NESTLE STANDARDS ON MATERIALS IN CONTACT WITH FOOD

ABSTRACT

This document is an abstract of a Nestec General Instruction (GI-80.008-3 of January 2014) that includes 26 STANDARDS. **This abstract must be shared with material suppliers**. The GI itself and the one-page STANDARDS are intended for internal use only and may not be reproduced, distributed or disclosed to third parties without proper authorisation.

The STANDARDS are **mandatory**. The following rules apply:

- When no local legal requirements exist in the domains covered by the STANDARDS or if local legal requirements are less stringent, the STANDARDS must be enforced.
- When local legal or Nestlé business requirements exist in the domains covered by the STANDARDS and are more stringent, these additional requirements must be enforced.

The changes in the requirements compared with the previous version (Version 2.2 of January 2013) are highlighted in grey.

[In alphabetical order of STANDARDS]

#	STANDARD	Individual Substance Name (acronym and CAS number)	Restriction
1	Active and Intelligent packaging		- The use of antimicrobial additives should be avoided. - must comply with regulations and a safety dossier should be prepared.
2	Auxiliary items	 - Plasticised PVC	Subject to the same restrictions as food contact material. - Only plasticisers having no restriction in EU Commission Regulation 10/2011 can be used (e.g. DINCH).
3	Baby food packaging	Overall migration	- Max. limit 20 mg/kg - Max limit of 30 mg/kg for metal closures with gasket compound.
4	Beverage dispensing machines		Food contact parts are subject to the same restrictions as food contact material
5	Bisphenol A	Bisphenol A (BPA, 80-05-7)	The use of Bisphenol A based materials (epoxy coatings, polycarbonate, and additives of packaging material components) is not allowed. For cans, this is mandatory for interior coatings only.
6	Fluoro-based compounds	- Perfluorooctanoate (PFOA 3825-26-1)	- Max. 20 µg/kg material.
7	Heavy metals	Cadmium, chromium VI, lead, mercury	- Must not be intentionally used in packaging materials especially in inks and colorants of plastic components (e.g. caps). - Total limits of 100 mg/kg in materials.
8	High temperature applications (e.g. ovenable materials, boil-in bag packages)	- Packaging materials - Printed materials - Inner printed materials	Can be used with supporting migration data demonstrating the safety of the materials at high temp conditions of use. - Allowed only if the temperature of the printed layer does not exceed 100°C - Must not be used in high temp applications

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#	STANDARD	Individual Substance Name (acronym and CAS number)	Restriction
9	Lamination adhesives	- Bisphenol A (BPA, 80-05-7) - Phthalates (see 16 below) - Toluene - 2-Ethylhexyl acrylate (2-EHA)	- Is not allowed. - Must not be used. - Allowed for technical reasons but must not migrate into the food or give off-odor to the packaging. - Limit of 2 mg/m^2 for toluene.
10	Latex in cold seals	- Natural rubber latex	Only allowed when applied to the sealing areas only.
11	Metal closure gaskets	- Azodicarbonamide (123-77-3) - Phthalates (see 16 below) - Epoxidised soya bean oil (ESBO, 8013-07-8) - Citrates: Triethyl citrate (77-93-0) Acetyltriethyl citrate (77-89-4) Tributyl citrate (77-94-1) Acetyltributyl citrate (ATBC, 77-90-7) - Adipates: Bis(2-ethyl hexyl) adipate (DEHA, 103-23-1) Dibutyl adipate (105-99-7) Diethyl adipate (141-28-6) Ethyl hydrogen adipate (626-86-8) - Other plasticisers: DINCH (474919-59-0 (U.S.). 166412-78-8 outside US))	- Must not be used. - Must not be used. - Max. 30 mg/kg in baby food. - Citrates, adipates and other plasticisers: Must be used in limited amounts for Twist Off (TO) closures for products with free oil so that migration does not exceed applicable regulatory limits.
12	Metal packaging coatings (cans, closures, aluminium membranes)	 - Bisphenol F diglycidyl ether (BFDGE, 2095-03-6) - Novolac diglycidyl ether (NOGE, 28064-14-4) - Bisphenol A (BPA, 80-05-7) see #5 above - BADGE Chlorohydrins	- Must not transfer their constituents to foodstuffs in quantities exceeding 10 mg/dm^2 of surface area of material. - Must not transfer migrating components whose molecular weight is less than 1000 Da and which are not listed in the Council of Europe Resolution or FDA Regulation, in quantities exceeding 0.01 mg/kg foodstuff. - Must not be used. - Must not be used. - Must not be used. - Max. 1 mg/kg in food or food simulants.

