

METHACRYLATE

Guide to Acryl+

Its many qualities and commercial advantages.



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GLOSSY METHACRYLATE, CATAS TEST OF MIGRATION TO FOOD



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TECHNICAL REPORT n°: 140433 / 1 del 23/04/12

Date received:	27-03-12	KRONO SYSTEM S.R.L.
Date of test:	13-04-12	VIA SALI 25
Date of issue:	23-04-12	31040 MANSUE' (TV)
Sample name:	ACRILICO-LUCIDO	ITALIA

Migration of certain elements EN 71-3:2002

Sample:
Coated panel

Analytical methods:
inductively coupled plasma optical spectrometry ICP-OES.

SOLUBLE ELEMENT		CONCENTRATION	LIMITS
Antimony	mg/kg	< 0,5	60
Arsenic	mg/kg	< 0,5	25
Barium	mg/kg	< 10	1000
Cadmium	mg/kg	< 0,5	75
Chromium	mg/kg	< 5	60
Lead	mg/kg	< 5	90
Mercury	mg/kg	< 0,5	60
Selenium	mg/kg	< 0,5	500

RESULTS:

Tested sample complies with requirements of the paragraph 4.1 of EN 71-3 standard.

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Managing Director
Dr. Andrea Galvan

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GLOSSY METHACRYLATE, CATAS SCRATCH RESISTANCE TEST



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TEST REPORT

93516 / 1

Date received: 17-05-08

Date of test: 12-06-08

Date of issue: 19-06-08

Sample name: Pannello per mobili rivestito acrilico (ABS + PMMA)

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALY

Resistance to scratching UNI 9428:1989

Test results:

Load N	Remarks
1, 1	///

Test level reached	4
--------------------	---

Notes:

- Chemical analysis of the tested material has not been carried out.

Head of Department
Dott. Franco Buljan

Managing Director
dott. Andrea Giayon

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GLOSSY METHACRYLATE, CATAS IMPACT RESISTANCE TEST



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TEST REPORT

93516 / 2

Date received: 17-05-08

Date of test: 06-06-08

Date of issue: 19-06-08

Sample name: Pannello per mobili rivestito acrilico (ABS + PMMA)

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALY

Assessment of resistance to impact ISO 4211-4:1988

Test results:

Dropping height mm	ø of impact mark mm	Evaluation	Remarks
10	/	4	slight mark with no cracking
25	/	4	slight mark with no cracking
50	/	4	slight mark with no cracking
100	/	4	slight mark with no cracking
200	4,2	4	slight mark with no cracking
400	5,3	4	slight mark with no cracking

Head of Department
Dott. Franco Bulian

Managing Director
dott. Andrea Givoni

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GLOSSY METHACRYLATE, CATAS LIGHT RESISTANCE TEST



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TEST REPORT

93516 / 5

Date received: 17-05-08
Date of test: 16-06-08
Date of issue: 19-06-08

Sample name: Pannello per mobili rivestito acrilico (ABS + PMMA)

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALY

Light fastness UNI EN 15187:2007

Apparatus: Atlas C.i. 3000
Radiation source: Xenon arc lamp
Irradiance at 420 nm: 1,25 W/mq
Inner filter: borosilicate
Outer filter: soda-lime
Black panel temperature: 55 ± 2 °C
Irradiance determination system: automatic
Relative humidity: 50 ± 10%
Blue wool standard assessment: visual
N. of observers: 2

Test results:

Exposure (hours)	Grey scale	Remarks
20	5	///

Light fastness:

Grey scale	Blue wool standard N. 6
> 4	> 6

Notes:

- Chemical analysis of the tested material was not carried out.

Head of Department
Dott. Franco Bulian

Managing Director
dott. Andrea Giavon

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GLOSSY METHACRYLATE, CATAS TEST OF RESISTANCE TO COLD LIQUIDS



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n. 0027

TEST REPORT

93516 / 7

Date received: 17-05-08

Date of test: 16-06-08

Date of issue: 19-06-08

Sample name: Pannello per mobili rivestito acrilico (ABS + PMMA)

