula		Maxiı age		unMaxim t content		Duration
	110			ti on tegor of animal		mg/kg comple feeding	of ete	provisio	authorisatio
		Colourin matters including pigments	5 5	:1-					
		1.	Carotene and xanthopl						
	E 160a	Beta- carotene	C ₄₀ H ₅₆	Canaries		_	—		30.9.1999
	E 160c	Capsantl	าйі ₄₀ Н ₅₆ О	3Poultry			80 (alone or with the other caroteno and xanthoph		Without a time limit
	E 160e	Beta- apo-8'- carotena	C ₃₀ H ₄₀ O	Poultry			80 (alone or with the other caroteno and xanthoph		Without a time limit
	E 160f	Ethyl ester of beta- apo-8'- caroteno acid	C ₃₂ H ₄₄ O	₂ Poultry			80 (alone or with the other caroteno and xanthoph		Without a time limit
	E 161b	Lutein	C ₄₀ H ₅₆ O	₂ Poultry			80 (alone or with the other caroteno and xantho- phylls)	ids	Without a time limit

E 161c	Cryptoxa	1.6011,560	Poultry		80 (alone or with the other caroteno and xantho- phylls)	— ids	Without a time limit
E 16lg	Canthaxa	абфын ₅₂ О	2Poultry		80 (alone or with the other caroteno and xantho- phylls)	ids	Without a time limit
			Salmon, trout		80	Use permitted from the age of six months onwards The mixture of canthaxa with astaxanth is allowed provided that the total concentr of the mixture does not exceed 100 mg/ kg in the completed feedings	limit nthin nin ation
			Dogs, cats and			_	Without a time limit

				ornamen fish	tal			
				Pet and ornamen birds	 tal	 	_	30.9.1999
	E 161h	Zeaxanthi	6140H56O	2Poultry		 80 (alone or with the other caroteno and xanthoph		Without a time limit
]	E 16li	Citranaxa	ճֆիЊ ₄₄ О	Laying hens		 80 (alone or with the other caroteno and xanthoph		Without a time limit
	E 161j	Astaxant	διφ ₀ Η ₅₂ Ο	₄Salmon, trout		100	Use only permitted from the age of six months onwards The mixture of astaxantl with canthaxa is allowed provided that the total concentr of the mixture does not exceed 100 mg/ kg in the	nin nthin

						complete feedings	
			Ornamer fish	n tal	 		Without a time limit
11	Astaxant rich <i>Phaffia</i> <i>rhodozyr</i> (CBS 116.94)	Kioncenti biomass of the nyeast <i>Phaffia</i> rhodozyr (CBS 116.94), killed, containin at least 2,5 g astaxantl per kilogram additive	trout na ng nin		100	The maximum content is expressed as astaxantl Use only permitted from the age of six months onwards The mixture of the additive with canthaxa is allowed provided that the total concentrr of astaxantl and canthaxa does not exceed 100 mg/kg in the complete feedings	d nin d nthin ation nin nthin
12	Astaxant rich <i>Phaffia</i> <i>rhodozyr</i> (ATCC 74219)	Kioncentr biomass of the nyeast Phaffia rhodozyr (ATCC	trout		100	The maximum content is expresse as astaxantl	d

74219), killed, containing at least 4,0 g astaxanthin per kilogram of additive and having a the aye of additive and having a though and below of additive and having a though and below a content of 2 000 mg/ kgUse permitted only from the age of six months onwards the additive a ditive a a though and the additive a ditive a a content of 2 output down and content of 2 down and content of 2 down and content of 2 down and content down an	74210)			Uaa	
containing at least 4,0 g astaxanthinonly from the age of six months of months of additive and having a maximum ethoxyquin content of 2 000 mg/ kgonly from the age of six months onwards ditive additive additive a a content of 2 000 mg/ kg in					1
at least 4,0 g astaxanthin per kilogram of additive and having a content of 2 000 mg/ kg kg kg kg kg kg kg kg kg kg					1
4,0 g astaxanthin per kilogram of additive and having athe age of six months onwards The mixture additive additive a a maximum ethoxyquin content of 2 000 mg/ kgthe age of six months onwards the additive additive a allowed provided that the total concentration of astaxanthin and canthaxanthin additive kg					
astaxanthin per kilogram of additive and having a maximum ethoxyquin content of 2 000 mg/ kg kg kg kg kg kg kg kg kg kg					
per kilogram of additive and having a a maximum ethoxyquin content of 2 000 mg/ kg					
kilogram of additive and having aonwards The mixture of the additive a dditive aaof the additive a aadditive with canthaxanthin is allowed provided that the total concentration of astaxanthin and canthaxanthin is allowed provided that the total concentration of astaxanthin and canthaxanthin does not exceed 100 mg/ kg in					
of additive and having a maximum ethoxyquin content of 2 000 mg/ kg					
additive and having a maximum ethoxyquin content of 2 000 mg/ kg	kilogram				
and having a maximum ethoxyquin content of 2 000 mg/ kg					
having a maximum ethoxyquin content of 2 000 mg/ kg having a maximum ethoxyquin content of 2 000 mg/ kg having a additive with canthaxanthin is allowed provided that the total concentration of astaxanthin and canthaxanthin is concentration of astaxanthin and canthaxanthin and canthaxanthin and canthaxanthin and canthaxanthin and canthaxanthin does not exceed 100 mg/ kg in					
a maximum ethoxyquin content of 2 000 mg/ kg kg kg kg kg kg kg kg kg kg kg kg kg					
maximum ethoxyquin content of 2 000 mg/ kg	having				
ethoxyquin content of 2 000 mg/ kg kg kg kg kg kg kg kg kg kg kg kg kg					
content of 2 000 mg/ kg kg allowed provided that the total concentration of astaxanthin and canthaxanthin does not exceed 100 mg/ kg in					nthin
of 2 000 mg/ kg by that the total concentration of astaxanthin and canthaxanthin does not exceed 100 mg/ kg in					
000 mg/ kg 000 mg/ kg 000 mg/ astaxanthin and canthaxanthin does not exceed 100 mg/ kg in					
kg kg total concentration of astaxanthin and canthaxanthin does not exceed 100 mg/ kg in					
concentration of astaxanthin and canthaxanthin does not exceed 100 mg/ kg in	000 mg/				
of astaxanthin and canthaxanthin does not exceed 100 mg/ kg in	kg				
astaxanthin and canthaxanthin does not exceed 100 mg/ kg in					ation
and canthaxanthin does not exceed 100 mg/ kg in					
canthaxanthin does not exceed 100 mg/ kg in				astaxanth	in
does not exceed 100 mg/ kg in					
not exceed 100 mg/ kg in				canthaxa	nthin
exceed 100 mg/ kg in				does	
100 mg/ kg in				not	
kg in				exceed	
				100 mg/	
				kg in	
				the	
complete				complete	1
feedingstuff					
Ethoxyquin					
content					
to be				to be	
declared				declared	

