

COUNCIL OF EUROPE

COMMITTEE OF MINISTERS

RESOLUTION AP (96) 4

ON MAXIMUM AND GUIDELINE LEVELS AND
ON SOURCE-DIRECTED MEASURES
AIMED AT REDUCING THE CONTAMINATION OF FOOD
BY LEAD, CADMIUM AND MERCURY

(Adopted by the Committee of Ministers on 2 October 1996

at the 574th meeting of the Ministers' Deputies)

PROVISIONAL VERSION

The Representatives on the Committee of Ministers of Belgium, France, Germany, Italy, Luxembourg, the Netherlands and the United Kingdom of Great Britain and Northern Ireland, these States being parties to the Partial Agreement in the social and public health field, and the Representatives of Austria, Denmark, Finland, Ireland, Spain and Switzerland, States which have participated in the public health activities carried out within the above-mentioned Partial Agreement since 1 October 1974, 2 April 1968, 20 June 1991, 23 September 1969, 21 April 1988 and 5 May 1964 respectively,

Considering that the aim of the Council of Europe is to achieve a greater unity between its members and that this aim may be pursued by common action in the social and public health field;

Having regard to the provisions of the Brussels Treaty, signed on 17 March 1948, by virtue of which Belgium, France, Luxembourg, the Netherlands and the United Kingdom of Great Britain and Northern Ireland declared themselves resolved to strengthen the social ties by which they were already united;

Having regard to the protocol modifying and completing the Brussels Treaty, signed on 23 October 1954 by the signatory states of the Brussels Treaty, on the one hand, and the Federal Republic of Germany and Italy, on the other hand;

Observing that the seven States parties to the Partial Agreement which have continued within the Council of Europe the social work hitherto undertaken by the Brussels Treaty Organisation and then by Western European Union, which derived from the Brussels Treaty as modified by the protocol mentioned in the fourth paragraph above, as well as Austria, Denmark, Finland, Ireland, Spain and Switzerland, which participate in Partial Agreement activities in the field of public health, have always endeavoured to be in the forefront of progress in social matters and also in the associated field of public health, and have for many years undertaken action towards harmonisation of their legislation;

Having regard to the fact that contaminants in food may be of concern to public health;

Considering that contaminants in food may arise from any part of the food chain including production of raw materials and the processing, packaging and marketing of food;

Considering that the presence of contaminants in food may have various origins and does not necessarily imply that the food is not acceptable for consumption;

Considering that the trade in foods is increasing, and that technical barriers to trade should be avoided between member States of the Partial Agreement in the social and public health field;

Taking the view that each member State of the Partial Agreement in the social and public health field will find it beneficial to harmonise regulations and other measures taken to reduce the levels of contaminants in food to as low a level as reasonably achievable, taking into account mainly toxicological and other considerations;

Having regard to the fact that each member State of the Partial Agreement in the Social and Public Health Field may take other measures including dietary advice to reduce consumer exposure to contaminants;

Recommend to the governments of the seven States Parties to the Partial Agreement as well as those of Austria, Denmark, Finland, Ireland, Spain and Switzerland, that they take into account in their national laws and regulations on the control of contaminants in foods the measures and recommendations set out in the Appendix hereafter.

Appendix 1 to Resolution AP (96) 4

Definitions and Scope

1. For the purposes of this Resolution contaminant means:

Any substance not intentionally added to food, which is present in such food as a result of the production (including operations carried out in crop husbandry, animal husbandry and veterinary medicine), manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food or as a result of environmental contamination. The term does not include insect fragments, rodent hairs and other extraneous matter (Codex Alimentarius Commission Procedure Manual, 8th Edition, 1994).

Pesticide residues and veterinary drugs in foodstuffs are not covered by this Resolution.

For the purpose of this Resolution the *Maximum Level* for a contaminant in a food is the maximum concentration of that substance to be legally permitted in that food when offered for sale for human consumption.

The *Guideline Level* is the *Maximum Level* recommended to be acceptable for foods moving in international trade. When a *Guideline Level* is exceeded, governments should decide whether or under what circumstances the food should be accepted for sale.

The interpretation of *Maximum and Guideline Levels* is based upon adequate methods to ensure that a sample for analysis is representative for the average content of a contaminant in a lot, and shall take into account errors arising from sampling procedures and methods of analysis.

2. This Resolution seeks to minimise the exposure of consumers to contaminants by identifying the controls needed at appropriate stages of food production, and thus recommending general and specific measures, in particular source-directed measures, to reduce the contamination of foods by lead, cadmium and mercury, and/or by dietary advice, as well as by recommending *Maximum and Guideline Levels* for these contaminants in the most relevant foods.