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALY

Surface resistance to cold liquids EN 12720:1997

Staining agents	Contact time 16 h		Contact time 1 h		Contact time 10 min		Contact time 10 sec	
	Evaluation a	Evaluation b	Evaluation a	Evaluation b	Evaluation a	Evaluation b	Evaluation a	Evaluation b
Acetic acid (sol. 10%)	5	5	/	/	/	/	-	-
Acetone	1	1	-	-	-	-	1	1
Ammonia (sol. 10%)	5	5	/	/	/	/	-	-
Red wine	5	5	/	/	/	/	-	-
Citric acid (sol. 10%)	5	5	/	/	/	/	-	-
Cleansing agent	5	5	/	/	-	-	-	-
Coffee	5	5	/	/	-	-	-	-
Disinfectant	5	5	/	/	/	/	-	-
Endorsing ink	3	3	-	-	-	-	-	-
Ethanol (sol. 48 %)	5	5	/	/	/	/	-	-
Ethyl-butyl acetate (1:1)	1	1	-	-	-	-	5	5
Olive oil	5	5	/	/	/	/	-	-
Paraffin oil	5	5	/	/	-	-	-	-
Sodium carbonate (sol. 10%)	5	5	/	/	-	-	-	-
Sodium chloride (sol. 15%)	5	5	/	/	-	-	-	-
Tea	5	5	/	/	-	-	-	-
Water	5	5	/	/	-	-	-	-
Beer	5	5	/	/	/	/	-	-

Evaluations:

/ not necessary
- not required by the
UNI 10944 standard

5=no defects

4=slight change in colour or gloss

3=moderate change of colour or gloss

2=strong mark

1=structure changed / detachment

Rating a: observation under diffused light.
Rating b: observation under direct light in the viewing cabinet.

Notes:
- Chemical analysis of the tested material has not been carried out.

Rating Class according
to UNI 10944

E

Head of Department
Dott. Franco Bulian

Managing Director
dott. Andrea Givoni

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GLOSSY METHACRYLATE, CATAS TEST OF RESISTANCE OF EDGES TO WATER



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TEST REPORT

93516 / 4

Date received: 17-05-08
Date of test: 04-06-08
Date of issue: 19-06-08

Sample name: Pannello per mobili rivestito acrilico (ABS + PMMA)

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALY

Determination of edge resistance to water UNI 10460:1995

Test results:

Test period (minutes)	Remarks
15	No detachment of the edge nor swelling of the panel.
30	No detachment of the edge nor swelling of the panel.
60	No detachment of the edge nor swelling of the panel.
120	No detachment of the edge nor swelling of the panel.
240	No detachment of the edge nor swelling of the panel.

Test level reached	5
--------------------	---

Notes: Chemical analysis of the tested material has not been carried out.

Head of Department
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Managing Director
dott. Andrea Givon

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GLOSSY METHACRYLATE, CATAS TEST OF RESISTANCE TO SUDDEN TEMPERATURE CHANGES



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TEST REPORT

93516 / 6

Date received: 17-05-08

Date of test: 21-05-08

Date of issue: 19-06-08

Sample name: Pannello per mobili rivestito acrilico (ABS + PMMA)

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALY

Cold-check test UNI 9429:1989

Sample dimensions: less than the minimum required by the standard

Sample edges protection: 4 edges bordered

Test results:

Rating scale	Remarks
5	no defects after 15 cycles

Test level reached:	5
---------------------	---

Notes:

- Chemical analysis of the tested material has not been carried out.

Head of Department
Dott. Franco Bulian

Managing Director
dott. Andrea Giavon

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GLOSSY METHACRYLATE, CATAS TEST OF RESISTANCE TO DAMP-DRY HEAT



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RAPPORTO DI PROVA

102625 / 1

Ricevimento campione: 17-03-09
Esecuzione prova: 26-03-09
Emissione rapporto: 28-04-09

Denominaz. campione: ANTA IN ACRILICO NERO LUCIDO A3

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALY

Resistenza a cicli umido-secco - PTP 25:1995

Modalità

La prova consiste nel porre il campione tal quale in climi uniformi successivi per un tempo prefissato.

Le condizioni della camera di prova, concordanti con la norma UNI 10477/95, sono le seguenti:

Fase umida	23 ± 2 °C	90 ± 5 % u.r.	Durata 15 giorni
Fase secca	23 ± 2 °C	35 ± 5 % u.r.	Durata 15 giorni

Risultati della prova:

Al termine della prova non si riscontrano deformazioni apprezzabili dell'anta né difetti superficiali della finitura.

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Il Direttore
Dott. Andrea Glavon

La denominazione del campione è quella dichiarata dalla Ditta richiedente. Questo rapporto di prova riguarda il campione sottoposto a prova e solo esso. Aggiunte, cancellazioni o alterazioni non sono ammesse. Il rapporto di prova non può essere riprodotto parzialmente. Salvo diversa indicazione, il campionamento è stato effettuato dal cliente.