ANNEX II

EC No	Element	Additive	Chemical formula	Maximum content of the element in mg/ kg of the complete feedingstuff	Other provisions	Duration of authorisation
E4	Copper-Cu	Cupric acetate, monohydrate	Cu(CH ₃ COC . H ₂ O	Bigs for fattening:		Without a time limit

Basic cupric	$CuCO_3$. $Cu(OH)_2$.	in Member States		Without a time limi
carbonate, monohydrate	H ₂ O	where the mean		
Cupric chloride, dihydrate	CuCl ₂ . 2H ₂ O	 density of the porcine population is equal to 	_	Without a time limi
[^{F1}]		or higher than 175		
Cupric oxide	CuO	pigs per 100 ha of		Without a time limi
Cupric sulphate, pentahydrate	CuSO ₄ . 5H ₂ O	utilisable agricultural land: up to		Without a time limi
		16 we 17	eks:	
		- fro 171 we	m th	
		up to sla	ughter:	
		35 (to	tal)	
		in Member States where		
		the mean density of the porcine		
		population is lower than 175		
		pigs per 100 ha of utilisable agricultural land:		
		— up to 16		
		17	eks: 5 tal)	
		- fro 171 we	m th	
		up		

	to 6 months: 100 (total) - over six months up to slaughter: 35 (total) Breeding pigs: 35 (total) Calves: - milk replacers: 30 (total) - other complete feedingstuffs: 50 (total) Ovines: 15 (total) Other species or categories of animals: 35 (total)
Cupric sulphate, monohydrateCuSO4 . H2OCupric sulphate, pentahydrateCuSO4 . SH2O	Pigs for fattening:Denatured skimmedWithout a time limitin Memberskimmed milktime limitStates where the mean density of the porcinepowder and reedingstuffswithout a time limitdensity of the porcine population is equal to or higher pigs per 100 ha of utilisable agricultural land:Without a time limitmultiple the provisionsmanufactured from denatured to skimmed to tomultiple the agricultural land:multiple the of tomultiple tothe commission

		16	Regulations
		weeks:	(EEC)
		175	No 368/77
			1
		(total)	and
	—	from	(EEC)
		17th	No 443/77
		week-	declaration
		up	of
		-	the
		to	
		slaughter:	amount
		35	of
		(total)	copper
	in Memb	er	added,
	States	-	expressed
	where		as
	the mean		the
	density o		element,
	the porci	ne	on
	populatic		the
	is lower		label
	than 175		or
	pigs per	c	package
	100 ha ot		or
	utilisable		container
	agricultu	ral	of
	land:		denatured
		up	skimmed
		to	milk
		16	powder
			powder
		weeks:	
		175	
		(total)	
	——	from	
		17th	
		week	
		up	
		to	
		6	
		months:	
		100	
		(total)	
		over	
		six	
		months	
		up	
		to	
		slaughter:	
		35	
		(total)	
	Breeding		
	pigs: 35	'	
	(total)		

		Ovines: 15 (total) Other species or categories of animals with the exception of calves: 35 (total)		
Cupric chelate of amino acids hydrate	Cu (x) ₁₋₃ . nH ₂ O (x = anion of any amino acid derived from hydrolysed soya protein) Molecular weight not exceeding 1 500	- fro 17t we up to	al) m h ek ughter:	Without a time limit

