



**GUI – Gesellschaft für
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mbH**

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ANALYSIS REPORT

Ihr Zeichen/ Your Code:
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Mein Zeichen/ My Code:
Datum/ Date: **2010-03-03**

Report number: **100104-01**
Customer: Joker AG/SA
Postfach 96
Industriezone 27
CH-3210 Kerzers
Test item: Cyber Clean
Contract date: 2010-01-04
Sample arrival date: 2010-01-07
Test period: 2010-01-07 to 2010-01-21

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Geschäftsführer:
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Amtsgericht Mönchengladbach HRB 12304
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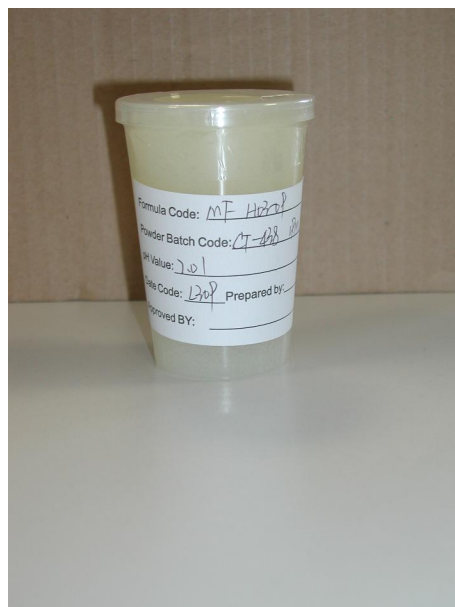
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1. Task

According to VDI 6032 the hygiene standard for ventilation technology in passenger vehicles has to be ensured. This includes the sustainable cleaning of all components which get in contact with the air. With the following measurements the qualification of the Cyber Clean product as “to be appropriate to allergic persons” regarding the cleaning of the air inlet grill in the interior of a car should be described and estimated.

2. Sampling

The test item was selected by the customer. We got 15 single samples (samples with a volume of respectively 200g) Cyber Clean for the analysis. These samples were accredited by the TÜV NORD as “suitable for allergic people”.



Pic. 1: Test medium in the condition as received from supplier

3. Materials and Methods

3.1 Cleaning of the air inlet grill of the car interior with Cyber Clean

Respectively 150g Cyber Clean were weighed out for testing the cleaning effect. Following the manufacturers' instructions, the Cyber Clean were pressed several times on the surfaces to be cleaned (in the case of the cleaning of the air inlet grills about 3-4 seconds). A wiping with Cyber Clean was avoided.

For these measurements the air inlet grills of the listed 10 different cars were used.

	type	year of construction	mileage in kilometres	air conditioning
car 1	Audi A4	2003	70000	automatic air conditioning
car 2	VW Caddy	2008	42000	automatic air conditioning
car 3	BMW X3	2004	29000	automatic air conditioning
car 4	VW Caddy	2005	120000	air conditioning
car 5	Mercedes Benz A-class	2004	77000	automatic air conditioning
car 6	Audi A6	2004	99000	automatic air conditioning
car 7	VW-Caddy	2006	110000	air conditioning
car 8	Mercedes Benz SL 280	1966	137000	air conditioning
car 9	VW Golf	2004	156000	automatic air conditioning
car 10	Audi A4	2001	193000	air conditioning



Pic. 2: Cleaning of the air inlet grill with Cyber Clean

3.2 Microbial examination of the surface with swab samples ^[A]

Swab samples of the surfaces which have to be cleaned were taken before and after the cleaning with sterile applicators with cotton bud. Therefore, the sampling surfaces were wiped off with the cotton tip of the applicators. Before that the cotton bud were moistened with sterile buffer. After that a culture medium (malt extract agar and DG18 agar for mould and CASO agar for bacteria) were wiped out with the sample applicator. For the quantitation of the comparative measurements before and after the cleaning, it was important to pay attention to sample the same area and to wipe out with the same systematic.

After the sampling, the culture dishes with malt extract agar and DG18 agar were stored at 25°C in an incubator. The viable mould units which are able for colonial growth (cfu = colony forming units) were counted after incubation for 4 to 8 days. The culture dishes with CASO agar were stored after the sampling at 32°C in an incubator. The bacteria units which are able for colonial growth (cfu = colony forming units) were counted after incubation for 2 days. The results are indicated as cfu per culture dish. A quantitative result in regard to the examined surface is not possible.

Key:
 [A] accredited method
 [nA] non-accredited method
 [F] contracting out
 [F_a] contracting out to an accredited laboratory
 [U] subcontracting to an accredited laboratory

4. Results¹

4.1 Mould concentration of the swab samples

sampling place	before cleaning [cfu/ culture dish]	after cleaning [cfu/ culture dish]
car 1	1	1
car 2	2	0
car 3	1	0
car 4	2	0
car 5	1	1
car 6	10	0
car 7	18	0
car 8	6	0
car 9	6	0
car 10	14	0

4.2 Bacteria concentration of the swab samples

sampling place	before cleaning [cfu/ culture dish]	after cleaning [cfu/ culture dish]
car 1	105	5
car 2	0	0
car 3	50	9
car 4	61	6
car 5	3	0
car 6	88	0
car 7	145	0
car 8	72	1
car 9	52	4
car 10	112	0

4.3 Total cleaning effect of Cyber Clean

	before cleaning [cfu/ culture dish]*	after cleaning [cfu/ culture dish]*	reduction of germs
mould	61	2	97%
bacteria	688	25	96%

* Sum of car 1 to 10

Mönchengladbach, 2010-03-03



(Dr. Andreas Winkens VDI)
- managing director -



(Dipl.- Ing. Frank Praetorius VDI)
- technical director -

¹ The results solely refer to the tested samples.



Assessment and recommendation¹ **to Report No. 100104-01**

Within this examination a significant cleaning effect of Cyber Clean in regard to mould and bacteria is been proven.

After the cleaning with Cyber Clean the number of bacteria on the sampling surfaces were about 96% reduced and the number of mould were about 97% reduced.

Because of this, the product is an appropriate cleaning tool for cars and a useful addition for the cleaning of air conditioning.

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¹ The assessment and recommendation are exclusively based on the presented test item.