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MATT METHACRYLATE, CATAS SCRATCH RESISTANCE TEST

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TEST REPORT 162864 / 1		KRONO SYSTEM S.R.L. VIA SALIZES 31040 MANSUE (TV) ITALIA				
Date received:	31-07-13					
Date of test:	01-08-13					
Date of issue:	02-08-13					
Sample name:	Doors, shelves Acryl Matt (ABS + PMMA)					
Resistance to scratching UNI EN 15186:2012, met. B						
Apparatus: Taber mod. 502 Test results:						
<table border="1"> <thead> <tr> <th>Load N</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>0,8</td> <td>///</td> </tr> </tbody> </table>			Load N	Remarks	0,8	///
Load N	Remarks					
0,8	///					
Notes: - Chemical analysis of the tested material has not been carried out. - As the Customer required, conditioning of the sample was not performed.						

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Managing Director
Dr. Andrea Gilson

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MATT METHACRYLATE, CATAS LIGHT RESISTANCE TEST



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TEST REPORT

162864 / 3

Date received: 31-07-13
Date of test: 31-07-13
Date of issue: 02-08-13

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALIA

Sample name: Doors, shelves Acryl Matt (ABS + PMMA)

Light fastness UNI EN 15187:2007

Apparatus: Atlas C.I. 3000
Radiation source: Xenon arc lamp
Irradiance at 420 nm: 1,25 W/mq
Inner filter: borosilicate
Outer filter: soda-lime
Black panel temperature: 55 ± 2 °C
Irradiance determination system: automatic
Relative humidity: 50 ± 10%
Blue wool standard assessment: visual
N. of observers: 2

Test results:

Exposure (hours)	Grey scale	Remarks
20	5	///

Light fastness:

Grey scale	Blue wool standard N.
> 4	> 6

Notes:

- Chemical analysis of the tested material was not carried out.
- As the customer required, conditioning of the sample was not carried out.



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Managing Director
Dr. Rodolfo Givon

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MATT METHACRYLATE, CATAS TEST OF RESISTANCE TO TEMPERATURE CHANGES

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<p>TEST REPORT 162864 / 4</p>				<p>KRONO SYSTEM S.R.L. VIA SALI 25 31040 MANSUE' (TV) ITALIA</p>			
Date received:		31-07-13					
Date of test:		05-08-13					
Date of issue:		17-09-13					
Sample name:		Doors, shelves Acryl Matt (ABS + PMMA)					
Cold-check test UNI 9429:1989							
Sample dimensions:		315 x 315					
Sample edges protection:		4 edges					
Test results:							
Rating scale		Remarks					
5		No defects after 15 cycles.					
Test level reached:		5					
Notes:							
- Chemical analysis of the tested material has not been carried out.							

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*Managing Director
Dr. Andrea Giaron*

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MATT METHACRYLATE, CATAS TEST OF RESISTANCE TO COLD LIQUIDS



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TEST REPORT

162864 / 5

Date received: 31-07-13
Date of test: 27-08-13
Date of issue: 30-08-13

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE (TV)
ITALIA

Sample name: Doors, shelves Acryl Matt (ABS + PMMA)

Surface resistance to cold liquids EN 12720:2009

Staining agents	Contact time			
	16 h	1 h	10 min	10 sec
Acetic acid (sol. 10%)	5	/	/	-
Acetone	1	-	-	2
Ammonia (sol. 10%)	5	/	/	-
Red wine	5	/	/	-
Citric acid (sol. 10%)	5	/	/	-
Cleansing agent	5	/	-	-
Coffee	5	/	-	-
Disinfectant	5	/	/	-
Endorsing ink	2	-	-	-
Ethanol (sol. 48 %)	4	5	/	-
Ethyl-butyl acetate (1:1)	1	-	-	2
Olive oil	5	/	/	-
Paraffin oil	5	/	-	-
Sodium carbonate (sol. 10%)	5	/	-	-
Sodium chloride (sol. 15%)	5	/	-	-
Tea	5	/	-	-
Water	5	/	-	-
Bear	5	/	/	-

Evaluations:

/ not necessary
- not required by the
UNI 10944 standard

5 = no change
4 = minor change
(only visible under reflected light)
3 = moderate change
(visible from several viewing directions)
2 = significant change in colour or gloss,
slight change of structure
1 = strong change

Notes:

- Chemical analysis of the tested material has not been carried out.
- The staining agents and the contact time are according to UNI 10944:2001 standard.
- Conditioning period: from 31/07/2013 to 27/08/2013.

