Supporting document 5

FSANZ's approach to estimating the residual risk – Proposal P1034

Chemical Migration from Packaging into Food

FSANZ considered two key factors in analysing the residual risk: the risk posed by specific packaging chemicals and the control measures currently used to mitigate this risk:

Risk — The analysis of the risk comprises different elements including:

- inherent risk (i.e. the hazard profile, including the toxicity and nature of the chemical)
- exposure to the chemical (this is dependent upon the food matrix, consumption, market share for packaging type)
- evidence of exposure and migration in the Australia/New Zealand context (from analytical surveys).

Control measures — The analysis of control measures for chemical migration from packaging into food (CMPF) currently used by industry include:

- market understanding and an estimate of how consistently measures are applied across industry sectors
- knowledge from industry surveys and stakeholder consultations on regulatory and non-regulatory measures used by a cross-section of industry members along the packaging supply chain
- uptake of regulatory requirements currently in place.

The interplay or 'balance' of these factors enables a qualitative estimation of the range of residual risk from CMPF (illustrated in Figure 1).

Through this Proposal, FSANZ developed a concept of how to visualise the overall residual risk from CMPF. A risk matrix 'heat map' (Figure 2) has been used to qualitatively illustrate the residual risk from a few examples of chemicals associated with different packaging types.

The examples provided in Figure 2 (lead migration from glass; tin from drum metal; vinyl chloride from plastic and acrylonitrile from plastic) indicate how the introduction of control measures[1] for these chemicals, resulted in a reduction in the residual risk. The consequence of introducing control measures is an overall reduction of the residual risk. This is denoted by a shift from the red zone (high residual risk) to the green zone (low residual risk) on the residual risk heat map.

[1] Control measures used by industry include compliance with regulatory measures (specific maximum levels in Standard 1.4.1, introduced post-1975) and also adherence to non-regulatory measures such as Good Manufacturing Practice, guidelines or codes of practice.

This has been verified through evidence from FSANZ's survey work[2].

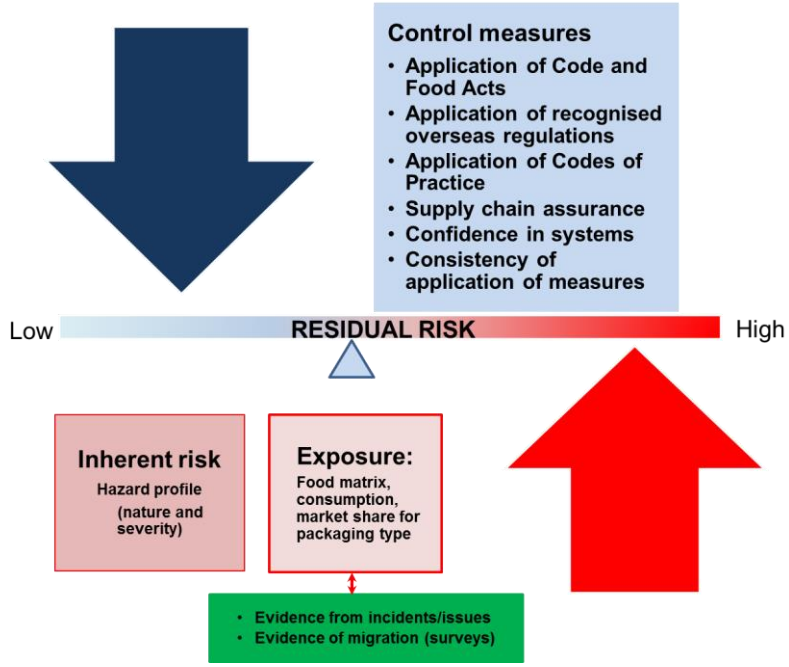

Figure 1: Illustration of the balance of factors affecting the residual risk from CMPF.

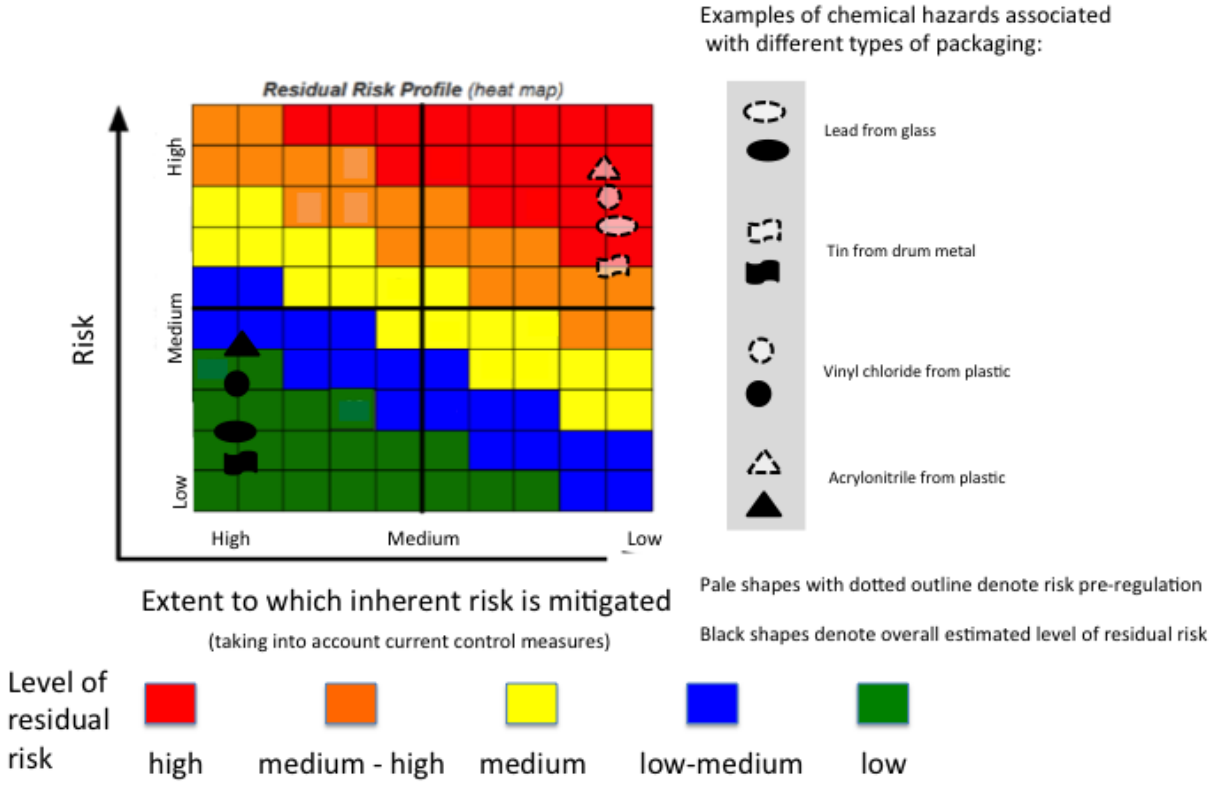

Figure 2: Qualitative estimate of the residual risk from chemicals associated with different packaging types

[2] Survey of chemical migration from packaging into food packaging materials in Australian food (acrylonitrile and vinyl chloride; http://www.foodstandards.gov.au/science/surveillance/pages/surveyofchemicalmigr5148.aspx);20th Australian Total Diet Survey (tin; http://www.foodstandards.gov.au/publications/Pages/20thaustraliantotaldietsurveyjanuary2003/20thaustraliantotaldietsurveyfullreport/Default.aspx); 23rd Australian Total Diet Survey (lead; http://www.foodstandards.gov.au/publications/pages/23rdaustraliantotald5367.aspx).