

DEKRA Automobil GmbH Handwerkstr. 17 D-70565 Stuttgart

Autoland J. Kisielewski & J. Moranski Sp.j.
Ms. Paulina Szyja
ul. Mickiewicza 28
43-250 PAWLOWICE
POLAND

DEKRA Automobil GmbH
Laboratory for Environmental and Product Analysis
Handwerkstr. 17
70565 Stuttgart
Phone +49.711.7861-3536
Fax +49.711.7861-3534

Contact:
Thilo Kunst
Phone 0711/ 7861-3550
E-Mail thilo.kunst@dekra.com
Date Jun 07, 2022
Page 1 of 14

Test report

Order No.: 55274046

Test Report No.: PB2226476

Version 1

Client: Autoland J. Kisielewski & J. Moranski Sp.j.
Ms. Paulina Szyja
ul. Mickiewicza 28
43-250 PAWLOWICE
POLAND

Date of order: Jan 27, 2022
Sample received: Jan 27, 2022
Number of samples: 1 sample(s)
Scope of investigation: Testing of paint conditioner
Project: Autoland Ultra Wosk
Testing period: Jan 27, 2022 - Jun 07, 2022

Test result:

- see following pages –

Accredited Analytical Laboratory D-PL-11060-03-00 in Stuttgart and Halle (Saale)

1 Sample designation

Sample no.	Designation
55274046001	Autoland - Ultra Wosk

Sample no.	Sample picture
55274046001	

2 Polycarbonate compatibility

Test method:

An uncoated polycarbonate bar is mounted into the test gadget, tempered to 80 °C and covered with the tested sample. The testing is performed in three replicates.

Conditions:

- strain of the outer fibre: each 1 %
- sample amount: approx. 0,5 ml
- test duration: 48 hours at 80 °C

Test result:

Sample no.	Assessment	Test method
55274046001	no changes	QMA 1428:2013-10 ^(a)

3 Rubber compatibility according to DEKRA test specification

Test method:

Wiper materials and rubber seals for automotive applications are tempered at room temperature and covered with the test sample for 24 hours. Afterwards a visual examination of surface changes is carried out.

Test result:

Sample no.	Assessment	Test method
55274046001	no changes	QMA 1425:2010-05 ⁽ⁿ⁾

4 Lacquer compatibility according to DEKRA test specification

Test method:

Lacquered plates with 2-K-lacquering (moonland grey metallic (OPEL) and black metallic (MB 189)) and Uni lacquering (dark blue (VW Y5L) and imola red II (BMW)) are covered with the test sample and tempered at room temperature and also at 50°C for 24 hours. Afterwards a visual examination of surface changes is carried out.

Test results:

4.1 grey, metallic (OPEL moonland grey)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

4.2 black, metallic (MB 189)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

4.3 dark blue, uni (VW Y5L)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

4.4 red, uni (BMW imolared II)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

5 Metal compatibility according to DEKRA test specification

Test method:

Metals for automotive applications are tempered at room temperature and at 50°C and covered with the test sample for 24 hours.
Afterwards a visual examination of surface changes is carried out.

Test results:

5.1 Aluminium compatibility (anodized)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	sligth discoloration ¹	sligth discoloration ¹	QMA 1443:2012-02 ⁽ⁿ⁾

¹ not negatively evaluated yet

5.2 Aluminium compatibility (raw)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	sligth discoloration ¹	sligth discoloration ¹	QMA 1443:2012-02 ⁽ⁿ⁾

¹ not negatively evaluated yet

5.3 Material compatibility with copper

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	sligth discoloration ¹	QMA 1443:2012-02 ⁽ⁿ⁾

¹ not negatively evaluated yet

5.4 Material compatibility with brass

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1443:2012-02 ⁽ⁿ⁾

¹ not negatively evaluated yet

5.5 Material compatibility with steel

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1443:2012-02 ⁽ⁿ⁾

5.6 Material compatibility with stainless steel

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	sligh discoloration ¹	QMA 1443:2012-02 ⁽ⁿ⁾

¹ not negatively evaluated yet

5.7 Material compatibility with chromed steel

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1443:2012-02 ⁽ⁿ⁾

6 Plastics compatibility according to DEKRA test specification

Test method:

Various plastics and copolymeres are tempered at room temperature and also at 50°C and covered with the tested sample for 24 hours.
Afterwards a visual examination of surface changes is carried out.

