

Study Report

Issue: NB1508001

August 28, 2015

To: RAYCOP JAPAN INC.

AIKEN Co., Ltd.

2-710 Amakoda, Moriyama-ku, Nagoya-shi

(Handa Office) 2-65 Hanada-cho,

Handa-shi, Aichi Prefecture

TEL (0569) 28-4738 Zip code: 475-0088

Sample type	Cleaner for bedding	Reception method	Received (2015/08/12)
Name of the sample (Trade name, etc.)	RAYCOP RS2-100 Used in Futon mattress mode		
Study name	Cedar pollen recovery performance test		
Test material	Test bedding: Futon mattress ¹		
	Bedding setup: Mattress ² , bed pad ³		
	(1) Size: 100 cm × 210 cm; Surface fabric: polyester 100%; Inner fabric: non-woven polypropylene; Filling: polyester 100%; Weight: cotton roll approximately 1.6 kg; Hard cotton: approximately 1.6 kg		
	(2) Size: 100 cm × 200 cm × 5 cm; Surface fabric: polyester 100%; Filling: polyester 100%		
(3) Size: 100 cm × 200 cm; Surface fabric: polyester 100%; Filling: polyester 100%			
(Note) Collected and brought-in samples are described as appointed by the requestor.			

Here is a report on study results of the above sample.

Test bedding	Vacuum time	Remaining amount of cedar pollen allergen (Cry j1) *					Removal rate (%)
		1	2	3	4	Mean	
Futon mattress	0 minute	12.21	6.56	10.27	12.340	10.35	-
	1 minute	0.17	0.016	0.010	0.021	0.016	99.8
	3 minutes	ND	ND	ND	ND	<0.014	99.9<
	5 minutes	ND	0.014	ND	ND	<0.014	99.9<

* Unit: µg/10 cm × 10 cm × 2 sheets ND: Less than the lower limit of quantification Lower limit of quantification = 14 ng

[Remarks]

- See Attachment for the test method and calculation method
- Analytical method: Sandwich ELISA

Study director: Minoru Sugiura



Study Report

Issue: NB1508002

August 28, 2015

To: RAYCOP JAPAN INC.

AIKEN Co., Ltd.

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TEL (0569) 28-4738 Zip code: 475-0088

Sample type	Cleaner for bedding	Reception method	Received (August12,2015)
Name of the sample (Trade name, etc.)	RAYCOP RS2-100 Used in Futon mattress mode		
Study name	Cedar pollen recovery performance test		
Test material	Comforter ¹ Environment of usage: Mattress ² , bed pad ³ (1) Size: 150 cm × 210 cm; Surface fabric: polyester 100%; Inner fabric: non-woven polypropylene; Filling: polyester 100%; Weight: Approximately 1.2 kg (2) Size: 100 cm × 200 cm × 5 cm; Surface fabric: polyester 100%; Filling: polyester 100% (3) Size: 100 cm × 200 cm; Surface fabric: polyester 100%; Filling: polyester 100%		
(Note) Collected and brought-in samples are described as appointed by the requestor.			

Here is a report on study results of the above sample.

Test bedding	Vacuum time	Remaining amount of cedar pollen allergen (Cry j1) *					Removal rate (%)
		1	2	3	4	Mean	
Comforter	0 minute	20.28	18.42	13.56	19.80	18.020	-
	1 minute	ND	ND	0.015	ND	<0.014	99.9<
	3 minutes	ND	ND	ND	ND	<0.014	99.9<
	5 minutes	ND	ND	ND	ND	<0.014	99.9<

* Unit: µg/10 cm × 10 cm × 2 sheets ND: Less than the lower limit of quantification Lower limit of quantification = 14 ng

[Remarks]

- See Attachment for the test method and calculation method.
- Analytical method: ELISA

Study director: Minoru Sugiura



Study Report

Issue: NB1508003

August 28, 2015

To: RAYCOP JAPAN INC.

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TEL (0569) 28-4738 Zip code: 475-0088

Sample type	Cleaner for bedding	Reception method	Received (August12,2015)
Name of the sample (Trade name, etc.)	RAYCOP RS2-100 Used in down comforter mode		
Study name	Cedar pollen recovery performance test		
Test material	Down comforter ¹		
	Environment of usage: mattress ² , bed pad ³		
	(1) Size: 150 cm × 210 cm; Surface fabric: polyester 100%; Lining cloths: polyester100%; Filling: down 50%; Feather 50%; Weight of filling: approximately 1.1 kg		
	(2) Size: 100 cm × 200 cm × 5 cm; Surface fabric: polyester 100%; Filling: polyester 100%		
	(3) Size: 100 cm × 200 cm; Surface fabric: polyester 100%; Filling: polyester 100%		
(Note) Collected and brought-in samples are described as appointed by the requestor.			

