



Contaminants standard

Product – Refined Vegetable Oils and Fats for *Personal Care Application*
(without addition of food additives)

AAK

AAK is fully committed to placing on the market high quality, nutritious, and safe products that meet all requirements as denoted by regulatory requirements in all countries where we operate and customers' promises.

AAK's food safety management system is based upon risk analysis of the entire supply chain. It covers the selection of the suppliers, prerequisites programs, HACCP plans and risk-based food safety monitoring programs for raw materials, additives, and final products.

A supplementary verification program is put in place to check the effectiveness of the local food safety management systems. Under this program, samples are taken with a certain frequency and are analysed for potential contaminants in accredited laboratories. The results are collected and reviewed regularly by a team of experts with the goal to validate the maximum limits as defined in this standard.

This document states the maximum residual levels (MRLs) for undesirable substances (contaminants) that might be quantified in fully refined vegetable oils and fats which are delivered from AAK sites* for personal care applications.

AAK's Quality and Food Safety Department continues to monitor regularly the scientific and regulatory developments which includes newly emerging hazards through relevant Manufacturer Associations.

Metals

Hazard	Product group	MRL (mg/kg)	Reference	Method
Arsenic (As)	Vegetable oils and fats	0.1	2	DIN EN 15763, mod.
Copper (Cu)	Vegetable oils and fats	0.05	3	DIN EN 15763, mod.
Iron (Fe)	Vegetable oils and fats	0.5	3	DIN EN 15763, mod.
Lead (Pb)	Vegetable oils and fats	0.1	1	DIN EN 15763, mod.
Nickel (Ni)	Vegetable oils and fats	0.2	3	DIN EN 15763, mod.
Cadmium (Cd)	Vegetable oils and fats	0.05	4	DIN EN 15763, mod.
Mercury (Hg)	Vegetable oils and fats	0.02	7	DIN EN 15763, mod.

Mineral oil (MOSH & MOAH)

Hazard	Product group	MRL (mg/kg)	Reference	Method
Mineral oils – sum MOSH/MOAH	Vegetable oils and fats	50	4	ISO 20122

Glycidyl Fatty acid esters (GE)

Hazard	Product group	MRL (µg/kg)	Reference	Method
Glycidyl fatty acid esters, expressed as glycidol	Vegetable oils and fats	1000	1	ISO 18363-2

Dioxins and dioxin-like PCBs

Hazard	Product group	MRL (pg/g)	Reference	Method
Sum of dioxins (WHO-PCDD/F-TEQ)	Vegetable oils and fats	0.75	1	Calculated as WHO-TEQ, 2005, EU 2017/771
Sum of dioxins, and dioxin-like PCB's (WHO-PCDD/F-PCB-TEQ)	Vegetable oils and fats	1.25	1	Calculated as WHO-TEQ, 2005, EU 2017/771

Non-dioxin-like (NDL) PCBs

Hazard	Product group	MRL (ng/g)	Reference	Method
Sum of PCB28, PCB52, PCB101, PCB138, PCB153, PCB180	Vegetable oils and fats	40	1	Calculated as WHO-TEQ, 2005, EU 2017/771

Microorganisms (General)

Indicator organism	Product group	MRL (cfu/g)	Reference	Method
Total plate count	Vegetable oils and fats	100	4	DIN EN ISO 4833-1
Yeast	Vegetable oils and fats	10	3	ISO 21527-2
Mould	Vegetable oils and fats	10	3	ISO 21527-2
Enterobacteriaceae	Vegetable oils and fats	10	3	DIN EN ISO 21528-2

Microorganisms (Pathogenic)

Indicator organism	Product group	MRL	Reference	Method
Salmonella	Vegetable oils and fats	Absent in 25 g	3	DIN EN ISO 6579-1
E. coli	Vegetable oils and fats	Absent in 1 g	4	DIN EN ISO 16649-3

Polycyclic Aromatic Hydrocarbons (PAHs)

Hazard	Product group	MRL (µg/kg)	Reference	Method
Benzo(a)pyrene (BaP)	Vegetable oils and fats	2.0	1	Internal method external lab, GC-MS
Benzo(a)pyrene (BaP)	Cocoa beans (incl. cocoa butter)	5.0	1	Internal method external lab, GC-MS
Sum of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene & chrysene (PAH 4)	Coconut oil	20	1	Internal method external lab, GC-MS
Sum of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene & chrysene (PAH 4)	Vegetable oils and fats	10	1	Internal method external lab, GC-MS
Sum of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene & chrysene (PAH 4)	Cocoa beans (incl. cocoa butter)	30	1	Internal method external lab, GC-MS

Radio activity

Hazard	Product group	MRL (Bq/kg)	Reference	Method
Cs-137	Vegetable oils and fats	600	5	Internal method external lab, gamma spectrometry

Solvents

Hazard	Product group	MRL (mg/kg)	Reference	Method
Acetone	Vegetable oils and fats	1	4	HS-GC-FIC
Hexane	Vegetable oils and fats	1	6	HS-GC-FIC
Methanol	All food	10	6	HS-GC-FIC

Pesticides

As defined with the EC Regulation No. 396/2005 (reference 7), including subsequent amendments, the Maximum Residue Limits (MRLs) for oils and fats should be derived from the European MRLs for raw agricultural products.

European MRLs for raw agricultural products are available in the [EU MRL database](#).

The list of pesticides screened by AAK is based on risk assessment and considering the experience and best knowledge of the industry. The screening is done in external accredited laboratories using analytical methods with LOQ < 0.01 ppm per pesticide, for some pesticides the LOQ is 0.02 - 0.05 ppm.

The pesticides have been mapped within 'AAK pesticide database' to determine their solubilities. Hence, when processing oils/fats, concentration or dilution factors shall be considered upon deriving the levels of pesticides traces before/after refining as is the industry standard.

Global Operations, Quality & Food Safety

Authorised & Approved by Adina Creanga – Global Quality & Food Safety Director

References:

1. Commission Regulation (EU) 2023/915 of 25 April 2023 on maximum levels for certain contaminants in food and repealing Regulation (EC) No 1881/2006
2. Standard for Named Vegetable Oils (CODEX STAN 210-1999) and its amendments
3. MVO Standard for refined vegetable oils and fats
4. AAK limit for refined vegetable oils and fats (determined via risk analysis)
5. Regulation (EU) 2020/1158 of 5 August 2020 on the conditions governing imports of food and feed originating in third countries following the accident at the Chernobyl nuclear power station
6. Directive 2009/32/EC of the European Parliament and of the Council of 23 April 2009 on the approximation of the laws of the Member States on extraction solvents used in the production of foodstuffs and food ingredient
7. Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC and its amendments

* This standard concerns vegetable oils and fats, either as a singular component, or as a blend (excluding additives) produced at the AAK sites in Karlshamn (Sweden) and Zaandijk (the Netherlands).

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