

## Test report

### Contracting entity:

Unisto AG  
Werner Zulian  
Leiter QM / UM / Sicherheit  
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**Overall migration of security seals; Unisto Twinstar, Unisto Varis, Unisto Comet, and Unisto Median**

**Plastic colour:** apricot  
**Hot stamping foil:** white

**Sample & analysis**Date samples received

June 6th 2010

Description of samples:**Security Seals “Unisto Twinstar”**

- PP Domolen 2340 P Nature (Unisto internal number 1042968)
- Master batch apricot PP PMS 1485U LS 5546 (Unisto internal number 1001986)
- Foil white PA 911 (Unisto internal number 9544)
- Steel strip 70 X 0.30 stainless (Spring) (Unisto internal number 1000640)
- LIMS number: 21194054 (Intertek internal tracking number for this test)

**As the security seals Unisto Varis, Unisto Comet, and Unisto Median are manufactured out of the exactly same components, the bellow presented results are also valid for these Unisto Products.**

Method(s) applied:**Overall migration**

Overall migration according to directive 2002/72/EC relating to plastic materials and articles intended to come into contact with food and its amendments.

Test conditions and simulants as defined in EC Directive 97/48/EC; *Migration testing (2<sup>nd</sup> amendment of 82/711/EEC)* and EC Directive 85/572/EC; *List of simulants*.

Tests methods as described in:

- EN 1186-1; *Guide to the selection of conditions and test methods for overall migration.*
- EN 1186-3; *Test methods for overall migration into aqueous food simulants by total immersion*
- EN 1186-14; *Test methods for substitute tests for overall migration into iso-octane and 95 % aqueous ethanol*

<b>Simulants</b>	<b>Test conditions</b>
3 % acetic acid	10 days at 40 °C
10 % ethanol	10 days at 40 °C
Iso-octane	2 days at 20 °C

**Results**

Sample: "Unisto Twinstar"

	<b>EN 1186-3 Migration into 3 % acetic acid</b> Contact area: 1,2 dm <sup>2</sup> Volume simulant: 100 ml	<b>EN 1186-3 Migration into 10 % ethanol</b> Contact area: 1,2 dm <sup>2</sup> Volume simulant: 100 ml	<b>EN 1186-14 Migration into iso-octane</b> Contact area: 1,2 dm <sup>2</sup> Volume simulant: 100 ml
Method Replicates	(mg/dm <sup>2</sup> )	(mg/dm <sup>2</sup> )	(mg/dm <sup>2</sup> )
1	< 0,5	< 0,5	3,9
2	< 0,5	< 0,5	4,1
3	< 0,5	< 0,5	4,1
<b>Overall migration, mean result</b>	<b>&lt; 0,5</b>	<b>&lt; 0,5</b>	<b>4,0</b>

**Conclusion**

The overall migration results obtained of the seal *Unisto Twinstar* were found to be in compliance with the restriction for the overall migration limit (< 10 mg/dm<sup>2</sup> or < 60 mg/kg) as defined in EC Directive 2002/72/EC for food contact materials for the test with 3 % acetic acid, 10 % ethanol and iso-octane under the above mentioned test conditions.

As the security seals *Unisto Varis*, *Unisto Comet*, and *Unisto Median* are manufactured out of the exactly same components, the above presented results are also valid for these Unisto Products in apricot colour and printed in white.

This study was performed at Intertek Polychemlab BV by Daisy de Klein BAsC, Expert Project Services

Schlieren, 28.06.2010

Study director



Dr. V. Purghart

Test facility manager



Dr. H.W. Jäckle



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**Anmerkung:** Die Untersuchungsergebnisse haben nur Gültigkeit für das geprüfte Objekt. Das Verwenden des Berichtes zu Werbezwecken, der blosser Hinweis darauf sowie auszugsweises Veröffentlichen bedürfen der Genehmigung der Intertek Caleb Brett (Schweiz) AG (vgl. Merkblatt).  
Berichte und Rohdaten werden 10 Jahre archiviert. Die Prüfobjekte werden bis mind. 3 Monate nach Berichtsdatum zurückgestellt.  
Einzelheiten zu den Untersuchungsverfahren (Normen, SOP), wie Nachweisgrenzen, Streubereich usw., können bei der Geschäftsleitung erfragt werden. Im Übrigen gelten die Allgemeinen Geschäftsbedingungen der Intertek Caleb Brett (Schweiz) AG.