Here is a report on study results of the above sample.

Test bedding	Vacuum time	Remaining amount of cedar pollen allergen (Cry j1) *					Removal rate (%)
		1	2	3	4	Mean	
Down comforter	0 minute	6.64	5.73	10.06	8.14	7.64	-
	1 minute	0.022	0.017	0.020	0.017	0.019	99.8
	3 minutes	ND	ND	ND	ND	<0.014	99.8<
	5 minutes	ND	ND	ND	ND	<0.014	99.8<

* Unit: µg/10 cm × 10 cm ×x 2 sheets ND: Less than the lower limit of quantification Lower limit of quantification = 14 ng

[Remarks]

- See Attachment for the test method and calculation method.
- Analytical method: Sandwich ELISA

Study director: Minoru Sugiura



Study Report

Issue: NB1508004

August 28, 2015

To: RAYCOP JAPAN INC.

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TEL (0569) 28-4738 Zip code: 475-0088

Sample type	Cleaner for bedding	Reception method	Received (August 12, 2015)
Name of the sample (Trade name, etc.)	RAYCOP RS2-100 Used in down comforter mode		
Study name	Cedar pollen recovery performance test		
Test material	Cotton blanket ¹ Environment of usage: Mattress ² , bed pad ³ (1) Size: 140 cm × 190 cm; polyester 90%, cotton 10% (2) Size: 100 cm × 200 cm x 5 cm; Sudrface fabric: polyester 100%; Filling: polyester 100% (3) Size: 100 cm × 200 cm; Surface fabric: polyester 100%; Filling: polyester 100%		
(Note) Collected and brought-in samples are described as appointed by the requestor.			

Here is a report on study results of the above sample.

Test bedding	Vacuum time	Remaining amount of cedar pollen allergen (Cry j1) *					Removal rate (%)
		1	2	3	4	Mean	
Cotton blanket	0 minute	8.88	5.96	5.90	8.58	7.33	-
	1 minute	0.540	0.388	0.443	0.295	0.417	94.3
	3 minutes	0.064	0.092	0.120	0.068	0.086	98.8
	5 minutes	0.050	0.058	0.079	0.094	0.070	99.0

* Unit: µg/10 cm x 10 cm x 2 sheets

[Remarks]

- See Attachment for the test method and calculation method
- Analytical method: sandwich ELISA

Study director: Minoru Sugiura



Study Report

Issue: NB1508005

August 28, 2015

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TEL (0569) 28-4738 Zip code: 475-0088

Sample type	Cleaner for bedding	Reception method	Received (August 12, 2015)
Name of the sample (Trade name, etc.)	RAYCOP RS2-100 Used in down comforter mode		
Study name	Cedar pollen recovery performance test		
Test material	Blanket ¹ , Environment of usage: Mattress ² , bed pad ³ (1) Size: 140 cm × 200 cm; Pile fabric: acrylic 70%, rayon 30%; Weaving threads: polyester 100% (2) Size: 100 cm × 200 cm × 5 cm; Surface fabric: polyester 100%; Filling: polyester 100% (3) Size: 100 cm × 200 cm; Surface fabric: polyester 100%; Filling: polyester 100%		
(Note) Collected and brought-in samples are described as appointed by the requestor.			

Here is a report on study results of the above sample.

Test bedding	Vacuum time	Remaining amount of cedar pollen allergen (Cry j1) *					Removal rate (%)
		1	2	3	4	Mean	
Blanket	0 minute	6.12	5.21	5.21	4.61	5.29	-
	1 minute	0.211	0.048	0.047	0.159	0.116	97.8
	3 minutes	ND	ND	0.057	ND	<0.046	99.1<
	5 minutes	ND	0.085	0.045	ND	<0.054	99.0<

* Unit: µg/10 cm × 10 cm × 2 sheets ND: Less than the lower limit of quantification Lower limit of quantification = 42 ng

[Remarks]

- See Attachment for the test method and calculation method
- Analytical method: Sandwich ELISA

Study director: Minoru Sugiura