Test results:

6.1 Polyethylene (PE-HD)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

6.2 Polypropylene (PP)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

6.3 Polystyrene (PS)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

6.4 Polymethyl methacrylate (PMMA)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

6.5 Acrylonitril-Butadiene-Styrene (ABS)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

6.6 Polyoxymethylene (POM)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

6.7 Polyvinyl chloride (PVC)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

6.8 Polyamide (PA)

Sample no.	Assessment		Test method
	room temperature	50°C	
55274046001	no changes	no changes	QMA 1400:2010-05 ⁽ⁿ⁾

¹ not negatively evaluated yet

7 Burning rate test

Sample no.	Result [mm/sec]	Test method
55274046001	2.9	ADR, Chapter. 2.2.41.1.8 / 42.1.8 ⁽ⁿ⁾

Annotation:

Burning rate > 2.2 mm/sec. Flame jumps over wetted zone. Flame is not stopped.

8 Solvent Screening

8.1 Content of aromatics (BTEX) with GC/FID

Sample no.	Substance	Result [% by weight]	Requirement [% by weight]	Test method
55274046001	Benzene	< 0.1	< 0.1	QMA 1416:2014-08 ^(a)
	Toluene	< 0.1	< 0.1	
	Ethylbenzene	< 0.1	< 0.1	
	Xylene	< 0.1	< 0.1	

8.2 Content of chlorinated hydrocarbons (CHC) with GC/FID

Sample no.	Substance	Result [% by weight]	Requirement [% by weight]	Test method
55274046001	Dichloromethane	< 0.1	< 0.1	QMA 1416:2014-08 ^(a)
	Trichloromethane (Chloroform)	< 0.1	< 0.1	
	1,1,1-Trichloroethane	< 0.1	< 0.1	
	Trichloroethene	< 0.1	< 0.1	
	Tetrachloroethylene (PER)	< 0.1	< 0.1	
	1,2-Dichlorobenzene	< 0.1	< 0.1	

8.3 Content of methanol with GC/FID

Sample no.	Substance	Result [% by weight]	Requirement [% by weight]	Test method
55274046001	Methanol	< 0.1	< 0.1	DEKRA test method (GC-MS) ⁽ⁿ⁾

9 Notifiable fragrances

9.1 Test results

Parameter	CAS-Nr.	Unit	Result	Limit ¹	Test method
d-Limonene	5989-27-5	%	< 0.001	0,01	QMA 1426:2014-01 ⁽ⁿ⁾
Linalool	78-70-6		< 0.001		
Benzyl alcohol	100-51-6		< 0.001		
Methylheptincarbonat / Methyl-2-ocynoate	111-12-6		< 0.001		
Citronellol	106-22-9		< 0.001		
Geraniol	106-24-1		< 0.001		
Citral	5392-40-5		< 0.001		
Cinnamalaldehyde	122-40-7		< 0.001		
Hydroxycitronellal	107-75-5		< 0.001		
Anise alcohol	105-13-5		< 0.001		
Cinnamyl alcohol	104-55-2		< 0.001		
Eugenol	97-53-0		< 0.001		
Alpha-isomethyl-ionone	127-51-5		< 0.001		
Isoeugenol	97-54-1		< 0.001		
2-(4-tert-Butylbenzyl)pro- pionaldehyde	80-54-6		< 0.001		
Coumarin	91-64-5		< 0.001		
Evernia prunastri extract	90028-68-5		< 0.001		
Amyl cinnamal	101-85-9		< 0.001		
Farnesol	4602-84-0		< 0.001		
Amylcinnamyl alcohol	104-54-1		< 0.001		
Hydroxyisohexyl-3-cyclo- hexene carboxaldehyde	31906-04-4	< 0.001			
Hexyl Cinnamal	101-86-0	< 0.001			
Benzyl benzoate	120-51-4	< 0.001			
Benzyl salicylate	118-58-1	< 0.001			
Evernia furfuracea ex- tract	90028-67-4	< 0.001			
Benzyl cinnamate	103-41-3	< 0.001			