				17: (to fro 17t we up to six mo 100 (to 	tal) m h ek nths:) tal) er	
E5	Manganese- Mn	[^{F1} Manganou carbonate]	ı 4^{F1}MnCO 31	[^{F1} 250 (total)]	[^{F1} —]	[^{F1} Without a time limit]
		Manganous chloride, tetrahydrate	MnCl ₂ . 4H ₂ O	250 (total)		Without a time limit
		[^{F1}]			1	
		Manganous oxide	MnO	250 (total)	—	Without a time limit

		[^{F1}]							
		[^{F1}]							
		Manganous sulphate, monohydrate	MnSO ₄ . H ₂ O	250 (total)		Without a time limit			
		Manganese chelate of amino acids hydrate	$\begin{array}{l} Mn \ (x)_{1\text{-}3} \ . \\ nH_2O \\ (x = anion \\ of any \\ amino acid \\ derived \\ from \\ hydrolysed \\ soya \\ protein) \\ Molecular \\ weight not \\ exceeding 1 \\ 500 \end{array}$	250 (total)	Not more than 40 mg/ kg of manganese in the complete feedingstuff may come from manganese chelate of amino acids hydrate	Without a time limit			
E6 2	Zinc-Zn	[^{F1} Zinc lactate, trihydrate]	[^{F1} Zn(C ₃ H ₅ C 3H ₂ O]	3) ^{F1} 250 (total)]	[^{F1}]	[^{F1} Without a time limit]			
		Zinc acetate, dihydrate	Zn(CH ₃ COC . 2H ₂ O) <u>§</u> 50 (total)		Without a time limit			
		[^{F1}]							
		[^{F1}]							
		Zinc oxide	ZnO	250 (total)	Maximum content of lead: 600 mg/kg	Without a time limit			
		Zinc sulphate, heptahydrate	ZnSO ₄ . 7H ₂ O	250 (total)		Without a time limit			
		Zinc sulphate, monohydrate	ZnSO ₄ . H ₂ O	250 (total)		Without a time limit			
		Zinc chelate of amino acids hydrate	Zn (x) ₁₋₃ . nH ₂ O (x = anion of any amino acid derived from hydrolysed	250 (total)	Not more than 80 mg/ kg of zinc in the complete feedingstuff may come from zinc chelate of	Without a time limit			

	soya protein) Molecular weight not exceeding 1 500		amino acids hydrate	
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Textual Amendments

F1 Deleted by Commission Implementing Regulation (EU) 2017/1145 of 8 June 2017 on the withdrawal from the market of certain feed additives authorised pursuant to Council Directives 70/524/EEC and 82/471/EEC and repealing the obsolete provisions authorising those feed additives (Text with EEA relevance).

ANNEX III

EC No	Additive	Chemica formula descript		age	mMinimu content mg/ kg of complete feedings	content	nOther provisio	Duration nsof authorisation					
E 320	Butylated hydroxya (BHA)	C ₁₁ H ₁₆ O ₂ nisole	species or			150: alone or together	All feedingstu	Without a afs ime limit					
E 321	Butylated hydroxyto (BHT)	C ₁₅ H ₂₄ O oluene	categories of animals except										
E 324	Ethoxyqu	i£ ₁₄ H ₁₉ ON			—								
E 320	Butylated hydroxya (BHA)	C ₁₁ H ₁₆ O ₂ nisole	Dogs			150: alone or together	The mixture of ethoxyqui with BHA and/or BHT is allowed provided the total concentra of the mixture does not exceed 150 mg/ kg of	Without a time limit					
E 321	Butylated hydroxyto (BHT)	C ₁₅ H ₂₄ O oluene	•			-		with BHA	in				
E 324	Ethoxyqu	i£ ₁₄ H ₁₉ ON	Dogs			100		tion					

		complete feedingstuff	
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ANNEX IV

No	Additive	Chemical Species formula, or descriptio n ategory of animal		Maximu age	mMinimu activity	numMaximumOther ty activity provis			
			io c ategory of		Unit of activity per kg of complete feedingst	,	F	authorisatio	
1	3- phytase (EC 3.1.3.8)	Preparation of 3- phytase produced	Pigs (all categories of animals)		_		_	21.4.1999	
		by Aspergilla niger (CBS 114.94) having a	Chickens (all categories of animals)					21.4.1999	
		minimum phytase activity of 5 000 FTU ^a /g for solid and liquid preparatic	5		125 FTU			30,9,1999 Indicate in the directions for use for the additive and the premixture the storage temperature, storage duration and stability on pelleting	
								Recommended dose per	

pH 5,5 and 37 °C.

									kg of complete feedingstuff: 200-800 FTU
								3.	For
									use
									in
									compound feedingstuffs
									with
									a minimum
									content
									of
									0,3 %
									phytate,
									e.g.
									20 %
									wheat
a	a 1 FTU is the amount of enzyme which liberates 1 micromole of inorganic phosphate per minute from sodium phytate at pH 5,5 and 37 °C.								

Changes to legislation:

There are currently no known outstanding effects for the Commission Regulation (EC) No 2316/98.