

# C E R T I F I C A T E

Food regulatory evaluation of the migration of printing ink components from the printing ink series "Returin 194"

Customer: Resino Trykfarver AS  
2750 Ballerup  
Denmark

Order: PA/4836/13

The printing ink series "Returin 194" of Resino Trykfarver AS is a 2-component polyurethane based ink system used for the printing of sausage casings.

To meet the specific requirements of Resino's clients the composition of the printing ink is subjected to minor modifications. These modifications essentially represent varying concentration ranges of the used solvents and plasticisers. The formulation of six variants of the printing ink series "Returin 194" (Returin 194-1, -5, -5D, -7, -21 and -50) was disclosed by Resino to Fraunhofer IVV on the basis of confidentiality.

In order to evaluate the food regulatory compliance of the printing ink series "Returin 194" Fraunhofer IVV investigated four representative variants (Returin 194-21, -5, -5D and -7) by specific migration and screening analyses. For this purpose the inks were applied partially and, respectively, over the entire surface on PA/PE/PA multilayer casings as well as on cellulose casings (Fraunhofer IVV test reports for orders PA/4198/11, PA/4648/12, PA/4136/13 and PA/4137/13).

The intended application of the investigated casings printed with "Returin 194" is the packaging of sausage products with typical cooking conditions of up to 6 hours at 100 °C followed by long-term storage of up to 6 months at room temperature.

To date, printing inks and their components used for food contact materials and articles are not specifically regulated on national or European level. Therefore for the assessment of printing inks for casings, compliance with the general requirements for food contact materials as laid down in Article 3 of the European Framework Regulation (EC) No 1935/2004 has to be evaluated. In Switzerland, printings may only be used for food contact materials, if their components are listed in Annex 6 of the Swiss Ordinance on Consumer Goods (No 817.023.21.) and must comply with the specific migration limit given there.

Assuming appropriate application and curing of the ink system and considering the performed screening and migration tests as well as the composition of the printing ink, the migration of components from the printing ink series "Returin 194" applied onto cellulose and polyamide based casings complies with the safety requirements according to Article 3 (1a) of European Regulation (EC) No

1935/2004 on food contact materials as well as with the US-American safety requirements as defined in 21 CFR § 170.3 (i). In addition, the investigated printing ink series "Returin 194" is in compliance with the requirements for packaging inks according to the Swiss Regulation on Consumer Goods (No 817.023.21).

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Freising, 24.2.2014



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