German Federal Institute for Risk Assessment

This is an unofficial translation. Only the German version is binding.

XXXIII. Acetal Resins

As of 01.01.2010

There are no objections to the use of acetal resins in the manufacture of commodities in the sense of § 2, Para. 6, No 1 of the Food and Feed Code (Lebensmittel- und Futtermittelgesetzbuch), provided they are suitable for their intended purpose and comply with the following conditions:

1. The use of starting materials for the manufacture of acetal resins is subject to the requirements of the Commission Regulation (EU) No 10/2011.

The evaluation presented in the following refers to polymers from the following monomeric starting substances:

a) Monomers:
Formaldehyde, also as oligomeric trioxymethylene (trioxane)

b) Comonomers:

Ethylene oxide *Butanediol diglycidyl ether* *Butanediol formal* *1,3-Dioxolane*	*in total* *max. 6 %*

The flow number of the polymer, expressed in g/10 min (190 °C, 2.16 kp), determined according to DIN ISO 1133, must not exceed 50.
The acetal resins may be mixed with polyurethanes according to BfR Recommendation XXXIX "Commodities based on Polyurethanes", category I. The portion of acetal resins in these mixtures must predominate in any case.

2. The following catalysts and polymerisation regulators may be used:
   a) Catalysts:

Ethylamine Triethylamine Tri-n-butylamine Diphenylamine Methyl-di-n-stearylamine Dimethyl-dioctadecyl ammonium acetate Triphenyl phosphine Aluminium chloride[1] Iron(III) chloride[1] Boron trifluoride Boron trifluoride etherate Trifluoromethane sulfonic acid, max. 0.5 mg/kg	in total max. 0.1 %

[1] Permitted as an additive in accordance with the Commission Regulation (EU) No 10/2011.

b) Polymerisation regulators and inhibitors:

Methylal	in total max. 1.0 %
Butylal	
Sodium fluoride, max. 0.3 %	
Sodium chloride[1]	
Calcium fluoride	
Sodium carbonate[1]	
Calcium carbonate[1]	
Magnesium carbonate[1]	

3. Finished products must contain no more than 0.008 % Boron and 0.006 % Fluorine.
   Zinc content of the finished products must not exceed 1.0 %.

4. Acetal resins are unsuitable for storing or packaging acidic contents with a pH value of less than 2.5.