Appendix 2 to Resolution AP (96) 4

Measures aimed at reducing the contamination of food

by lead, cadmium and mercury

Lead

It is recommended that:

1. relevant source-directed measures be taken to reduce the contamination of food and drink by lead, including:
 - introducing lower levels of added lead to petrol and increased use of unleaded petrol for motor vehicles;
 - reduce the emission of lead into the environment from industry, such as lead mines and waste incinerators, as well as from secondary sources such as lead-based paint and lead capsules for wine bottles;

- reduce lead emissions by controlling the use of lead by society and particularly control the disposal of lead;
 - replace the use of lead shot and lead weights for fishing with steel shot and appropriate weights, respectively;
2. appropriate technology be applied in food production, storage and processing, including:
- phase out the use of lead soldered cans;
 - phase out the use of lead capsules for wine bottles;
 - replace or reduce the lead present in pipe work, particularly for drinking water, in containers and food processing equipment;
 - control the release of lead from containers for food and drink made of ceramics (in conformity with EC Directive 84/500) and lead crystal;
3. *Maximum and Guideline Levels* be laid down in order to exclude the worst cases of lead contaminated foods from entering the market.

Cadmium

It is recommended that:

1. recycling of materials containing cadmium, including alkaline batteries be increased.
2. additives in plastics containing cadmium (stabilisers, pigments) be substituted with safe alternatives.
3. the use of galvanized pipes in water distribution systems and the use of cadmium containing alloys in domestic plumbing be avoided in soft water areas.
4. the cadmium content of fertilizers be reduced to the lowest level possible through the selection of minerals low in cadmium or through industrial processes.
5. acidic agricultural soils be treated with lime in order to reduce cadmium transfer to vegetables, wherever possible.
6. animal and vegetable products from regions with a high density of industries emitting cadmium (zinc refining, production and processing of non-ferrous metals, manufacture of alkaline accumulators and galvanizing industry) be submitted to a specific monitoring programme.
7. the use of material releasing cadmium into food during its preparation, cooking, storage and distribution should be avoided.
8. ceramics which can release cadmium into food during its preparation and cooking should conform to EC Directive 84/500.
9. the population be informed about the risk of consumption of specific foods from certain areas of known cadmium contamination, and more particularly, the frequent intake of foods which are known cadmium vectors.
10. *Maximum and Guideline Levels* be laid down in order to exclude the worst cases of cadmium contaminated foods from entering the market.

Mercury

It is recommended that:

1. mercury emissions in any form from anthropogenic activities including industrial processes and the recycling of refuse in urban areas be kept under control, and if possible reduced.
2. the identification and mapping of mercury-rich zones be carried out with the adoption of appropriate control measures, including suitable information to consumers, to reduce exposure of the resident population and contamination of food.
3. periodic monitoring of mercury concentrations in foodstuffs and estimations of intake be performed to monitor trends in exposure.

4. programmes targeted at consumers of those fish products most likely to be contaminated with mercury be implemented to provide advice on appropriate nutritional habits including:
- information programmes on the possible risks from exposure to mercury in the diet during pregnancy and early infancy;
 - introduction and harmonisation of *Maximum Levels* for mercury, in particular for old, large fish and fish products.
5. bore-hole water for human use from certain geological zones be strictly controlled.
6. *Maximum* or *Guideline Levels* be laid down in order to exclude the worst cases of mercury contaminated foods from entering the market.

Appendix 3 to Resolution AP (96) 4

Maximum and Guideline Levels

for lead, cadmium and mercury in foodstuffs

Maximum and Guideline Levels for lead, cadmium and mercury in foodstuffs in mg/kg wet weight are laid down to cover all groups of foodstuffs that contribute significantly to the intake of lead, cadmium and mercury, respectively. They are laid down using a horizontal approach and resulting in levels compatible with international toxicological assessment as expressed by a Provisional Tolerable Weekly Intake (PTWI) for each contaminant, taking into consideration relevant intake and exposure data.

