

TS1.5 - Specific feed safety limits

Version EN: 1 January 2024





Index

WE	LCOME	. 3
	INTRODUCTION / SCOPE OF THIS DOCUMENT	-
1.	INTRODUCTION / SCOPE OF THIS DOCUMENT	. э
2	SPECIFIC FFFD SAFFTY LIMITS	4

Welcome

This Feed Certification scheme document helps you to provide feed safety worldwide. By meeting the requirements set by GMP+ International together with our GMP+ Community, we aim to help you get the feed certification you need. Please read the information in this document carefully.

Let's make this work together!

1. Introduction / Scope of this document

In the different GMP+ documents there are many references made to specific feed safety limits. In this document you will find an overview. These standards were created in consultation with the relevant parties in the animal production chain.

DISCLAIMER: GMP+ International has compiled this list in order to inform interested parties with respect to the standards. The list will be regularly updated. GMP+ International is not liable for any errors in this list.

2. Specific feed safety limits

There are two clear limits in GMP+ product standards if undesirable substances are found in any type of feed: the **action limit**, and the **rejection limit**. These limits refer to what it means for the GMP+ certified company if specified levels of undesirable substances are found in feed. The action limit for undesirable substances is lower than the rejection limit.

As is stated in the various GMP+ documents, the certified company must ensure that deviations (in the product or process) from the requirements in this document are recorded and controlled in order to prevent unintentional use or delivery of the product

The product standards for the maximum level of undesirable substances is calculated proportionately from the product standard for the individual component for mixes of feed materials (semi-manufactured product) which are marketed as such.

Action limit

If undesirable substances are found in any type of feed at levels above the **action limit** — and below the **rejection limit** — this means you must take action.

If the **action limit** is exceeded — then the GMP+ certified company must investigate the source of the contamination, and take measures to remove or limit the source of the contamination (see R 1.0 *Feed Safety Management Systems Requirements*, § 8.7).

This limit has been agreed upon in consultation with the sector, the supplier, or the customer.

Rejection limit

If undesirable substances are found in feed at levels above the **rejection limit** then the product is <u>not suitable for use</u> as a feed material or feed (see R 1.0 *Feed Safety Management Systems Requirements*, § 8.7).

This limit has been agreed upon in consultation with the sector, the supplier, or the customer.



Code	Contaminant	Product	Action limit (1)	Rejection limit (1)	Supplementary requirements
Microb	piological: Other undesira	ble substances and products			
M1	Antibacterial inhibition	Feed materials Wet mixes	-	< 15 mm	According to the 5-plate test MB003, derived from EG-4-plate test, product basis (RIVM report no. 206; Archiv fur Lebensmittel-hygiene 31 (1981) page 97-140.

(1)

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Microl	biological				
M3	Enterobacteriaceae	Animal by-products that are placed on the market as feed materials.		300 CFU/g	n = 5, c = 2, m = 10, M = 300 in 1 g ¹⁴ These standards apply to: samples of the final products taken during or on withdrawal from storage at the processing plant. This microbiological standard shall not apply to rendered fat and fish oil from the processing of animal by-products, when the processed animal protein, which is obtained during the same processing, is subject to sampling to ensure compliance with those standards. Further, for imports from outside the European Union (EU) specific requirements may apply. See Regulation (EU)
		Processed petfood - Dogchews and processed petfood, with the exception of canned		300 CFU/g	142/2011 for more information. $n = 5$, $c = 2$, $m = 10$, $M = 300$ in 1 g 14 Samples are taken during production and/or during storage (before dispatch).
		petfood - Canned petfood *			*Canned petfood which has been subjected to heat treatment with a Fc value of at least 3 Further, for imports from outside the European Union (EU) specific requirements may apply. See Regulation (EU) 142/2011 for more information.
		Raw petfood	5.000 CFU/g		The process of production of raw petfood shall meet the following 'process hygiene criterion' **: $n = 5$, $c = 2$, $m = 500$ in 1 g , $M = 5.000$ in 1 g 14 Samples are taken during production and/or during storage (before dispatch).

Specific Feed Safety Limits
6 / 79
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Process hygiene criterion' means a criterion indicating the acceptable functioning of the production process. Such a criterion is not applicable to products placed on the market. It sets an indicative contamination value above which corrective actions are required in order to maintain the hygiene of the process in compliance with general requirements for the safety of feed. See Regulation 142/2011, annex XIII, chapter 2, point 6 for more details (e.g. control measures, notification to the competent authority, etc.) on this "process hygiene criterion".
Further, for imports from outside the European Union (EU) specific requirements may apply. See Regulation (EU) 142/2011 for more information.

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

[14] n = number of samples to be tested; m = threshold value for the number of bacteria; the result shall be considered satisfactory if the number of bacteria in all samples does not exceed m; M = maximum value for the number of bacteria; the result shall be considered unsatisfactory if the number of bacteria in one or more samples is M or more; and c = number of samples the bacterial count of which may be between m and M, the sample shall still be considered acceptable if the bacterial count of the other samples is m or less.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Microb	oiological: Microbio	logical contamination			
M4a	Salmonella	Consumption chick feed: end products and feed materials for: - Top breeding consumption chicks - Breeding increase consumption chicks - Increase consumption chicks - Consumption chicks	-	0 ⁺ % ²⁰ (approaching 0%)	
		Laying poultry feed: end products and feed materials for: - Top breeding laying poultry - Raising increase laying poultry - Increase laying poultry	-	0 ⁺ % ²⁰ (approaching 0%)	
		- Laying-hens and breeding hens	1%	0+% ²⁰ (approaching 0%) for S. enteritidis and S. typhimurium	
		Turkey feed: end products and feed materials for: - Raising increase turkeys - Increase turkeys - Consumption turkeys	-	0 ⁺ % ²⁰ (approaching 0%)	
		Other animal feeds, feed materials and wet mixes intended for livestock farms (except for poultry feeds).	-	Absent in 25 gr	
		From animal by-products derived products with the exception of canned petfood	-	Absent in 25 gr	n = 5, c = 0, m = 0, M = 0 ¹⁴
		From animal by-products derived canned petfood		-	Canned petfood which has been subjected to heat treatment with a Fc value of at least 3

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M4b	Salmonella preservation determined through pH	Feed materials for delivery to livestock farms.		Maximum pH for guarantee:	If preservation can be achieved at a higher pH then this should be supported with data.
		Wet mixes for delivery to livestock farmers on the basis of:			
		- Spontaneous lactic acid fermentation	-	4.5	These norms do not apply if the products are supplied at a temperature of at least 60°C and the
		- Add organic acids		4	supplier is demonstrably informed of the storage conditions.
		- Add inorganic acids		3,5	The absence of Salmonella can also be shown in heat-treated wet mixes and feed materials (<13% moisture) through compliance with the norms for Enterobacteriaceae.

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

[14] n = number of samples to be tested; m = threshold value for the number of bacteria; the results will be considered to be satisfactory if the number of bacteria in none of the samples is greater than m, M = maximum value for the number of bacteria; the result shall be considered unsatisfactory if the number of bacteria in one or more samples is M or more; c = number of samples for which the bacteria count gives a result between m and M and where the sample is still considered acceptable if the result of the bacteria for the other samples is not higher than m.

[20] Explanation of 0+: this norm does not apply to each individual sample. In a particular period of time the Salmonella incidence at company level should approach 0% (= 0+).



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Microb	piological: Microbiologica	l contamination			
M5a	Moulds	Feed materials	10 ⁶ CFU/g		In the <u>TNO report "Norm for fungal load in</u> <u>animal feed (S9.75)"</u> you can read the
M5b	Yeast	Feed materials≤ 12% moisture content or aw-value ≤ 0,95	10 ⁶ CFU/g		foundation of the new standards and the suggestions for analysis methods.
		Feed materials ≥ 12% moisture content or aw-value ≥ 0,95	-		suggestions for analysis methods.

