

Objects in various coated metals (whitened metals)

1. Scope

This section deals with metallic materials and objects in whitened metal other than those mentioned in the another sheets relating to metals (see general sheet on metals) which, as finished products, are intended to be in contact with foodstuffs, food products and beverages for human and animals .

Definition of whitened metal: metallic object coated in a light white deposit such as silver, nickel, tin and chromium or a combination of these elements.

The main examples of metallic supports are as follows: copper or copper alloy, zinc or zinc alloy.

The main examples of metallic coatings in contact are as follows: nickel, silver, gold, tin and chromium.

The main application examples are the following elements: tea and coffee services, cups, metal drinking cups, plates, cake tongs and servers, cake moulds, salad servers etc.

This sheet does not include silvered metal.

2. Usage restrictions

Objects in various coated metals (whitened metal) intended to be in direct contact with food products must not be put in contact with acid foodstuffs or drink.

3. Definitions of performance criteria for food contact

3.1. Regulatory texts

- Order of 28th June 1912 relating to the conservation and packaging of foodstuffs and drinks,
- Order of 7 November 1985 relating to the limitation in the quantities of lead and cadmium which can be extracted from objects in ceramic or which are intended to be in contact with foodstuffs, food products and drinks,
- Order of 15th November 1945 setting the list of materials likely to be used without adverse effect on public health in the manufacturing of measuring instruments.

3.2. Criteria to be used

3.2.1. Object the objects (support + coating)

The composition of the objects will be checked in particular to determine the content in copper, nickel, chromium and zinc and in undesirable elements lead, arsenic, cadmium.

3.2.2. Specific migration

Specific migration tests for the metals which are determined during this first research and which are likely to cause health problems will be carried out by choosing the most severe simulator liquid(s) and test conditions.

According to the composition of the objects the specific migrations of lead, cadmium, nickel, chromium, copper and zinc will be tested.

4. Acceptability limits

4.1. Maximum content in undesirable elements

Pb \leq 0.050%

Cd \leq 0.010%

As \leq 0.030%

4.2. Specific Migration Limits

Specific migration of Ni: 0.5 mg/kg (waiting evaluation by AFSSA)

Specific total migration of Cr: 5 mg/kg

Specific migration of Zn: 10 mg/kg

Specific migration of Pb: 4 mg/kg

Specific migration of Cd: 0.3 mg/kg

5. Rules to check the criteria defined in paragraph 3.

- Test conditions according to directives 82/711/CEE (lastly amended by directive 97/48/CEE) and 85/572/CEE:
 - Temperature and contact duration
 - Simulator liquids chosen according to the use:

Foodstuff	Simulator Liquid
Aqueous food (pH>4.5)	Distilled water or water of equivalent quality
Alcoholic food	Ethanol at 10% (v/v). This concentration should be adapted according to the alcoholic content of the food if it exceeds 10% (v/v).
Fatty food	Oil or substitute simulator, 2 hours at 175°C if for use at high temperature
Dry food	No migration test
Acid food (pH \leq 4.5)	Not include in the scope

For all objects which cannot be filled, the surface/volume ratio adopted by convention is 6 dm² for 1 kg or 1 l of simulator.