



LABORATORI
D'ENGINYERIA PAPERERA
I MATERIALS POLIMÈRICS

Product in accordance

with Recommendation XXXVI of German BfR about paper and board
designed for foodstuffs contact

The sample composition of AUTOADHESIVO CG-349 manufactured by
TORRASPAPEL, S.A. **is in accordance** with the Recommendation
XXXVI of German regulation BfR and passed the suitability tests related to
pentachlorophenol, antimicrobial constituents, metallic elements (mercury,
cadmium and lead), colourings and brightening analysis and
polychlorinated biphenyls analysis to come into contact with foodstuffs as
described in actual fabrication.

Correspondence number: CP_10_05 /LB

Issued on: May 25th, 2007

Service responsible

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Dr. Chemistry Science

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Laura Barberà

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Membre de:



IT
XARXA DE CENTRES
DE SUPORT
A LA INNOVACIÓ
TECNOLÒGICA

R75.1-07.3 Rev.:02



ANALYSIS DESCRIPTION AND RESULTS

Sample: AUTOADHESIVO CG-349

Experimental analysis and standard methods related:

Analysis	Standard Method
Determination of pentachlorophenol in an aqueous extract	UNE-EN ISO 15320
Determination of Diisopropylnaphthalene (DIPN) content by solvent extraction	UNE-EN 14719
Determination of transfer of antimicrobial constituents	UNE-EN 1104
Determination of colour fastness of dyed paper and board	UNE-EN 646
Determination of the fastness of fluorescent whitened paper and board	UNE-EN 648
Determination of mercury in an aqueous extract	UNE-EN 12497
Determination of cadmium and lead in an aqueous extract	UNE-EN 12498
Determination of 7 specified polychlorinated biphenyls (PCB)	UNE-EN ISO 15318

**DETERMINATION OF PENTACHLOROPHENOL (PCP) IN AN AQUEOUS
EXTRACT, as standard UNE-EN 15320:2004**

1.- SAMPLE DESCRIPTION:

- Sample: AUTOADHESIVO CG-349

2.- MANUFACTURER:

- TORRASPAPEL, S.A.

3.- DATE AND PLACE OF TESTING:

- April 13th, 2007

Grupo LEPAMAP. Universitat de Girona.

Av. Lluís Santaló s/n. 17071 GIRONA

4.- SAMPLE TREATMENT:

Preparation and extraction of sample has been done it as UNE-EN 645 standard. After that, a standard solution has been added, acidified and applied a solid phase concentration, acetylated and determination by means of GC.

5.- RESULTS:

Result obtained is:

		<u>Maximum value allowed*</u>
Pentachlorophenol	non detectable	0,15 mg/Kg (ppm)
MDL 10 ng/g		

* Recommendation XXXVI . Paper and board for food contact.- April 1th 2006.

DETERMINATION OF TRANSFER OF ANTIMICROBIC CONSTITUENTS
according to UNE-EN 1104:2006

1.- SAMPLE DESCRIPTION:

- Sample: AUTOADHESIVO CG-349

2.- MANUFACTURER:

- TORRASPAPEL, S.A.

3.- DATE AND PLACE OF TESTING:

- May 9th, 2007

Grupo LEPAMAP. Universitat de Girona.

Av. Lluís Santaló s/n. 17071 GIRONA

4.- SAMPLE TREATMENT:

The preparation of culture means is made following the indications given in mentioned method.

Plates of petri prepared with Bacillus Subtilis and Aspergillus Niger are incubated during 3 days to 30°C and 5 days to 25°C respectively. It is observed a growth of flora in all the surface and therefore evidence of zone of inhibition is not appreciated. So, the sample does not contain antimicrobial components that are water soluble.

**DETERMINATION OF MERCURY IN AN AQUEOUS EXTRACT, according to
UNE-EN 12497:2006**

1.- SAMPLE DESCRIPTION:

- Sample: AUTOADHESIVO CG-349

2.- MANUFACTURER:

- TORRASPAPEL, S.A.

3.- DATE AND PLACE OF TESTING:

May 18th, 2007

4.- SAMPLE TREATMENT

Sample preparation and mercury extraction have been carried out according to UNE-EN 645 regulation and UNE-EN 12497

5.- RESULTS.

	Results (ppm)	Maximum allowed value (ppm)
Mercury	<0,015	0,3

These results are expressed in µg/g.

Maximum value is those allowed in Recommendation XXXVI of german BfR for this specific metal referred to soluble part.

**DETERMINATION OF CADMIUM AND LEAD IN AN AQUEOUS EXTRACT,
according to UNE-EN 12498:2006**

1.- SAMPLE DESCRIPTION:

- Sample: AUTOADHESIVO CG-349

2.- MANUFACTURER:

- TORRASPAPEL, S.A.