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Mycotoxin				
C1	Aflatoxin B1	Feed materials intended for (direct) delivery to dairy farmers	-	0,005 mg/kg	
		Feed materials	-	0,02 mg/kg	
		Complementary and complete feed with the exception of:	-	0,01 mg/kg	
		- compound feed for dairy cattle and calves, dairy sheep and lambs, dairy goats and kids, piglets and young poultry animals.	-	0,005 mg/kg	
		- compound feed for cattle (except dairy cattle and calves), sheep (except dairy sheep and lambs), goats (except dairy goats and	-	0,02 mg/kg	
		kids), pigs (except piglets) and poultry (except young animals).			

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemic	cal: Crop protection agen	ts (Pesticides which are not permitte	d in the EU) *		
C2	Aldrin	Feed materials and compound feed, with the	-	0,01 mg/kg	Maximum level for aldrin and dieldrin, singly or combined, expressed as dieldrin.
	Dieldrin	exception of:			or combined, expressed as dielumi.
	(Singly or combined				
	expressed as dieldrin)	- fats and oils,		0,1 mg/kg	
		- compound feed for fish		0,2 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

^{*} Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirement
Chemi	cal: Heavy metals				
C3	Arsenic ¹⁶	Feed materials, with the exception of: - meal made from grass, from dried lucerne and from dried clover, and dried sugar beet pulp and dried molasses sugar beet pulp;	-	2 mg/kg 4 mg/kg	
		- palm kernel expeller;	-	4 mg/kg ¹⁵	
		- peat; leonardite;	-	5 mg/kg ¹⁵	
		- phosphates and calcareous marine algae;	-	10 mg/kg	
		 calcium carbonate; calcium and magnesium carbonate ¹¹; calcareous marine shells; 	-	15 mg/kg	
		 magnesium oxide and magnesium carbonate; 	-	20 mg/kg	
		 fish, other aquatic animals and products derived thereof; 	-	25 mg/kg ¹⁵	
		 seaweed meal and feed materials derived from seaweed. 	-	40 mg/kg ¹⁵	
		Iron particles used as tracer	-	50 mg/kg	
		Feed additives belonging to the functional group of compounds of trace elements except:	-	30 mg/kg	
		 cupric sulphate pentahydrate; cupric carbonate; dicopper; chloride trihydroxide; ferrous carbonate; dimanganese chloride trihydroxide; 	-	50 mg/kg	
		zinc oxide, manganous oxide and cupric oxide	-	100 mg/kg	

Specific Feed Safety Limits 13 / 79 © GMP+ International B.V.



Complete feed, with the exception of:	-	2 mg/kg
 complete feed for fish and fur animals; complete feed for pet animals containing fish, other aquatic animals and products derived thereof and/or seaweed meal and feed materials derived from seaweed. Complementary feed, with the exception of: 	-	10 mg/kg ¹⁵ 10 mg/kg ¹⁵ 4 mg/kg
- mineral feed	-	12 mg/kg
 complementary feed for pet animals containing fish, other aquatic animals and products derived thereof and/or seaweed meal and feed materials derived from seaweed. 	-	10 mg/kg ¹⁵
 long-term supply formulations of feed for particular nutritional purposes with a concentration of trace elements higher than 100 times the established maximum content in complete feed. 	-	30 mg/kg

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

[11] Calcium and magnesium carbonate refers to the natural mixture of calcium carbonate and magnesium carbonate as described in the European Catalogue of feed materials.

[15] At the request of the competent authorities the responsible operator must carry out an analysis to show that the level of inorganic arsenic is lower than 2 ppm. This analysis is especially important for the Hizikia fusiforme seaweed

[16] The maximum levels refer to the total level of arsenic.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Other undesirable sub	stances and products			
C4	Hydrocyanic acid	Feed materials, with the exception of:	-	50 mg/kg	
		- linseed	-	250 mg/kg	
		- linseed cakes	-	350 mg/kg	
		- manioc products and almond cake.	-	100 mg/kg	
		Complete feed, with the exception of:	-	50 mg/kg	
		- complete feed for young chickens (< 6 weeks)	-	10 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chem	ical: Heavy metals				
26	Cadmium	Feed materials of vegetable origin	-	1 mg/kg	
		Feed materials of animal origin	-	2 mg/kg	
		Feed materials of mineral origin, with the exception of:	-	2 mg/kg	
		- phosphates	_	10 mg/kg	
		Feed additives, belonging to the functional group "Compounds of trace elements", with the exception of:	-	10 mg/kg	
		- cupric oxide, manganous oxide, zinc oxide and manganous sulphate-monohydrate	-	30 mg/kg	
		Feed additives belonging to the functional groups of binders and anti-caking agents	-	2 mg/kg	
		Premixtures	-	15 mg/kg ²	
		Complementary feed with the exception of:	-	0,5 mg/kg	
		- Mineral feed			
		- containing < 7% phosphorus ⁸ - containing > 7% phosphorus ⁸	-	5 mg/kg 0,75 mg/kg per 1% phosphorus ⁸ , with a maximum of 7,5 mg/kg	
		- Complementary feed for pet animals	_	2 mg/kg	
		- Long-term supply formulations of feed for particular nutritional purposes with a concentration of trace elements higher than 100 times the established maximum content in complete feed.	-	15 mg/kg	
		Complete feed with the exception of:	-	0,5 mg/kg	
		- complete feed for cattle (except calves), sheep (except lambs) goats (except kids) and fish		1 mg/kg	
		- complete feed for pet animals	_	2 mg/kg	

Specific Feed Safety Limits

16 / 79

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Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

[2]The maximum level established for premixtures takes into account the additives with the highest level of lead and cadmium and not the sensitivity of the different animal species to lead and cadmium. As provided in Article 16 of Regulation (EC) No 1831/2003 of the European Parliament and of the Council of 22 September 2003 on additives for use in animal nutrition (OJ L 268, 18.10.2003, p. 29), in order to protect animal and public health, it is the responsibility of the producer of premixtures to ensure that, in addition to compliance with the maximum levels for premixtures, the instructions for use on the premixture are in accordance with the maximum levels for complementary and complete feed.

[8] The % of phosphorus is relative to a feed with a moisture content of 12 %.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Salts				
C7	Chloride	- Feed materials for delivery to livestock farms, and	10 g/kg (dry matter)		If the action limit is exceeded then a warning or processing advice must be <u>demonstrably</u> <u>communicated</u> to the customer.
		- Wet mixes for delivery to livestock farmers			Supply of additional water to the animals is also important to avoid health problems. More recommendations in the event of excess of the action limit can be found in Support document (S9.72) Salts in rations with wet feeds for fattening pigs and sows

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.



Code	Contaminant	Product	Action limit '	Rejection limit '	Supplementary requirements
Chemi	cal: Crop protection agen	ts (Pesticides which are not permitte	d in the EU) *		
C8	Camphechlor (toxaphene) –	Fish, other aquatic animals and products thereof with the exception of fish oil	-	0,02 mg/kg	
	sum of the indicators CHB 26,	- fish oil	-	0,2 mg/kg	
	30 dila 62	Complete feed for fish	-	0,05 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

[22] Numbering system according to Parlar, prefixed by either CHB or "Parlar":

- CHB 26: 2-endo,3-exo,5-endo,6-exo,8,8,10,10-octochlorobornane,
- CHB 50: 2-endo, 3-exo, 5-endo, 6-exo, 8, 8, 9, 10, 10-nonachlorobornane,
- CHB 62: 2,2,5,5,8,9,9,10,10-nonachlorobornane.