¹ If added at concentrations exceeding 0,01 % by weight, the allergenic fragrances must be indicated on the contents list of cleaning products

9.2 Assessment

There were no substances detected with a content of ≥ 0.01 % w/w.

10 Practical Test according “Recommendation for the Quality Assessment of Paint Care Products for Motor Vehicles, Part 2: Paint Conditioners” (April 13, 2022)

10.1 Test procedure

The test is carried out on painted test sheets sized 40 cm x 50 cm with original paint (OEM quality) and paint colour “black uni”. Two different types of test sheets are prepared to cover the parameters to be tested:

Completely matted sheets (gloss 70 GE at 20°) for testing the following parameters:

- change in gloss
- refreshment of colour

Completely glossy sheets (gloss >80 GE at 20°) for testing the following parameters:

- distributability
- polishability
- surface appearance
- touchability and smear resistance
- water run-off behaviour
- wash resistance

All tests are performed in comparison to a known standard reference paint conditioner (RPC). For applying the sample, the application medium recommended by the manufacturer is used.

10.2 Application and distributability

2 +/- 0.1 g of the paint conditioner is spread thinly and evenly over the entire area of the sponge. The paint conditioner should be easily distributable. Distributability is assessed compared to the RPC.

5 Points = significantly easier than RPC

4 Points = easier than RPC

3 Points = comparable to RPC

2 Points = more difficult than RPC

1 Point = significantly more difficult than RPC

The sample is applied in a three crosswise application with 50% overlapping of the wipe paths and the same pressure with 1.5 kg weight. The sponge is moved over the test sheet with a weight without further manual pressure.

10.3 Polishability

As instructed by the manufacturer, the paint conditioner is polished out completely and without residues directly after the application using a microfiber cloth. For polishing, the microfiber cloth is moved over the surface crosswise at the same pressure with 1.5 kg weight and turned after three crosswise wiping paths. Polishing continues until no residues of the paint conditioner remain visible on the surface. The number of crosswise applications up to the full removal of the product (no residues of the paint conditioner visible on the surface anymore) is noted. The paint conditioner should be polishable without effort.

5 Points = two or more crosswise applications less than with RPC required

4 Points = one crosswise application less than with RPC required

3 Points = the same number of crosswise applications as with RPC required

2 Points = one crosswise application more than with RPC required

1 Point = two and more crosswise applications more than RPC required

10.4 Surface appearance

After the paint conditioner is applied and polished out, the product residues (e.g. emulsifiers, auxiliaries) are removed after 24 hours using demineralised water. Then, the test paint conditioner is assessed regarding cloud, veil and streak formation. There should be a uniform surface appearance. The surface appearance is assessed visually, compared to the RPC.

- 5 Points = significantly better than RPC
- 4 Points = better than RPC
- 3 Points = comparable to RPC
- 2 Points = worse than RPC
- 1 Point = significantly worse than RPC

10.5 Touchability / smear resistance

Next, cotton swabs are applied under strong pressure on the areas treated with the product and it is assessed whether traces can be seen. Touchability and smear resistance are assessed visually.

- 5 Points = good (no traces to be seen)
- 3 Points = satisfactory (weak traces to be seen)
- 1 Point = bad (strong traces to be seen)

10.6 Gloss level measurement

Gloss level measurements are carried out in the initial status, after the application of the paint conditioners and after the removal of the product residues.

