

SCHEDULE 5

Regulation 9(9)

Action thresholds triggering investigations: dioxins and PCBs

Textual Amendments

F1 Schs. 3-5 inserted (9.2.2023) by The Food and Feed (Miscellaneous Amendments) (Scotland) Regulations 2022 (S.S.I. 2022/373), reg. 1(1), **sch. 1 para. 1**

Modifications etc. (not altering text)

C1 Sch. 5 applied in part (with modifications) (1.10.2023) by The Windsor Framework (Retail Movement Scheme: Public Health, Marketing and Organic Product Standards and Miscellaneous Provisions) Regulations 2023 (S.I. 2023/959), regs. 1(2), 4(b), **Sch. 2** (with regs. 7, 8)

Table 1: DIOXINS AND PCBs

<i>Undesirable substances</i>	<i>Products intended for animal feed</i>	<i>Action threshold in ng WHO-PCDD/F TEQ/kg (ppt)⁽²⁾ relative to a feedingstuff with a moisture content of 12%</i>	<i>Comments and additional information (e.g. nature of investigations to be performed)</i>
1. Dioxins (sum of polychlorinated dibenzo- <i>para</i> -dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs) expressed in World Health Organisation (WHO) toxic equivalents, using the WHO-TEFs (toxic equivalency factors, 2005) ⁽¹⁾)	Feed materials of plant origin	0.5	(3)
	with the exception of: — vegetable oils and their by-products.	0.5	(3)
	Feed materials of mineral origin.	0.5	(3)
	Feed materials of animal origin: — Animal fat, including milk fat and egg fat,	0.75	(3)
	— Other land animal products including	0.5	(3)

Changes to legislation: There are currently no known outstanding effects for the The Animal Feed (Scotland) Regulations 2010, SCHEDULE 5. (See end of Document for details)

Undesirable substances	Products intended for animal feed	Action threshold in ng WHO-PCDD/F TEQ/kg (ppt)⁽²⁾ relative to a feedingstuff with a moisture content of 12%	Comments and additional information (e.g. nature of investigations to be performed)
	milk and milk products and eggs and egg products, — Fish oil, — Fish, other aquatic animals and products derived from them, with the exception of fish oil, hydrolysed fish protein containing more than 20% fat and crustacea meal, — Hydrolysed fish protein containing more than 20% fat, crustacea meal. Feed additives belonging to the functional groups of binders and anti-caking agents. Feed additives belonging to the functional group of compounds of trace elements. Premixtures. Compound feed with the exception of: — compound feed for pet animals and fish, — compound feed for fur animals.	4.0 0.75 1.25 0.5 0.5 0.5 0.5 1.25 —	(4) (4) (4) (3) (3) (3) (3) (4)
2. Dioxin-like PCBs (sum of polychlorinated biphenyls (PCBs) expressed in World Health Organisation (WHO) toxic	Feed materials of plant origin	0.35	(3)

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<i>Undesirable substances</i>	<i>Products intended for animal feed</i>	<i>Action threshold in ng WHO-PCDD/F TEQ/kg (ppt)⁽²⁾ relative to a feedingstuff with a moisture content of 12%</i>	<i>Comments and additional information (e.g. nature of investigations to be performed)</i>
equivalents, using the WHO-TEFs (toxic equivalency factors, 2005) ⁽¹⁾	<p>with the exception of:</p> <ul style="list-style-type: none"> — vegetable oils and their by-products. Feed materials of mineral origin. Feed materials of animal origin: <ul style="list-style-type: none"> — Animal fat, including milk fat and egg fat, — Other land animal products including milk and milk products and eggs and egg products, — Fish oil, — Fish, other aquatic animals and products derived from them, with the exception of fish oil and fish protein, hydrolysed, containing more than 20% fat,⁽³⁾ — Fish protein, hydrolysed, containing more than 20% fat. Feed additives belonging to the functional groups of binders and anti-caking agents. Feed additives belonging to the functional group of 	<p>0.5</p> <p>0.35</p> <p>0.75</p> <p>0.35</p> <p>11.0</p> <p>2.0</p> <p>5.0</p> <p>0.5</p> <p>0.35</p>	<p>(3)</p> <p>(3)</p> <p>(3)</p> <p>(3)</p> <p>(4)</p> <p>(4)</p> <p>(4)</p> <p>(3)</p> <p>(3)</p>

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Undesirable substances	Products intended for animal feed	Action threshold in ng WHO-PCDD/F TEQ/kg (ppt)⁽²⁾ relative to a feedingstuff with a moisture content of 12%	Comments and additional information (e.g. nature of investigations to be performed)
	compounds of trace elements.		
	Premixtures.	0.35	(3)
	Compound feed	0.5	(3)
	with the exception of:		
	— compound feed for pet animals and fish, ⁽⁴⁾	2.5	(4)
	— compound feed for fur animals.	—	

- (1) Table 2: 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)).
- (2) 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.
- (3) Identification of source of contamination. Once source is identified, take appropriate measures, where possible, to reduce or eliminate source of contamination.
- (4) 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 to 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 these materials for animal nutrition.

Table 2: Table of TEF (toxic equivalency factors) for dioxins, furans and dioxin-like PCBs

Congener	TEF value
Dibenzo-<i>para</i>-dioxins ('PCDDs') and Dibenzo-<i>para</i>-furans (PCDFs)	
2,3,7,8-TCDD	1
1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-HxCDD	0.1
1,2,3,4,6,7,8-HpCDD	0.01
OCDD	0.0003
2,3,7,8-TCDF	0.1
1,2,3,7,8-PeCDF	0.03
2,3,4,7,8-PeCDF	0.3

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Congener	TEF value
1,2,3,4,7,8-HxCDF	0.1
1,2,3,6,7,8-HxCDF	0.1
1,2,3,7,8,9-HxCDF	0.1
2,3,4,6,7,8-HxCDF	0.1
1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-HpCDF	0.01
OCDF	0.0003
‘Dioxin-like’ PCBs: Non-ortho PCBs + Mono-ortho PCBs	
Non-ortho PCBs	
PCB 77	0.0001
PCB 81	0.0003
PCB 126	0.1
PCB 169	0.03
Mono-ortho PCBs	
PCB 105	0.00003
PCB 114	0.00003
PCB 118	0.00003
PCB 123	0.00003
PCB 156	0.00003
PCB 157	0.00003
PCB 167	0.00003
PCB 189	0.00003
Abbreviations used: ‘T’ = tetra; ‘Pe’ = penta; ‘Hx’ = hexa; ‘Hp’ = hepta; ‘O’ = octa; ‘CDD’ = chlorodibenzodioxin; ‘CDF’ = chlorodibenzofuran; ‘CB’ = chlorobiphenyl.]	

Changes to legislation:

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