* Pesticides which are not included in Directive 2002/32/ EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemic	cal: Crop protection agent	ts (Pesticides which are not permitte	d in the EU) *		
C9	Chlordane (sum of cis- and transisomers and of oxychlordane expressed	Feed materials and compound feed with the exception of:	-	0,02 mg/kg	
	chlordane)	- fats and oils	-	0,05 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

^{*} Pesticides which are not included in Directive 2002/32/ EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Crop protection agen	ts (Pesticides which are not permitte	d in the EU) *		
C11	DDT (sum of DDT-, DDD- (or TDE-) and DDE-isomers,	Feed materials and compound feed with the exception of:	-	0,05 mg/kg	
	expressed as DDT)	- fats and oils	-	0,5 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

^{*} Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Other undesirable sub	ostances and products			
C12	Prohibited Animal proteins (Restricted animal proteins)	Animal feeds for productive livestock	-	0	See TS 1.4 Forbidden Products and Fuels

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.



Code	Contaminant	Product	Action limit 14	Rejection limit 14	Supplementary requirements
Chemi	cal: Toxic substances				
C13a	Dioxin ¹⁸ (sum of polychlorinated dibenzo-para-dioxins (PCDDs)	Feed materials of plant origin with the exception of vegetable oils and their by-products	0,5 ng WHO-PCDD/F- TEQ/kg	0,75 ng WHO-PCDD/F- TEQ/kg	In the event of exceeding the action limit: Identification of source of contamination. Once source is identified, take appropriate measures,
	and polychlorinated dibenzofurans (PCDFs) expressed in World Health	Vegetable oils and their by-products	0,5 ng WHO-PCDD/F- TEQ/kg	0,75 ng WHO-PCDD/F- TEQ/kg	where possible, to reduce or eliminate source contamination.
	Organisation (WHO) toxic equivalents, using the WHO-	Feed materials of mineral origin	0,5 ng WHO-PCDD/F- TEQ/kg	0,75 ng WHO-PCDD/F- TEQ/kg	
	TEFs (toxic equivalency factors, 2005))	Feed materials of animal origin: - Animal fat including milk fat and egg fat	0,75 ng WHO- PCDD/F-TEQ/kg	1,50 ng WHO-PCDD/F- TEQ/kg	
		- Other land animal products including milk and milk products and eggs and egg products.	0,5 ng WHO-PCDD/F- TEQ/kg	0,75 ng WHO-PCDD/F- TEQ/kg	
		Fish oil	4,0 ng WHO-PCDD/F- TEQ/kg	5,0 ng WHO-PCDD/F- TEQ/kg	In the event of exceeding the action limit: In many cases it might not be necessary to
		Fish, other aquatic animals and products derived thereof, with the exception of fish oil and hydrolysed fish protein containing more than 20% fat ⁶ and crustacean meal.	0,75 ng WHO- PCDD/F-TEQ/kg	1,25 ng WHO-PCDD/F- TEQ/kg	perform an investigation into the source of contamination as the background level in some areas is close or above the action level. However, in cases where the action level is
		Hydrolysed fish protein containing more than 20% fat; crustacean meal.	1,25 ng WHO- PCDD/F-TEQ/kg	1,75 ng WHO-PCDD/F- TEQ/kg	exceeded, all information, such as sampling period, geographical origin, fish species, etc., shall be recorded with a view to future measures to manage the presence of dioxins and dioxin-like compounds in the materials for animal nutrition.
		Feed additives belonging to the functional groups of binders and anti-caking agents (*)	0,5 ng WHO-PCDD/F- TEQ/kg	0,75 ng WHO-PCDD/F- TEQ/kg	In the event of exceeding the action limit: Identification of source of contamination. Once source is identified, take appropriate
		Feed additives belonging to the functional group of compounds of trace elements.	0,5 ng WHO-PCDD/F- TEQ/kg	1,0 ng WHO-PCDD/F- TEQ/kg	measures, where possible, to reduce or eliminate source of contamination.

Specific Feed Safety Limits 23 / 79 © GMP+ International B.V.



		Premixtures	0,5 ng WHO-PCDD/F- TEQ/kg	1,0 ng WHO-PCDD/F- TEQ/kg	(*) The maximum level is also applicable to the
		Compound feeds with the exception of:	0,5 ng WHO-PCDD/F- TEQ/kg	0,75 ng WHO-PCDD/F- TEQ/kg	feed additives belonging to the functional groups of substances for the control of radionuclide contamination and substances fo reduction of the contamination of feed by mycotoxins which are also belonging to the functional groups of binders and anti-caking agents.'
		- compound feed for pet animals and fish	1,25 ng WHO- PCDD/F-TEQ/kg	1,75 ng WHO-PCDD/F- TEQ/kg	In the event of exceeding the action limit: In many cases it might not be necessary to perform an investigation into the source of contamination as the background level in som areas is close or above the action level. However, in cases where the action level is exceeded, all information, such as sampling period, geographical origin, fish species, etc., shall be recorded with a view to future measures to manage the presence of dioxins and dioxin-like compounds in the materials for animal nutrition.
		- compound feed for fur animals	-	-	
C13b	Sum of dioxins and dioxin-like PCBs ¹⁸ (sum of polychlorinated	Feed materials of plant origin with the exception of vegetable oils and their by-products		1,25 ng WHO-PCDD/F- PCB-TEQ/kg	(*) the maximum level is also applicable to the feed additives belonging to the functional groups of substances for the control of radionuclide contamination and substances for reduction of the contamination of feed by mycotoxins which are also belonging to the functional groups of binders and anti-caking
	dibenzo- para-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs) and	Vegetable oils and their by-products		1,5 ng WHO-PCDD/F- PCB-TEQ/kg	
	polychlorinated biphenyls (PCBs) expressed in World	Feed materials of mineral origin		1,0 ng WHO-PCDD/F- PCB-TEQ/kg	
	Health Organisation (WHO)	Feed materials of animal origin:			agents.'
	toxic equivalents, using the WHO-TEFs (toxic equivalency factors, 2005))	- Animal fat including milk fat and egg fat		2,0 ng WHO-PCDD/F- PCB-TEQ/kg	
	iactors, 2003))	- Other land animal products including milk and milk products and eggs and egg products		1.25 ng WHO-PCDD/F- PCB-TEQ/kg	



		- Fish oil		20,0 ng WHO-PCDD/F- PCB-TEQ/kg	
		- Fish, other aquatic animals and products derived thereof with the exception of fish oil and fish protein hydrolysates containing more than 20% fat ⁶		4,0 ng WHO-PCDD/F- PCB-TEQ/kg	
		- Fish protein hydrolysates containing more than 20% fat		9,0 ng WHO-PCDD/F- PCB-TEQ/kg	
		The feed additives belonging to the functional groups of binders and anticaking agents (*)		1,5 ng WHO-PCDD/F- PCB-TEQ/kg	
		Feed additives belonging to the functional group of compound of trace elements.		1,5 ng WHO-PCDD/F- PCB-TEQ/kg	
		Premixtures		1,5 ng WHO-PCDD/F- PCB-TEQ/kg	
		Compound feed with the exception of:		1,5 ng WHO-PCDD/F- PCB-TEQ/kg	
		- Compound feed for pet animals and fish		5,0 ng WHO-PCDD/F- PCB-TEQ/kg	
		- Compound feed for fur animals		-	
C13c	Dioxin-like PCBs ¹⁸ (sum of polychlorinated biphenyls (PCBs) expressed in	Feed materials of plant origin with the exception of vegetable oils and their by-products	0,35 ng WHO-PCB- TEQ/kg		In the event of exceeding the action limit: Identification of source of contamination. Once source is identified, take appropriate measures,
	World Health Organisation (WHO) toxic equivalents, using the WHO- TEFs (toxic	Vegetable oils and their by-products	0,5 ng WHO-PCB- TEQ/kg		where possible, to reduce or eliminate source of contamination.
	equivalency factors, 2005) Feed materials of mineral origin	Feed materials of mineral origin	0,35 ng WHO-PCB- TEQ/kg		
		Feed materials of animal origin:			
		- Animal fat including milk fat and egg fat	0,75 ng WHO-PCB- TEQ/kg		
		- Other land animal products including milk and milk products and eggs and egg products	0,35 ng WHO-PCB- TEQ/kg		
		- Fish oil	11,0 ng WHO-PCB- TEQ/kg		In the event of exceeding the action limit: In many cases it might not be necessary to



