

Universal Bright – a New Film Laminated Tin-free Steel Sheet for Food Cans

1. Introduction

Recently, the can manufacturing industry is increasingly using water-soluble lacquers or thermoplastic resin laminates instead of paints containing organic solvents. This is for the following reasons: global environmental conservation, environmental problems at work places associated with painting work, and health and safety of consumers. Traditionally, the food can manufacturing industry has been using lacquer coated steel sheets. However, there is a move to regulate the use of lacquer coated steel sheets in the EU due to the discovery that bisphenol contained in the lacquer paint is an endocrine disrupter. Under these circumstances it was desirable to develop new types of laminated steel sheet. These new laminated steel sheets would

As shown in **Fig.4**, the conventional PET laminated steel sheet has a high surface energy resulting in a poor content release property.

NKK studied the effect of adding surface-modifying additives to the PET film to lower the surface energy.

Fig.5 the con(p)-1.9(9s)4.6(u)eh.6(5Tc02(in)--54 Tt)J8(ari .00485 su

Fig.3 Formability of new film laminated steel sheet

The new modified homo-PET film was applied as the upper layer of the two-layer films in order to improve the content release property. The content release property is correlated to the surface energy at the interface between the content and the can material. As surface energy level lowers, content release property improves. Content release properties were evaluated for various steel sheets with different surface energy. The results are shown in **Fig.4** and **Table 1**.

Fig.4 Effects of surface energy on content release property

Reference

1) Maruki, S. Syokuryo-to-Youki. Vol.40, No.12, pp.672-675(1999).

<Please refer to>

Hiroki Iwasa

Coated Products Research Dept. Mater2i5c5bim66hS(.15)3.4(odessfng)Research DCN

Photo 1 Cans made from the new film laminated TFS

4. Conclusion

NKK has successfully developed and marketed a new film laminated TFS, Universal Bright that does not contain an endocrine disrupter, and excels in content release property and formability. Universal Bright is now being manufactured on a large scale for export to North America and other overseas markets. Universal Bright is expected to become a next-generation standard product for making food cans and its sales will expand rapidly.