Maximum and Guideline Levels for lead in foodstuffs

Food	Max. Level (Guidel. Level) mg/kg
Milk and infant formulae (as consumed)	0.02
Meat and meat products, poultry (except game), except liver and kidney	0.1
Liver and kidney	0.5
Fish and fish products (excl. shellfish)	(1.0)
Molluscan bivalves and crustaceans	1.0
Fats and oils	0.1
Soft drinks and alcoholic beverages, excl. juices, nectars and wine	0.02
Juices of vegetables, fruits and berries, and nectars	0.1
Wines and fortified wines (bottled after 1993)	0.25
Fruits and berries	0.1
Vegetables, excl. brassica and leafy vegetables, and potatoes	0.1
Brassica and leafy vegetables, except kale (<i>Brassica oleracea</i> var. <i>sabellica</i>)	0.1
Potatoes	0.15
Cereals, legumes and pulses, and products, excl. bran	0.1

Intake and content of lead in foodstuffs

Product	Daily	Typical	Typical	Extreme	Max. Level
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	typical intake g	content µg/kg	exposure µg/d	exposure µg/d	Guidel. Level mg/kg
Milk and infant formulae	200-500 (400)	2-3	1	3	0.02
Meat, poultry excl. offal	100-250 (150) 0-10 (5)	10-50 (20) 100-500	3 1	9 3	0.1 0.5
Fish excl. shellfish	10-50 (30) 0-15 (5)	30-1000 50-3000	3 5	9 15	(1.0) 1.0
Fats, oil	50-100 (50)	10-30	2	6	0.1
Drinks excl. juices, wine	500-1500 (1000) 50-200 (100) 0-500 (100)	<5 10 50-100	1 1 10	3 3 30	0.02 0.1 0.25
Fruit	100-500 (200)	10-100	5	15	0.1
Vegetables excl. potatoes leafy vegs. + brassica	100-500 (200) 40-150 (50)	10-50 (20) 50-500 (100)	4 5	12 15	0.1 0.1
Potatoes	50-300 (100)	20-100	5	15	0.15
Cereals incl. cereal products	50-400 (200)	20 - 50	10	30	0.1
Total			61	183	

Maximum and Guideline Levels for cadmium in foodstuffs

Food	Max. Level (Guidel. Level) (mg/kg)
Raw Cereals	0.2

Cereal products	0.1
Vegetables and fruits, except leafy vegetables	0.1
- leafy vegetables	(0.2)
Meat (except meat from equites*, liver and kidney)	0.1
- liver	(1)
- kidney	(2)
Fish	0.2
Crustaceans, except crab	1
- crab	(2)
Molluscs	2
Beverages, except wine, beer and cider	0.01
- beer and cider	(0.02)
- wine	(0.01)

* Meat from equites may contain high levels of cadmium. Offals of equites should only exceptionally be eaten, in particular liver and kidney from old horses etc. They often contain very high levels of cadmium (>10 mg/kg). Liver and kidney of old animals should not be sold for human consumption.

Intake and content of cadmium in foodstuffs

Product	Daily typical intake g	Typical content µg/kg	Typical exposure µg/d	Extreme exposure µg/d	Max. Level (Guidel. Level) mg/kg
Cereals and cereal products, except bran	50-500 (300)	50	15	45	0.1
Vegetables and fruit, except leafy vegetables	100-1000 (600)	5	3	9	0.1
Leafy vegetables	10-100 (30)	50	1	3	(0.2)
Meat and poultry, except meat from equites, liver and kidney	100-250 (150)	20	-	1	0.1
Meat from equites	0-10 (1)	1000	1	3	-
Liver	0-10 (5)	50	-	1	(1)
Kidney	1-10 (1)	100	-	1	(2)
Fish	10-50 (30)	20	1	3	0.2
Soft drinks and beverages, except	500-1500	1	1	3	0.01

wine, beer and cider	(1200)				
Wine	0-500 (100)	4	-	-	(0.01)
Beer and cider	0-500 (200)	2	-	-	(0.02)
Total			22	69	

Maximum and Guideline Levels for mercury in foodstuffs

Food	Max. Level (Guidel. Level) mg/kg
Fish and shellfish except for fish listed in appendix to EEC Decision 93/351/CEE of 19 May 1993	0.5 1.0
Other foods	(0.03)
Beverages	(0.01)

Intake and content of mercury in foodstuffs

Product	Daily typical intake g	Typical content µg/kg	Typical exposure µg/d	Extreme exposure µg/d	Max. Level (Guidel. Level) mg/kg
Fish and shellfish except as in EEC Decision 93/351/CEE	10-50 (30)	50-500 (100)	3	9	0,5
Fish as in 693/351	0-20 (5)	100-2000 (500)	2.5	7.5	1,0
Other foods	500-2000 (1000)	0-20 (5)	5	15	(0,03)
Beverages	500-2000 (1500)	<5 (1)	1.5	4.5	(0,01)
Total			12	36	