		- Fish, other aquatic animals and products derived thereof with the exception of fish oil and fish protein, hydrolysed, containing more than 20% fat ⁶	2,0 ng WHO-PCB- TEQ/kg		perform an investigation into the source of contamination as the background level in some areas is close or above the action level. However, in cases where the action level is	
		- Fish protein, hydrolysed, containing more than 20% fat	5,0 ng WHO-PCB- TEQ/kg		exceeded, all information, such as sampling period, geographical origin, fish species, etc., shall be recorded with a view to future measures to manage the presence of dioxins and dioxin-like compounds in the materials for animal nutrition.	
		Feed additives belonging to the functional groups of binders and anti-caking	0,5 ng WHO-PCB- TEQ/kg		In the event of exceeding the action limit: Identification of source of contamination. Once	
		Feed additives belonging to the functional group of compounds of trace elements	0,35 ng WHO-PCB- TEQ/kg		source is identified, take appropriate measures, where possible, to reduce or eliminate source of	
		Premixtures	0,35 ng WHO-PCB- TEQ/kg		contamination.	
		Compound feed with the exception of:	0,5 ng WHO-PCB- TEQ/kg			
		- Compound feed for pet animals and fish	2,5 ng WHO-PCB- TEQ/kg		In the event of exceeding the action limit: In many cases it might not be necessary to perform an investigation into the source of contamination as the background level in some areas is close or above the action level. However, in cases where the action level is exceeded, all information, such as sampling period, geographical origin, fish species, etc.,	
					shall be recorded with a view to future measures to manage the presence of dioxins and dioxin-like compounds in the materials for animal nutrition.	
		- Compound feed for fur animals	-			
C13d	Non-dioxin-like PCBs	Feed materials of plant origin		10 μg/kg (ppb)	(*) the maximum level is also applicable to the	
		Feed materials of mineral origin		10 μg/kg (ppb)	feed additives belonging to the functional	

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(sum of PCB 28, PCB 52, PCB
101, PCB 138, PCB 153 and
PCB 180 (ICES - 6))

Feed materials of animal origin:	10 μg/kg (ppb)
- Animal fat, including milk fat and egg fat	10 μg/kg (ppb)
- Other land animal products including milk and milk products and eggs and egg products	10 μg/kg (ppb)
- Fish oil	175 μg/kg (ppb)
- Fish, other aquatic animals and products derived thereof with the exception of fish oil and fish protein, hydrolysed, containing more than 20 % fat ⁵	30 μg/kg (ppb)
- Fish protein, hydrolysed, containing more than 20 % fat	50 μg/kg (ppb)
The feed additives belonging to the functional groups of binders and anticaking agents (*)	10 μg/kg (ppb)
Feed additives belonging to the functional group of compounds of trace elements	10 μg/kg (ppb)
Premixture	10 µg/kg (ppb)
Compound feed with the exception of:	10 μg/kg (ppb)
- compound feed for pet animals and fish	40 μg/kg (ppb)
- compound feed for fur animals	-

groups of substances for the control of radionuclide contamination and substances for reduction of the contamination of feed by mycotoxins which are also belonging to the functional groups of binders and anti-caking agents.

[1]

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

[4] Upper-bound concentrations; upper-bound concentrations are calculated on the assumption that all values of the different congeners below the limit of quantification are equal to the limit of quantification.

[5] Fresh fish and other aquatic animals directly delivered and used without intermediate processing for the production of feed for fur animals are not subject to the maximum levels, while maximum levels of 75 µg/kg product are applicable to fresh fish and 200 µg/kg product are applicable to fish liver used for the direct feeding of pet animals, zoo and circus animals or used as



feed material for the production of pet food. The products or processed animal proteins produced from these animals (fur animals, pet animals, zoo and circus animals) cannot enter the food chain and cannot be fed to farmed animals which are kept, fattened or bred for the production of food.

[6] Fresh fish and other aquatic animals directly delivered and used without intermediate processing for the production of feed for fur animals are not subject to the maximum levels, while maximum levels of 3,5 ng WHO-PCDD/F-TEQ/kg product and 6,5 ng WHO-PCDD/F-PCB-TEQ/kg product are applicable to fresh fish and 20,0 ng WHO-PCDD/F-PCB-TEQ/kg product is applicable to fish liver used for the direct feeding of pet animals, zoo and circus animals or used as feed material for the production of pet food. The products or processed animal proteins produced from these animals (fur animals, pet animals, zoo and circus animals) cannot enter the food chain and cannot be fed to farmed animals which are kept, fattened or bred for the production of food.

[18] Table of TEF (= toxic equivalency factors) for dioxins, furans and dioxin-like PCBs: WHO-TEFs for human risk assessment based on the conclusions of the World Health Organisation (WHO) – International Programme on Chemical Safety (IPCS) expert meeting which was held in Geneva in June 2005 (Martin van den Berg et al., The 2005 World Health Organisation Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin- like Compounds. Toxicological Sciences 93(2), 223–241 (2006))



Congener	TEF value	Congener	TEF value
Dibenzo-p-dioxins (PCDDs)		Dioxin-like PCBs	
2,3,7,8-TCDD	1	non-ortho-PCB's + mono-ortho-PCB's	
1,2,3,7,8-PeCDD	1	Non-ortho-PCBs	
1,2,3,4,7,8-HxCDD	0,1	PCB 77	0,0001
1,2,3,6,7,8-HxCDD	0,1	PCB 81	0,0003
1,2,3,7,8, 9-HxCDD	0,1	PCB 126	0,1
1,2,3,4,6,7,8-HpCDD	0,01	PCB 169	0,03
OCDD	0,0003		
		Mono-ortho-PCBs	
Dibenzofuranes (PCDFs)		PCB 105	0,00003
2,3,7,8-TCDF	0,1	PCB 114	0,00003
1,2,3,7,8-PeCDF	0,03	PCB 118	0,00003
2,3,4,7,8-PeCDF	0,3	PCB 123	0,00003
1,2,3,4,7,8-HxCDF	0,1	PCB 156	0,00003
1,2,3,6,7,8-HxCDF	0,1	PCB 157	0,00003
1,2,3,7,8,9-HxCDF	0,1	PCB 167	0,00003
2,3,4,6,7,8-HxCDF	0,1	PCB 189	0,00003
1,2,3,4,6,7,8-HpCDF	0,01		
1,2,3,4,7,8,9-HpCDF	0,01		
OCDF	0,0003		



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemical: Mycotoxin					
C15	DON (Deoxynivalenol)	Compound feed (on full ration basis) for: - Pigs - Cattle - Calves up to 4 months - Dairy cattle - Poultry Compound feed for lambs, kids and dogs Other compound feeds Feed material (supplied to the livestock farmer for immediate feeding) for (21) - Pigs - Cattle - Calves up to 4 months - Dairy cattle - Poultry Feed materials for other purposes (21) - Cereals and cereal products (22) with the exception of maize by-products	0,8 mg/kg 4 mg/kg 1,6 mg/kg 2,4 mg/kg 3,2 mg/kg 2 mg/kg 5 mg/kg 5 mg/kg 2 mg/kg 4 mg/kg 8 mg/kg	1 mg/kg 5 mg/kg 2 mg/kg 3 mg/kg 4 mg/kg 5 mg/kg 15 mg/kg 6 mg/kg 9 mg/kg 12 mg/kg	- The European Commission has published "Recommendation 2006/576/EC" regarding the guidance values for this mycotoxin. GMP+ International has established other values to comply.
		- Maize by-products	12 mg/kg		