3.- DATE AND PLACE OF TESTING:

Cd, Pb analysis: May 18th, 2007

4.- SAMPLE TREATMENT

Sample preparation and cadmium and lead extraction have been carried out according to UNE-EN 645 and UNE-EN 12498 regulations

5.- RESULTS.

	Results (ppm)	Maximum allowed value (ppm)
Cadmium	<0,0025	0,5
Lead	0,0785	3

These results are expressed in µg/g.

Maximum value is those allowed in Recommendation XXXVI of BfR for these specific metals referred to soluble part.

**DETERMINATION OF COLOUR FASTNESS OF DYED PAPERS AND
BOARDS according to UNE-EN 646:2001**

1.- SAMPLE DESCRIPTION:

- Sample: AUTOADHESIVO CG-349

2.- MANUFACTURER:

- TORRASPAPEL, S.A.

3.- DATE AND PLACE OF TESTING:

- May 23th, 2007

Grupo LEPAMAP. Universitat de Girona.

Av. Lluís Santaló s/n. 17071 GIRONA

4.- SAMPLE TREATMENT AND RESULTS

Both faces of sample have been tried according to procedure A (long time contact) of UNE-EN 646 methodology with assayed fluids (water, acetic acid, saliva, isooctane and olive oil). Evaluation is made in accordance with EN 20105-A03 standard. Next values of colour fastness are obtained:

	Autoadhesive				
	H₂O	AcOH	Saliva	Isooctane	Oil
White	91,12	91,14	91,14	93,49	85,75
<i>Y trist.</i>	90,31	91,23	91,34	91,62	83,02
Dif. CIELAB	0,81	-0,09	-0,2	1,87	2,73
DEGREE	5	5	5	4-5	4-5

Degree 1 means bad colour fastness and degree 5 means good colour fastness.

**DETERMINATION OF THE FASTNESS OF FLUORESCENT WHITENED
PAPERS AND BOARDS, according to UNE-EN 648:2003**

1.- SAMPLE DESCRIPTION:

- Sample: AUTOADHESIVO CG-349

2.- MANUFACTURER:

- TORRASPAPEL, S.A.

3.- DATE AND PLACE OF TESTING:

May 23th, 2007

Grupo LEPAMAP. Universitat de Girona.

Av. Lluís Santaló s/n. 17071 GIRONA

4.- SAMPLE TREATMENT AND RESULTS

Both faces of sample have been tried according to procedure A (long time contact) and according to procedure B (short time contact) of UNE-EN 648 methodology, with specified fluids. Results have been evaluated by means of ultraviolet lamp with UV-A (365 nm) filters. According to procedure A, results obtained are:

Fluid	Autoadhesive
Water	2
Acetic acid	4
Saliva	2
Oil	5

The evaluation is made by comparison with papers witness prepared and treated with optical brightening FWAS, constitution number 40622. Class 1 means bad solidity and class 5 means good solidity.

There is observed a bad solidity in the water and saliva trial. The trial is repeated with the procedure B.

Procedure B:

Fluid	Autoadhesive
Water	4
Saliva	4

Now, it is observed a good solidity in these trials, so the sample can be considered apt.

DETERMINATION OF 7 SPECIFIC POLYCHLORINATED BYPHENIL (PCB).
according to UNE-EN ISO 15318: 2001

1.- SAMPLE DESCRIPTION:

- Sample: AUTOADHESIVO CG-349

2.- MANUFACTURER:

- TORRASPAPEL, S.A.

3.- DATE AND PLACE OF TESTING:

- April 13th, 2007

- CROMLAB S.L. Acer 30-32 pl.2 mód. 3
08038 BARCELONA

4.- SAMPLE TREATMENT:

Extraction of PCB and the preparation of standard solutions have been done it as method ENV 1798:1995 describes.

5.- RESULTS:

Chromatographic analysis allows detecting the presence of profiles from polychlorinated byphenyls. Detection limits for each one are:

	Congener Number	($\times 10^{-3}$ mg/kg)
2,4,4'- Trichlorobiphenyl	28	2,42
2,2',5,5'-Tetrachlorobiphenyl	52	0,61
2,2',4,5,5'-Pentachlorobiphenyl	101	n.d
2,3',4,4',5-Pentachlorobiphenyl	118	0,13
2,2',4,4',5,5'-Hexachlorobiphenyl	138	0,17
2,2',3,4,4',5'-Hexachlorobiphenyl	153	0,14
2,2',3,4,4',5,5'-Heptachlorobiphenyl	180	n.d

Total content of PCB's

$3,47 \times 10^{-3}$ mg/kg

Total content of polychlorinated biphenyl in sample AUTOADHESIVO CG-349 is lower than the maximum limit allowed (<2 mg/Kg) by EN ISO 15318 method.