Risk Assessment for Packaging (Food Contact) Materials

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PACKAGING MATERIALS

- Prevent food from contamination
- Preserve safety and quality of food

PACKAGING MATERIALS

Plastics

Glass

Ceramics

Wood

Paper & board

Metals & alloys

Paraffin, waxes

Varnishes, inks etc…….

Food contact material needs
Careful evaluation

PACKAGING MATERIALS

Migration of chemicals from food contact materials:

- Impacts on food quality
- Impact on food safety

PACKAGING MATERIALS

Direct food contact materials:

- Cans, bottles, plastics, caps etc.

  - Should have food contact certification

  - Migration testing data for wet food

Indirect food contact materials:

- Boards, varnish, inks etc.

  - Should have regulatory compliance

PACKAGING MATERIALS

Foods packaging regulations:

- Regulations available for Direct and Indirect contact materials
  - Indian Standards
  - FDA 21CFR
  - European Directive 2002/72/EC
  - BfR
  - Australian Standard AS2070-1999
  - MERCOSUR Regulations
  - FCC
  - Japanese Food and Sanitation Act relating to food contact materials

PACKAGING MATERIALS

Migration:

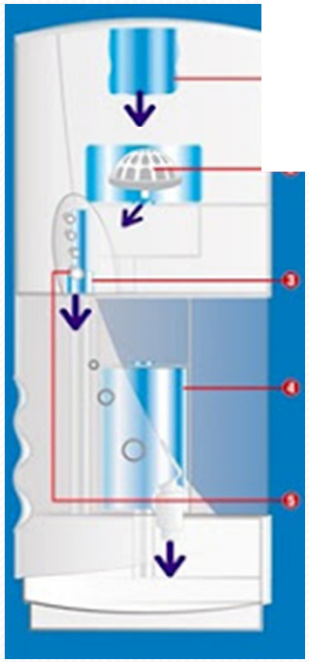
- Substances from food contact materials must not migrate in quantities which could endanger human health.
- Regulations / guidance documents are available for migration testing of plastics and food contact materials.

BIS-migration test guidelines

PACKAGING MATERIALS

- Thorough toxicological evaluation of both food ingredients and packaging material is needed for determination of safety of food products
- In case of information gap, toxicological testing of packaging material is necessary for safety assessment
- Additionally, processing conditions, handling and storage etc. also affect packaging safety

EXAMPLE – WATER PURIFIERS



CASE STUDY – A WATER PURIFIER

General description:

The purifier mainly consists of a plastic body and disinfectant

- Plastic body made of high density Polyethylene terephthalate (PET) and Polycarbonate
- Disinfectant - chlorine (4ppm)

RISK ASSESSMENT

Safety support for the components

- Polyethylene terephthalate (PET) – FDA 21CFR 177.1630
- Polycarbonate – FDA 21CFR 177.1580
- WHO guidelines allow up to 5ppm chlorine in drinking water
- Migration testing of all the plastic components carried out with chlorinated water under exaggerated conditions (40oC for 30 days, leaching within limits i.e. <60ppm)

RISK ASSESSMENT

- All materials of construction are suitable for drinking water contact.
- Migration tests of the components were carried out with chlorine water to simulate the chlorine environment – leaching within acceptable limits.

The device is safe for use as a water purification unit