Specific Feed Safety Limits

30 / 79

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Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

- (21) The supplier provides information to the livestock farmer in the event of infringement of the action limit for the level of the undesirable substance and provides advice on processing the product in the daily ration
- (22)The term 'Cereals and cereal products' includes not only the feed materials listed under heading 1 'Cereal grains and products derived thereof' of the list of feed materials referred to in part C of the European Catalogue of feed materials but also other feed materials derived from cereals in particular cereal forages and roughages.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Crop protection age	nts (Pesticides which are not permitted in	the EU) *		
C16	Endosulfan (sum of alfa and bèta-isomers and of	Feed materials and compound feed with the exception of:	-	0,1 mg/kg	
	endosulfan sulphate, expressed as endosulfan)	- cotton seed and products derived from the processing thereof, except crude cotton seed oil	-	0,3 mg/kg	
		- soybean and products derived from the processing thereof, except crude soybean oil	-	0,5 mg/kg	
		- crude vegetable oil	-	1,0 mg/kg	
		- complete feed for fish except for Salmonids	-	0,005 mg/kg	
		- complete feed for <i>Salmonids</i>	-	0,05 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

* Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005





Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Crop protection agent	ts (Pesticides which are not permitte	d in the EU) *		
C17	Endrin (sum of endrin and deltaketo-endrin, expressed as	Feed materials and compound feed with the exception of:	-	0,01 mg/kg	
	endrin)	- fats and oils	_	0,05 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

^{*} Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Salts				
C19	Fluorine ³	Feed materials, with the exception of:	-	150 mg/kg	
		- Feed materials of animal origin except marine crustaceans such as marine krill; calcareous marine shells;	-	500 mg/kg	
		- marine crustaceans such as marine krill	-	3 000 mg/kg	
		- phosphates	-	2 000 mg/kg	
		- calcium carbonate; calcium and magnesium carbonate ¹¹	-	350 mg/kg	
		- magnesium oxide	-	600 mg/kg	
		- calcareous marine algae	-	1 250 mg/kg	
		Vermiculite (E 561)	-	3 000 mg/kg	
		Complementary feed			-
		- containing ≤ 4% phosphorus ⁸	-	500 mg/kg	
		- containing > 4% phosphorus ⁸	-	125 mg/kg per 1%	
				phosphorus ⁸	
		Complete feed, with the exception of:	-	150 mg/kg	
		- complete feed for cattle, sheep and goats			
		- in lactation	-	30 mg/kg	
		- others	-	50 mg/kg	
		- complete feed for pigs	-	100 mg/kg	
		- complete feed for poultry (except chicks) and fish	-	350 mg/kg	
		- complete feed for chicks	_	250 mg/kg	

Specific Feed Safety Limits 34 / 79 © GMP+ International B.V.

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

- [3] The maximum levels refer to an analytical determination of fluorine where the extraction is done for 20 minutes at an ambient temperature with hydrochloric acid 1 N. Equivalent extraction procedures may be used where it can be demonstrated that the extraction procedure used has the same extraction efficiency
- [8] The % of phosphorus is relative to a feed with a moisture content of 12 %.
- [11] Calcium and magnesium carbonate refers to the natural mixture of calcium carbonate and magnesium carbonate as described in the European Catalogue of feed materials.



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Crop protection agent	ts (Pesticides which are not permitte	d in the EU) *		
C20	Heptachlor (sum of heptachlor and heptachlor epoxyd,	Feed materials and compound feed, with the exception of:	-	0,01 mg/kg	
	expressed as heptachlor)	- fats and oils	-	0,2 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

^{*} Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements			
Chemi	Chemical: Crop protection agents (Pesticides which are not permitted in the EU) *							
C21	Hexachlorobenzene (HCB)	Feed materials and compound feed, with the exception of:	-	0,01 mg/kg				
		- fats and oils	-	0,2 mg/kg				

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits

^{*} Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements				
Chemi	Chemical: Crop protection agents (Pesticides which are not permitted in the EU) *								
C22a	Hexachlorocyclohexane (HCH):								
	- Alfa-isomer	Feed materials and compound feed, with the	-	0,02 mg/kg					
		exception of:							
		- fats and oils	-	0,2 mg/kg					

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 38 / 79

^{*} Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements			
Chemi	Chemical: Crop protection agents (Pesticides which are not permitted in the EU) *							
C22b	Hexachlorocyclohexane (HCH):							
	- Beta-isomer	Compound feeds with the exception of:	-	0,01 mg/kg				
		- compound feed for dairy cattle	-	0,005 mg/kg				
		Feed materials, with the exception of:	-	0,01 mg/kg				
		- fats and oils	-	0,1 mg/kg				

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits

^{*} Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements			
Chemi	Chemical: Crop protection agents (Pesticides which are not permitted in the EU) *							
C22c	Hexachlorocyclohexane (HCH):							
	- Gamma-isomer (lindane)	Feed materials and compound feed, with the	-	0,2 mg/kg				
		exception of:						
		- fats and oils	-	2,0 mg/kg				

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits

^{*} Pesticides which are not included in Directive 2002/32/EC, Annex I, Section IV should comply to Regulation (EC) no. 396/2005



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Salts				
C23	Potassium	- Feed materials for delivery to livestock farms, and - Wet mixes for delivery to livestock farmers	60 g/kg (dry matter)	-	If the action limit is exceeded then a warning or processing advice must be <i>demonstrably communicated</i> to the customer. Supply of additional water to the animals is also important to avoid health problems. More recommendations in the event of excess of the action limit can be found in Support document: \$5.9.72 Salts in rations with wet feed for fattening pigs and sows

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 41 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Toxic substances				
C24	Mineral oil hydrocarbons (C10-C40)	Animal fat, with the exception of: - crude fish oil	-	400 mg/kg (on product basic) 3 000 mg/kg (on product basic)	
		Vegetable oil and fat (with the exception of sunflower oil) - sunflower oil	-	400 mg/kg (on product basic) 1 000 mg/kg (on product basic)	
		Vegetable fatty acids distillates/acid oils/fatty acids from splitting/stearin fraction and olein fraction (with the exception of Sunflower fatty acid distillates/acid oils/fatty acids from splitting)	-	3 000 mg/kg (on product basic)	
		- sunflower fatty acid distillates/acid oils/fatty acids from splitting	-	1 000 mg/kg (on product basic)	
		Palm oil	-	25 mg/kg calculated as diesel oil	This norm applies if the hydrocarbons (calculated as diesel oil) are determined via the GC-MS method. If use is made of the GC FID method, then the norm for vegetable oil applies

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 42 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Heavy metals	S			
C26	Mercury ¹⁶	Feed materials, with the exception of:	-	0,1 mg/kg	
		- fish, other aquatic animals and products derived thereof intended for the production of compound feed for food producing animals;	-	0,5 mg/kg	
		- fish, other aquatic animals and products derived thereof, intended for the production of compound feed for dogs, cats, ornamental fish and fur animals;	-	1,0 mg/kg (*)	
		- fish, other aquatic animals and products derived thereof as canned wet feed material for direct feeding of dogs and cats;	-	0,3 mg/kg	
		- calcium carbonate; calcium and magnesium carbonate ¹¹ .	-	0,3 mg/kg	
		Compound feed, with the exception of:	-	0,1 mg/kg	
		- mineral feed;	-	0,2 mg/kg	
		- compound feed for fish;	_	0,2 mg/kg	
		- compound feed for dogs, cats, ornamental fish and fur animals.	-	0,3 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

[11] Calcium and magnesium carbonate refers to the natural mixture of calcium carbonate and magnesium carbonate as described in European Catalogue of feed materials.