- 5 Points = $\geq + 12 \Delta GU$
- 4 Points = $\geq + 9$ to $+ < 12 \Delta GU$
- 3 Points = $\geq + 6$ to $+ < 9 \Delta GU$
- 2 Points = $\geq + 3$ to $+ < 6 \Delta GU$
- 1 Point: > 0 to $+ < 3 \Delta GU$
- 0 Points: $\leq 0 \Delta GU$

10.7 Colour refreshment

The assessment of the colour refreshment of the conditioned areas is carried out immediately after the measurement of the change of gloss value before and after the removal of the product residues. The test paint conditioner should produce an intensification of the colour shade and the treated areas should appear darker. The colour refreshment is assessed visually, compared to the RPC.

- 5 Points = significantly better (darker) than RPC
- 4 Points = better (darker) than RPC
- 3 Points = comparable (darker) to RPC
- 2 Points = worse (brighter) than RPC
- 1 Point = significantly worse (brighter) than RPC

10.8 Assessment of the water run-off behaviour

Hydrophobic properties of the glossy sheets treated with the paint conditioner are assessed using the water run-off method. The faster the water runs off, the better the hydrophobic properties of the paint conditioner are rated. Test setup is applied according to IKW recommendation.

5.4 to 4 Points: ≤ 0.5 to $< 1,6$ Seconds
 4 to 3 Points: > 1.6 to < 2.7 Seconds
 3 to 2 Points: ≥ 2.7 to < 3.8 Seconds
 2 to 1 Points: ≥ 3.8 to < 4.9 Seconds
 1 to 0 Points: ≥ 4.9 to < 5.9 Seconds
 0 Points: ≥ 6 Seconds

10.9 Wash resistance (paint preservation long-term effect)

Wash resistance of the dried, polished and product residue-free test paint conditioner should be given over as many wash cycles as possible. The washing and the assessment of the water run-off behaviour are repeated on one test side until the initial value of the run-off time before treatment with the paint conditioner is reached or until a maximum of 25 washes have been carried out.

10.10 Test results

Test criterion	Points from assessment scheme (points)	Weighting (%)	weighted score (points)
Change in gloss value (before product residue removal)	4	5	0,20
Colour refreshment (before product residue removal)	4	5	0,20
Change in gloss value (after product residue removal)	4	5	0,20
Colour refreshment (after product residue removal)	4	5	0,20
Testing of the distributability	4	5	0,20
Testing of polishability	3	15	0,45
Surface appearance	5	10	0,50
Touchability and smear resistance	5	5	0,25
Assessment of the water run-off behaviour	4,8	10	0,48
Wash resistance (water run-off behaviour after the wash)	2,5	35	0,87
Total score	40,3	100	3,56

11 Assessment

Requirements for obtaining a DEKRA product label are fulfilled (except the still outstanding check of sales package and labelling).

Remarks:

The test results refer exclusively to the samples specified. The decision rule for the evaluation of conformity of test results can be found at <https://www.dekra.de/media/entscheidungsregel-bewertung-konformitaet-pruefergebnisse-gb-web.pdf>. A reproduction in excerpts of the test report must not be made without the written consent of the test laboratory. Chemical and material blanks are taken into account when determining the results. Samples will be stored for max. 6 months (for exceptions and specific storage times see QMH).

Declaration:

a = accredited test procedure, n = not accredited test procedure,

P = analysis sub-contracted, H = analysis carried out by DEKRA lab Halle, SB = analysis carried out by DEKRA lab Saarbrücken, B = analysis carried out by DEKRA lab Bretten

Stuttgart, June 07, 2022

DEKRA Automobil GmbH

Laboratory for Environmental and Product Analysis

Thilo Kunst

Project manager automotive chemicals and technical cleanliness