CLASSIFICATION NOT COVERED
BY ACCREDITATION:

Rating Class according
to UNI 10944

E

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Managing Director
Dr. Andrea Givoni

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report relates to the sample submitted for the test and no others. Additions, deletions or alterations are not permitted. This test report must always be
reproduced in its entirety. Unless otherwise stated, sampling has been carried out by the orderer.

pag. 1/1

MATT METHACRYLATE, CATAS TEST OF RESISTANCE TO DAMP HEAT



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TEST REPORT 162864 / 6		KRONO SYSTEM S.R.L. VIA SALI 25 31040 MANSUE' (TV) ITALIA															
Date received:	31-07-13																
Date of test:	01-08-13																
Date of issue:	02-08-13																
Sample name: Doors, shelves Acryl Matt (ABS + PMMA)																	
Surface resistance to wet heat EN 12721:2009																	
Test results: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 20%;">Temperature °C</th> <th style="width: 10%;">Rating</th> <th style="width: 70%;">Remarks</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">55</td> <td style="text-align: center;">5</td> <td>No visible changes.</td> </tr> <tr> <td style="text-align: center;">70</td> <td style="text-align: center;">5</td> <td>No visible changes.</td> </tr> <tr> <td style="text-align: center;">85</td> <td style="text-align: center;">4</td> <td>Slight change in gloss and colour.</td> </tr> <tr> <td style="text-align: center;">100</td> <td style="text-align: center;">1</td> <td>Strong mark with degradation of the surface.</td> </tr> </tbody> </table>			Temperature °C	Rating	Remarks	55	5	No visible changes.	70	5	No visible changes.	85	4	Slight change in gloss and colour.	100	1	Strong mark with degradation of the surface.
Temperature °C	Rating	Remarks															
55	5	No visible changes.															
70	5	No visible changes.															
85	4	Slight change in gloss and colour.															
100	1	Strong mark with degradation of the surface.															
CLASSIFICATION NOT COVERED BY ACCREDITATION: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 70%;">Performance class reached according to UNI 10944</td> <td style="width: 30%; text-align: center; font-weight: bold;">C</td> </tr> </table>			Performance class reached according to UNI 10944	C													
Performance class reached according to UNI 10944	C																
Notes: <ul style="list-style-type: none"> - Chemical analysis of the tested material has not been carried out. - The temperatures are according to UNI 10944:2001 standard. - As the Customer required, the conditioning of the sample was not performed. 																	

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Managing Director
Dr. Andrea Geronzi

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pag. 1/1

MATT METHACRYLATE, CATAS TEST OF RESISTANCE TO DRY HEAT



centro di ricerca e sviluppo e laboratorio prove
settori legno-arredo, ambiente e alimenti

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e-mail: lissone@catas.com

TEST REPORT

162864 / 7

Date received: 31-07-13
Date of test: 01-08-13
Date of issue: 02-08-13

KRONO SYSTEM S.R.L.
VIA SALI 25
31040 MANSUE' (TV)
ITALIA

Sample name: Doors, shelves Acryl Matt (ABS + PMMA)

Surface resistance to dry heat EN 12722:2009

Test results:

Temperature °C	Rating	Remarks
55	5	No visible changes.
70	5	No visible changes.
85	5	No visible changes.
120	1	Strong mark with degradation of the surface.
160	1	Strong mark with degradation of the surface.

**CLASSIFICATION NOT COVERED
BY ACCREDITATION:**

Performance class reached
according to UNI 10944

D

Notes:

- Chemical analysis of the tested material has not been carried out.
- The temperatures are according to UNI 10944:2001 standard.
- As the Customer required, the conditioning of the sample was not performed.

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*Managing Director
Dr. Antonio Geronzi*

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pag. 1/1

GLOSSY AND MATT METHACRYLATE, TEST OF EMISSION OF VOLATILE ORGANIC COMPOUNDS INDOORS



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TEST REPORT

157660 / 1

Date received: 12-04-13
Date of test: 07-05-13
Date of issue: 11-06-13

Sample name: Anta Metacrilato (ABS+ PMMA)

KRONO SYSTEM S.R.L.
VIA SALIZES
31040 MANSUE (TV)
ITALIA

Volatile organic compounds emission in test chamber - EN ISO 16000-9:2006

TESTED MATERIAL

Coated boards.