[16] The maximum levels refer to the total level of mercury.

(*): The maximum level is applicable on wet weight basis

Specific Feed Safety Limits
43 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Chemi	cal: Heavy metals				
C27	Lead *	Feed materials, with the exception of: - forage ⁹ ; - phosphates; calcareous marine algae and	- - -	10 mg/kg 30 mg/kg 15 mg/kg	
		calcareous marine shells; - calcium carbonate; calcium and magnesium carbonate ¹¹ ;	-	20 mg/kg	
		- yeast.	-	5 mg/kg	
		Feed additives belonging to the functional group of compounds of trace elements, with the exception of:	-	100 mg/kg	
		- zinc oxide;	-	400 mg/kg	
		- manganous oxide, ferrous carbonate, cupric carbonate, copper (I) oxide.	-	200 mg/kg	
		Feed additives belonging to the functional group of binders and anti-caking agents, with the exception of:	-	30 mg/kg	
		- clinoptilolite of volcanic origin; natrolite- phonolite.	-	60 mg/kg	
		Premixtures ²	-	200 mg/kg	
		Complementary feed, with the exception of:	-	10 mg/kg	
		- mineral feed;	-	15 mg/kg	
		 long-term supply formulations of feed for particular nutritional purposes with a concentration of trace elements higher than 100 times the established maximum content in complete feed. 	-	60 mg/kg	
		Complete feed	-	5 mg/kg	7

Specific Feed Safety Limits 44 / 79



Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

[2]The maximum level established for premixtures takes into account the additives with the highest level of lead and cadmium and not the sensitivity of the different animal species to lead and cadmium. As provided in Article 16 of Regulation (EC) No 1831/2003 of the European Parliament and of the Council of 22 September 2003 on additives for use in animal nutrition, in order to protect animal and public health, it is the responsibility of the producer of premixtures to ensure that, in addition to compliance with the maximum levels for premixtures, the instructions for use on the premixture are in accordance with the maximum levels for complementary and complete feed.

[9] Green fodder includes products which are intended for feeding to animals such as hay, silage, fresh grass, etc.

[11] Calcium and magnesium carbonate refers to the natural mixture of calcium carbonate and magnesium carbonate as described in the European Catalogue of feed materials.

* for the determination of lead in kaolinitic clay and in feed containing kaolinitic clay, the maximum level refers to an analytical determination of lead, whereby extraction is performed in nitric acid (5 % w/w) for 30 minutes at boiling temperature. Equivalent extraction procedures can be applied for which it can be demonstrated that the used extraction procedure has an equal extraction efficiency.

Specific Feed Safety Limits 45 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (1)	Supplementary requirements
Chemi	cal: Mycotoxin				
C28	Ergot (Claviceps purpurea)	Feed materials and compound feed	-	1 000 mg/kg	
		containing unground cereals			

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits



Code	Contaminant	Product	Action limit (¹)	Rejection limit (1)	Supplementary requirements
Chemi	cal: Salts				
C29	Sodium	Feed materials for delivery to livestock farms, and Wet mixes for delivery to livestock farmers.	8 g/kg (dry matter)	-	If the action limit is exceeded then a warning or processing advice must be demonstrably communicated to the customer. Supply of additional water to the animals is also important to avoid health problems. More recommendations in the event of excess of the action limit can be found in Support document: \$\frac{9}{2}\$ 2 Salts in rations with wet feed for fattening pigs and sows

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 47 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (1)	Supplementary requirements
Chemi	cal: Heavy metals				
C30	Nickel	Oils and fats from vegetable or animal origin	20 mg / kg (on a fat basis)	50 mg / kg (on a fat basis)	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits



Code	Contaminant	Product	Action limit (¹)	Rejection limit (¹)	Supplementary requirements
Chemi	cal: Other undesirabl	e substances and products			
C31	Nitrites	Feed materials, with the exception of:	-	15 mg/kg (expressed in sodium nitrite)	
		- fish meal;	-	30 mg/kg (expressed in sodium nitrite)	
		- silage;	-	-	
		- products and by-products from sugar beet and sugarcane and from starch production and alcoholic drink production.	-	-	
		Complete feed, with the exception of:	-	15 mg/kg (expressed in sodium nitrite)	
		- complete feed for dogs and cats with a moisture content exceeding 20 %.	-	-	

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 49 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (¹)	Supplementary requirements
Chemi	cal: Harmful Botanical im	purities			
C32	Weed seeds and unground	Feed material and compound feed	-	3 000 mg/kg	
	and uncrushed fruits				
	containing alkaloids,				
	glucosides or other toxic				
	substances separately or in				
	combination including				

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 50 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (¹)	Supplementary requirements
Chemi	cal: Other undesirable su	bstances and products			
C33	Insoluble impurities	Rendered fats from ruminants	-	0,15%	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits

51 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (¹)	Supplementary requirements
Chemi	cal: Mycotoxin				
C34	Ochratoxin A	Compound feed on full ration basis for: - sows and consumption pigs and piglets - poultry	0,04 mg/kg 0,16 mg/kg	0,05 mg/kg 0,2 mg/kg	- The European Commission has published recommendation 2006/576/EC regarding the guidance values for this mycotoxin. GMP+ International has established other
		Feed material (supplied to the livestock farmer for immediate feeding) for (21)	0,01 mg/kg		values to comply.
		- Sows and pigs and piglets - Poultry	0,05 mg/kg 0,2 mg/kg	0.15 mg/kg 0,6 mg/kg	
		Feed materials for other purposes - Cereals and cereal products (21, 22)	0,25 mg/kg		_

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

(21) The supplier provides information to the livestock farmer in the event of infringement of the action limit for the level of the undesirable substance and provides advice on processing the product in the days ration

(22)The term 'Cereals and cereal products' includes not only the feed materials listed under heading 1 'Cereal grains and products derived thereof' of the list of feed materials referred to in part C of the European Catalogue of feed materials but also other feed materials derived from cereals in particular cereal forages and roughages.

Specific Feed Safety Limits 52 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (¹)	Supplementary requirements
Chemi	cal: Toxic substances				
C35a	Polycyclic Aromatic Hydrocarbons (PAH4)	Oils and fats excluding palm(kernel)-, coconutoil and products derived thereof Palm(kernel)-, coconutoil and and products derived thereof	160 μg/kg (on fat basis) 320 μg/kg (on fat basis)	200 μg/kg (on fat basis) 400 μg/kg (on fat basis)	PAH4=sum of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene and chrysene See the Support documents: - S9.73 Elaboration of limit values for Polycyclic Aromatic Hydrocarbons in oil for feed based on the PAH4 methodology - S9.74 Transfer of polycyclic Aromatic Hydrocarbons in oil for feed to edible food commodities

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 53 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (¹)	Supplementary requirements
Chemi	cal: Antinutritional factor	rs: Glucosides			
C38	Seeds and husks from Ricinus communis L., Croton tiglium L. and Abrus precatorius L. as well as their processed derivatives (in so far determinable by analytical microscopy), separately or in combination	Feed materials and compound feed.	-	10 mg/kg ⁽²³⁾	

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

(23) Includes also seed husk fragments.