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#	STANDARD	Individual Substance Name (acronym and CAS number)	Restriction
13	Mineral hydrocarbons / Waxes	- Mineral waxes	- Only highly purified microcrystalline waxes (e.g. EU REF 95859) can be used for direct food contact applications such as wax coated wooden ice cream sticks, wax coated paper, etc. Composition and purity of the waxes must be known.
		- Unsaponifiable matter in jute sacks	- Max. 1250 mg/kg in material.
		- Spinning oil in jute sacks	- Peanut-, sesame- and other oils containing allergens must not be used.
14	Packaging inks - 1. Outer printing	- Swiss Ordinance on packaging inks[b] - Nestlé Guidance Note on Packaging Inks[c] - Exclusion lists[d] (e.g. EuPIA, Japan)	- Must comply with - Must comply with - Must comply with
		- Virgin Paper/board - Corrugated paper/board	- Must use low migration inks[f] - Recommended low migration inks
15	Packaging inks - 2. Ink jet printing	- Methanol (67-56-1)	- Max. 1% in inkjet.
		- Ethanol (64-17-5)	- Ethanol denaturant must be known and not listed in the Exclusion lists[b].
		- Black pigment	- Should be without poly aromatic hydrocarbons (PAHs)
		- Inner ink-jet printing	- Only inks allowed for direct food contact can be used for inner ink-jet printing from CT-Pack approved suppliers or inks.
16	Phthalates	Phthalates, (i.e. *ortho*-phthalates) Including but not limited to: Di-(2-ethylhexyl)phthalate (117-81-7) Diisodecylphtalate (26761-40-0) Dibutylphthalate (84-74-2) Diisononylphtalate (28553-12-0) Diisooctylphtalate (27554-26-3) Dioctyl phthalate (117-84-0) Diisobutyl phthalate (84-69-5) Diethyl phthalate (84-66-2)	- Must not be intentionally used (exception: when used as part of catalyst system for olefin production)
17	Polyacrylonitrile (PA)	- Acrylonitrile (107-13-1) - Polyacrylonitrile	- Must not be detectable in food. - Must not be used in contact with infant foods.

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#	Standard	Individual Substance Name (acronym and CAS number)	Restriction
18	Polyethylene terephthalate (PET)	- Oligomers in PET resin for bottles used for fatty food applications - Acetaldehyde (75-07-0): - in resin for water bottles - Antimony trioxide in PET resin in High Temperature Applications	- Must not exceed 1%. - Must not exceed 1 mg/kg. - Target maximum: 250 mg/kg (expressed as Sb)
19	Polystyrene (PS)	- Styrene (100-42-5) - Styrene oligomers - Polystyrene	- Max 500 mg/kg in polystyrene. - Max. 0.3 mg/kg in food. - The residual oligomer content in PS must be minimized. - Must not be used in oven applications - Should be avoided for microwave use.
20	Polyvinylchloride (PVC)	- Vinyl chloride (75-01-4) - Plasticised PVC	- Must not be detectable in food. - Max. 1 mg/kg in PVC. - Only plasticisers having no restriction in EU Commission Regulation 10/2011 can be used (e.g. DINCH).
21	Polyvinylidene chloride (PVDC)	- Vinylidene chloride (75-35-4)	- Must not be detectable in food. - Max. 5 mg/kg in PVDC.
22	Recycled paper & board	Recycled solid board and Recycled corrugated board Recycled solid board Mineral Oil Hydrocarbons (MOH) (C16 to C24) in recycled solid board	- Must not be used in direct contact with food. - Indirect use of solid board is allowed for frozen food applications or allowed for any packaging applications which have a functional barrier[9] as primary packaging around the food. - Must not be used for heating purposes. - Virgin solid board should be used for all other solid board applications - As low as possible with allowed average level of 600±150 mg/kg MOH
23	Recycled plastics	- Recycled plastic directly touching the food - Recycled plastics	- Must be from recycling process approved by EU or FDA regulations. - Should not be used for ovenable/microwave applications (contact Nestec for exceptions).

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#	Standard	Individual Substance Name (acronym and CAS number)	Restriction
24	Residual solvents	- Total amount - Total amount of combined ketones and acetates - Toluene (108-88-3)	- Max. 20 mg/m^2 material - Max. 7 mg/m^2 material - Must not be intentionally used for ink formulation (cross-contamination max. limit: 2 mg/m^2). - allowed for lamination adhesives (see #9 above).
25	Shrink sleeves	Full length plastic shrink sleeves (that cover the neck of a container)	- Must not be used in combination with glass containers for products that are spoon-fed or drunk directly from the bottle. - shrink sleeves made of PVC should be avoided
26	Substances of Very High Concern (SVHC)	- Candidate and Authorisation lists available from ECHA website[e]	- Must not be intentionally used as additives (excluding processing aids, catalytic systems, and pigmented ceramic material where no suitable alternatives exists)

Additional General Requirements:

	Odour	Packaging materials where odour testing required	Acceptable - according to Sniff Test, LI-80.017-3[a]
	Inner Printing	Direct food contact printing	Only allowed with inks made with food additives from manufacturers approved by Nestec/CT-Pack

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[a] Internal method available on request (aligned with ISO-13302 standard).

[b] Swiss ordinance on packaging inks: http://www.bag.admin.ch/themen/lebensmittel/04867/10015/index.html?lang=en

[c] Copy available from Nestlé intranet **(must be shared with material suppliers)**.

[d] Exclusion list for printing inks and related products, EUPIA, 8th edition, November 2012: http://www.eupia.org/index.php?id=3
Voluntary regulation concerning printing inks for food packaging materials, Japan Printing Ink Makers Association, May 2006. Copy available on request.

[e] http://echa.europa.eu/chem_data/candidate_list_table_en.asp

[f] Low migration inks are inks for food packaging applications which are formulated to reduce potential migration of compounds of concern to levels below regulatory limits where migration can occur through the substrate or via set-off from the printed outer side to the food contact surface in the stack or the reel.

[g] Functional barriers are defined as one or more layers of food contact materials which ensure that compounds of concern[h] do not migrate into the food above regulatory limits during the shelf-life of the product.
Note: set-off migration is not prevented by functional barriers and should be evaluated for all packaging materials which is in stack or reel format during or after its conversion.

[h] Compounds of concern can:
(a) endanger human health;
(b) bring about an unacceptable change in the composition of the food
(c) bring about deterioration in the organoleptic characteristics thereof.

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