CHAMBER DESCRIPTION

The dimensions of the glass and stainless steel chamber are m 1,25 x 1,00 x 0,80.
The inlet air is cleaned by an activated carbon filter; the constancy of the air exchange is given by using an electronic Mass Flow Controller.
A fan system maintains an intensive air mixing in the chamber.

TEST CONDITIONS

SAMPLE SURFACE	1,0 m²
AIR TEMPERATURE	23±1°C
AIR HUMIDITY	50±5 % R. H.
AIR EXCHANGE RATE	1,0 m³/h
LOADING FACTOR	1 m²/(m³/h)

ANALYTICAL PROCEDURES

The determination was carried out according to ISO 16000-6:11 (active sampling on TENAX TA sorbent, thermal desorption and gaschromatography using Mass detector.
The air samples were taken at 72 hours and 28 days after the start of the test.

TEST RESULTS

The test results are reported in the attached following sheet.

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Managing Director
Jon Andrew Glavin

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pag. 1/2



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TEST REPORT **157660 / 1**
Date of issue: **11/06/13**
Sample name: **Anta Metacrilato (ABS+ PMMA)**

COMPANY	KRONOSYSTEM srl		
	Mansuè (TV)		
DATE OF TEST	07/05/2013		
VOLATILE ORGANIC COMPOUNDS	UNITS	CONCENTRATION	
		after 72 hours	after 28 days
Formaldehyde *	µg/m³	9	5
Acetaldehyde *	µg/m³	17	4
Toluene	µg/m³	2	< 2
Tetrachloroetilene	µg/m³	< 2	< 2
Ethylbenzene	µg/m³	< 2	< 2
Xilenes isomers	µg/m³	< 2	< 2
1,2,4 Trimethylenzene	µg/m³	< 2	< 2
1,4 Dichlorobenzene	µg/m³	< 2	< 2
2 Butoxyethanol	µg/m³	< 2	< 2
Styrene	µg/m³	< 2	< 2
i Propanol	µg/m³	4	< 2
Cyclohexane	µg/m³	4	< 2
Aceton	µg/m³	7	3
Hexamethylcyclotrisiloxane #	µg/m³	2	< 2
Octamethylcyclotetrasiloxane #	µg/m³	2	< 2
alpha Methylstyrene	µg/m³	3	< 2
Dodecamethylcyclohexasiloxane	µg/m³	5	< 2
Acetic acid	µg/m³	5	4
Total V. O. C. #	µg/m³	22	5

NOTES:

* determined with dinitrophenylhydrazine and HPLC method.

quantified as toluene.

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signature systems.*

Managing Director
Dr. Andrea Givoni

TEST OF EMISSION OF VOLATILE ORGANIC COMPOUNDS INDOORS, TECHNICAL ILLUSTRATION

RE: Catas test report No. 157660/1 dated 11/06/2013, Emissions of Volatile Organic Compounds, indoor method UNI EN ISO 16000-9: 2006 + UNI EN ISO 16000-6: 2011.

This test report simulates VOC emissions in the home, that is to say what contaminates the environment in which people live. The test was commissioned to Catas following the issue of new European standards on the subject of emissions in a household environment, which are much more restrictive than the previous ones. Such standards are designed to safeguard the health of consumers/users. Some European member states, including France and Germany, will begin to apply these standards in September 2013.

Test result

Without going into all the compounds measured, as values of ≤ 2 are not significant, we wish to point out that the values for certain substances considered extremely harmful to health are 10 to 160 times lower than the limits established by national law and standards or by important international enterprises such as Ikea.

Type of VOCs	Standard value or required by Ikea	Values read on Krono System door
Formaldehyde	100 microgrammes	9÷5 micrograms
Total VOCs	a) 1,000 micrograms in France b) 600 micrograms in Germany	22÷5 micrograms

20/20

ANTIBACTERIAL METHACRYLATE CERTIFICATE

SANITIZED AG

Results

Description of sample

Sample number:	2013-1201-01	Received:	08.10.2013
Business:	POLYMER	Type:	Quality control
Identification:	ABS/PMMA A4 Sheet White Matt		
Main Component:	ABS		
Minor Component:	PMMA		
Appearance:	White Matt		
Field of Application:	Furniture Components Applications		
Sanitized Products:	Antibacterial		
Declared quantity:	n.d.		

Test results of the SANITIZED-laboratory

Quantitative analysis for determination of the bacteriostatic activity:				
Method	Test point	Activity	Reduction in %	Evaluation
JIS Z 2801:2010	Staphylococcus aureus (MRSA) ATCC 33592	3,20	99,94	Good effect