Specific Feed Safety Limits 54 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (1)	Supplementary requirements
Chemi	cal: Salts				
C39	Sulphate	- Feed materials for delivery to livestock farms, and - Wet mixes for delivery to livestock farmers which are preserved with sulphuric acid and not for products which by nature are rich in sulphur.	8 g/kg (dry matter)		If the action limit is exceeded then a warning or processing advice must be demonstrably communicated to the customer. Supply of additional water to the animals is also important to avoid health problems. More recommendations in the event of excess of the action limit can be found in Support document: S9.72 Salts in rations with wet feed for fattening pigs and sows

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 55 / 79



Code	Contaminant	Product	Action limit (1)	Rejection limit (1)	Supplementary requirements
Chemi	cal: Antinutritional factor	rs: Alkaloids			
C40	Theobromine	Complete feed, with the exception of:	-	300 mg/kg	
		- complete feed for pigs	-	200 mg/kg	
		- complete feed for dogs, rabbits, horses and fur animals	_	50 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 56 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (1)	Supplementary requirements
Chemi	cal: Antinutritional factor	rs: Glucosides			
C41	Vinyl thiooxazolidone (5- vinyloxazolidine-2-thione)	Complete feed for poultry with the exception of:	-	1 000 mg/kg	
		- complete feed for laying hens	=	500 mg/kg	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 57 / 7



Code	Contaminant	Product	Action limit (¹)	Rejection limit (1)	Supplementary requirements
Chemi	cal: Antinutritional fa	actors: Glucosides			
C42	Volatile mustard oil	Feed materials, with the exception of:	-	100 mg/kg (calculated as allylisothiocyanate)	
		- Camelina seed and products derived	-	4 000 mg/kg (calculated as	
		thereof (*), products derived from mustard		allylisothiocyanate)	
		seed (*), rape seed and products derived			
		thereof.			
		Complete feed, with the exception of:	-	150 mg/kg (calculated as allylisothiocyanate)	
		- Complete feeds for cattle (except calves),	-	1 000 mg/kg (calculated as	
		sheep (except lambs) and goats (except kids)		allylisothiocyanate)	
		- Complete feeds for pigs (except of piglets)	-	500 mg/kg (calculated as	
		and poultry		allylisothiocyanate)	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits

58 / 79

^{*:} Upon request of the competent authorities, the responsible operator must perform an analysis to demonstrate that the content of total glucosinolates is lower than 30 mmol/kg. The method of analysis of reference is EN-ISO 9167-1:1995



Code	Contaminant	Product	Action limit (1)	Rejection limit (¹)	Supplementary requirements				
Chemi	Chemical: Antinutritional factors: Other								
C43	Free gossypol	Feed materials, with the exception of:	-	20 mg/kg					
		- cotton seed	-	6 000 mg/kg					
		- cotton seed cake and cotton seed	-	1 200 mg/kg					
		meal			_				
		Complete feed, with the exception of:	-	20 mg/kg					
		- complete feed for cattle (except	-	500 mg/kg					
		calves)							
		- complete feed for sheep (except	-	300 mg/kg					
		lambs) and goats (except kids),							
		- complete feed for poultry (except	-	100 mg/kg					
		laying hens) and calves							
		- complete feed for rabbits, lambs, kids	-	60 mg/kg					
		and pigs (except piglets)							

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 59 / 79



Code	Contaminant	Product	Action limit (1)	Rejection limit (¹)	Supplementary requirements
Chemi	cal: Mycotoxin				
C44	Zearalenon	Compound feed on full ration basis for: - sows and consumption pigs - young pigs - young cattle and dairy cattle Compound feed for: - puppies, kittens, dogs and cats for reproduction - adult dogs and cats other than for reproduction	0,2 mg/kg 0,08 mg/kg 0,4 mg/kg 0,1 mg/kg 0,2 mg/kg	0,25 mg/kg 0,1 mg/kg 0,5 mg/kg -	The European Commission has published "Recommendation 2006/576/EC" regarding the guidance values for this mycotoxin. GMP+ International has established other values to comply.
		- sheep (including lamb) and goats (including kids) Feed material (supplied to the livestock farmer for immediate feeding) for (21) - sows and pigs - young pigs - young cattle and dairy cattle	0,5 mg/kg 0,25 mg/kg 0,1 mg/kg 0,5 mg/kg	0,75mg/kg 0,3 mg/kg 1,5 mg/kg	
		Feed materials for other purposes: - Cereals and cereal products (21, 22) with the exception of maize by-products - Maize by-products	2 mg/kg 3 mg/kg	-	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently. Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

60 / 79 Specific Feed Safety Limits

⁽²¹⁾ The supplier provides information to the livestock farmer in the event of infringement of the action limit for the level of the undesirable substance and provides advice on processing the product in the days ration

⁽²²⁾ The term 'Cereals and cereal products' includes not only the feed materials listed under heading 1 'Cereal grains and products derived thereof' of the list of feed materials referred to in part C of the European Catalogue of feed materials but also other feed materials derived from cereals in particular cereal forages and roughages.



Code	Contaminant	Product	Action limit (¹)	Rejection limit (1)	Supplementary requirements
Chemi	cal: Other undesirable su	bstances and products			
C46	Melamine (24)	Feed, with the exception of:		2,5 mg/kg	EFSA recommendation: LC-MS/MS (liquid chromatography coupled to mass
		- canned pet food,		2,5 mg/kg *	spectrometry
		- the following feed additives:			
		- guanidino acetic acid (GAA);		20 mg/kg	
		- urea;		-	
		- biuret.		_	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

(24) The maximum level refers to melamine only. The inclusion of the structurally related compounds cyanuric acid, ammeline and ammelide in the maximum level will be considered at a later stage.

* The maximum level is applicable to canned pet food as sold.

Specific Feed Safety Limits

61 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (¹)	Supplementary requirements
Chemic	cal: Pesticides (Crop prote	ection agents)			
C62	Pesticides	Animal feed		The statutory limits of EU Regulation 396/2005 are valid.	
				See Support document S9.14 Managing pesticides residue in feed	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 62 / 79



Code	Contaminant	Product	Action limit (1)	Rejection limit (¹)	Supplementary requirements			
Chemi	hemical: Mycotoxin							
C109	Fumonisin B1 + B2	Feed materials - maize and maize products *	60 mg/kg		Particular attention has to be paid to cereals and cereals products fed directly to the animals that their use in a daily ration should not lead to the animal being exposed to a higher level of these mycotoxins than the corresponding levels of exposure where only the complete feedingstuffs are used in a daily ration.			
		Complementary and complete feedingstuffs						
		for:						
		- pigs, horses (Equidae), rabbits and pet	5 mg/kg					
		animals						
		- fish	10 mg/kg					
		- poultry, calves (< 4 months), lambs and kids	20 mg/kg					
		- adult ruminants (> 4 months) and mink	50 mg/kg					

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

(*) The term 'Maize and maize products' includes not only the feed materials derived from maize listed under heading 1 'Cereal grains, their products and by-products' of the non-exclusive list of main feed materials referred to in the Annex, part B of Directive 96/25/EC but also other feed materials derived from maize in particular maize forages and roughages. (note: Directive 96/25/EC is replaced by the Catalogue of feed materials)

Specific Feed Safety Limits 63 / 79



Code	Contaminant	Product	Action limit (1)	Rejection limit (1)	Supplementary requirements				
Chemi	Chemical: Mycotoxin								
C113	T-2 and HT-2 toxin, Sum of	Unprocessed cereals: - barley (including malting barley) and maize	0,2 mg/kg (on product basis) (*)	-	Unprocessed cereals are cereals which have not undergone any physical or thermal treatment other than drying, cleaning and sorting.				
		- oats (with husk)	1 mg/kg (on product basis) (*)	-					
		- wheat, rye and other cereals	0,1 mg/kg (on product basis) (*)	-					
		Cereal products for feed and compound feed							
		- oat milling products (husks)	2 mg/kg ^(*1)	-					
		- other cereal products	0,5 mg/kg ^(*1)	-					
		- compound feed, with the exception of feed for cats	0,25 mg/kg ^(*1)	-					
		Compound feed for cats	0,05 mg/kg ^(*1)	-					

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

(*) The levels referred to in this Annex are indicative levels above which, certainly in the case of repetitive findings, investigations should be performed on the factors leading to the presence of T-2 and HT-2 toxin or on the effects of feed and food processing. The indicative levels are based on the occurrence data available in the EFSA database as presented in the EFSA opinion. The indicative levels are not feed and food safety levels.

Specific Feed Safety Limits

64 / 79



Code	Contaminant	Product	Action limit (1)	Rejection limit (1)	Supplementary requirements			
Chemi	Chemical: Other undesirable substances and products							
C134	Polyethylene	Fat and oil products (feed materials)	0,25 g/kg (on fat basis)	0,5 g/kg (on fat basis)	See TS 1.4 <u>Forbidden Products and Fuels</u>			

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 65 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Fysical	: Harmful Botanical impu	ırities			
F5	Unhusked beech mast - Fagus	Feed materials and compound feed	-	Seeds and fruits of the	
	sylvatica L.			plant species listed opposite as well as their	
				processed derivatives may	
				only be present in feed in	
				trace amounts not	
				quantitatively	
				determinable	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 66 / 7



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Fysical	: Harmful Botanical impu	rities			
F6	Chinese mustard – Brassica	Feed materials and compound feed	-	Seeds may only be	
	juncea (L.) Czern. and Coss.			present in feed in trace	
	ssp. juncea var. lutea Batalin			amounts not	
				quantitatively	
				determinable	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Fysical	: Harmful Botanical impu	ırities			
F7	Ethiopian mustard – Brassica carinata A. Braun	Feed materials and compound feed	-	Seeds may only be	
	Carinata A. Braun			present in feed in trace amounts not	
				quantitatively determinable	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Fysical	: Harmful Botanical impu	rities			
F8	Indian mustard - Brassica	Feed materials and compound feed	-	Seeds may only be	
	juncea (L.) Czern. and Coss.			present in feed in trace	
	ssp. integrifolia (West.) Thell.			amounts not	
				quantitatively	
				determinable	

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 69 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements			
Fysical	Fysical: Harmful Botanical impurities							
C10	Crotalaria spp.	Feed materials and compound feed	-	100 mg/kg				

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 70 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Fysical	: Harmful Botanical impu	urities			
F10	Purghera - Jatropha curcas L.	Feed materials and compound feed	-	Seeds and fruits of the	
				plant species listed	
				opposite as well as their	
				processed derivatives	
				may only be present in	
				feed in trace amounts	
				not quantitatively	
				determinable	

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

71 / 79 Specific Feed Safety Limits



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements
Fyscial	: Harmful Botanical impu	ırities			
F12	Sareptian mustard - Brassica juncea (L.) Czern. and Coss. ssp. juncea	Feed materials and compound feed	-	Seeds may only be present in feed in trace amounts not quantitatively determinable	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 72 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements			
Fysical	Fysical: Harmful Botanical impurities							
F13	Seeds from Ambrosia spp.	Feed materials (*), with the exception of:	-	50 mg/kg				
		- Millet (grains of <i>Panicum miliaceum</i> L.)	-	200 mg/kg				
		and sorghum (grains of Sorghum bicolor (L)						
		Moench s.l.) not directly fed to animals (*)						
		Compound feed containing unground grains	-	50 mg/kg				
		and seeds						

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

(*): In case unequivocal evidence is provided that the grains and seeds are intended for milling or crushing, there is no need to perform a cleaning of the grains and seeds containing concompliant levels of seeds of Ambrosia spp. before milling or crushing on the condition that: —the consignment is transported as a whole to the milling or crushing plant, and — the milling or crushing plant is informed in advance of the presence of high level of Ambrosia spp. seeds in order take additional prevention measures to avoid dissemination into the environment, and — solid evidence is provided that prevention measures are taken to avoid dissemination of Ambrosia spp. seeds into the environment during transport to the crushing or milling plant, and — the competent authority agrees to the transport, after having ensured that the abovementioned conditions are fulfilled. In case these conditions are not fulfilled, the consignment must be cleaned before any transport into the EU and the screenings must be appropriately destroyed.'

Specific Feed Safety Limits 73 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements		
Fysical: Harmful Botanical impurities							
F14	Black mustard – Brassica nigra (L.) Koch	Feed materials and compound feed	-	Seeds may only be present in feed in trace amounts not quantitatively determinable			

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 74 / 79



Code	Contaminant	Product	Action limit ¹	Rejection limit ¹	Supplementary requirements	
Fysical: Other undesirable substances and products						
F26	Radioactivity Sum of Cs-134 and Cs-137	Feed intended for: - cattle and horses		100 (Bq/kg)	- Special conditions governing the import of feed originating in or consigned from Japan following the accident at the Fukushima nuclear power station.	
		- pig - poultry - fish (*)		80 (Bq/kg) 160 (Bq/kg) 40 (Bq/kg)	- In order to ensure consistency with maximum levels currently applied in Japan, these values replace on a provisional basis the values laid down in Regulation (Euratom) 2016/52.	

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 75 / 79

^{*} With the exemption of feed for ornamental fish.



Code	Contaminant	Product	Action limit (1)	Rejection limit (1)	Supplementary requirements		
Physical: Bodies foreign to the product							
F30	Packaging material	Feed materials for delivery to livestock farms, and Wet mixes for delivery to livestock farmers	-	1.5 g/kg (dry matter basis)	Packaging materials are fibres of paper and board, fragments of plastic, aluminium foil and metal, plastic clips, metal wires, etc. Via manual separation and weighing See TS 1.4 Forbidden Products and Fuels		
					This norm was included subject to the outcome of the discussion taking place in the European Commission.		

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 76 / 79



Code	Contaminant	Product	Action limit (¹)	Rejection limit (¹)	Supplementary requirements			
Fysical	Fysical: Harmful Botanical impurities							
C32a	- Datura sp.	Feed material and compound feed	-	1 000 mg/kg				

Action limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then an investigation into the cause should be undertaken and corrective measures should be taken to remove or control that cause. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Rejection limit: A feasible limit agreed in consultation with the sector, supplier or customer. If this limit is exceeded then the product is not suitable for use as feed material or animal feed. Maximum levels in mg/kg (ppm) of the feed materials or compound feeds, derived to a moisture content of 12% unless mentioned differently.

Specific Feed Safety Limits 77 / 79



Feed Support Products

That was a lot of information to digest and one might ask, what is the next step? Luckily we can offer support for the GMP+ Community when doing this. We provide support by means of various tools and guidances but as each company has a shared responsibility to feed safety, and therefor tailor-made solutions cannot be offered. However, we do help by explaining requirements and provide background information about the requirements.

We have developed various supporting materials for the GMP+ Community. These include various tools, ranging from Frequently Asked Questions (FAQ) lists to webinars and events.

Feed Support Products (FSP)

Feed Support Products (FSP) provides valuable and up-to-date information about potentially high-risk feed. The products vary from flow charts of production processes including the risks (Risk Assessments) and studies on undesirable substances (fact sheets).

Where to find more about the GMP+ International Feed Support Products

Fact sheets

More information: https://www.gmpplus.org/en/services/feed-support-products/fact-sheets/

Review fact sheets: GMP+ Portal https://portal.gmpplus.org/en-US/tools/fsp/



At GMP+ International, we believe everybody, no matter who they are or where they live, should have access to safe food.

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