

EU Ecolabel for dishwashing detergents (EU) 2017/1216 Implementation of the performance test for applications at RAL gGmbH (CB Deutschland)

1. The product must be fit for use and meet the requirements of the consumer.

2. Monofunctional and multifunctional dishwasher detergents

The monofunctional or multifunctional dishwasher detergent must achieve a cleaning performance using the recommended dosage that at least corresponds to a reference detergent in accordance with the standard test developed by the IKW (SOFW journal 06/2016).

If a multifunctional product also has rinse aid and salt functions, the effectiveness of these functions must also be verified in a test.

For the rinse aid function, the materials stainless steel, glass, plastic and porcelain must be used at minimum. The average rinse aid performance must be comparable to or better than that of the reference rinse aid.

The detergent IEC 60436 Type D¹ (dosage 20g) should be used as the reference detergent for testing the cleaning performance.

A cleaning temperature of 45°C or 50°C and a rinse temperature of 55°C should be used. The rinse aid IEC 60436 Formula III KS-C (acid)² should be used as the reference rinse aid for testing the rinse aid function.

A cleaning temperature of 45°C or 50°C and a rinse temperature of 65°C should be used.

2.1 Evaluation of the cleaning performance:

The cleaning performance is considered acceptable when it fulfils one of the following alternatives:

A) All 7 soils are tested:

A1) The tested product cleans the soiled items as well as or better than the reference product in all 4 soil classes (bleachable, persistent/alkali-sensitive, starchy/amylase-sensitive, proteinaceous, protease-sensitive) – meaning that the results for each soil class are as good as or better than the reference product for each soil class.

¹ <http://www.testmaterial.com/en/products/detergents/detergents-dw/>

² <http://www.testgewebe.de/en/products/detergents/detergents-dw/ks/>

Table 1: Examples for the test results

Soil class	Soil	Reference	Product 1	Product 2
Bleachable	Black tea	7.1	8.3	7.1
Persistent/alkali-sensitive	Milk (or milk skin)	6.2	8.4	6.3
Starchy/amylase-sensitive	Starch mix	85%	80%	90%
	Pasta	7.0	6.4	8.2
Proteinaceous protease-sensitive	Egg yolk	80%	82%	80%
	Minced meat	7.9	9.0	7.8
	Crème Brûlée	8.1	8.1	7.2

Product 1 does **not** satisfy the criteria because the results for **both** soils in soil class “starchy/amylase-sensitive” are worse than those for the reference product.

Product 2 satisfies the criteria, as in each soil class the result for at least one soil is as good as or better than for the reference product.

A2) The average value for all 7 soils for the tested product is better than the average value for the reference product. For this purpose, the results first need to be standardised to achieve a comparative basis.

Table 2: Examples for the test results

Soil class	Soil	Reference	Reference (standardised to 1 to 10)	Product 3	Product 3 (standardised to 1 to 10)
Bleachable	Black tea	7.1	7.1	7.1	7.1
Persistent/alkali-sensitive	Milk (or milk skin)	7.7	7.7	7.5	7.5
Starchy/amylase-sensitive	Starch mix	85%	8.5*	82%	8.2*
	Pasta	7.0	7.0	6.7	6.7
Proteinaceous protease-sensitive	Egg yolk	80%	8.0*	82%	8.2*
	Minced meat	7.9	7.9	9.0	9.0
	Crème Brûlée	8.1	8.1	8.2	8.2
Average			7.76		7.84

* percent value / 10

Product 3 satisfies the criteria because the average value for all soils is better than the average value for the reference product.

B) Only 4 soils are tested:

If only 4 soils are tested, these must be black tea, starch mix, egg yolk and milk (or alternatively milk skin). The tested product cleans as well as or better than the reference product for all 4 soils. Calculating an average value for the 4 results in comparison to the reference product is not permitted.

3) Rinse aid

For rinse aid, only the rinse aid performance must be demonstrated by testing at a cleaning temperature of 45°C or 50°C and a rinse temperature of 65°C. The reference rinse aid IEC 60436 Formula III KS-C (acid) should be used as reference. The detergent IEC 60436 Type D (dosage 20g) should be used as the reference detergent. The test should be carried out at a water hardness of 8-10 °d. The materials stainless steel, glass, plastic and porcelain must be used at minimum. The average rinse aid performance must be comparable to or better than that of the reference rinse aid.

Table 3: Summary

	Monofunctional dishwasher detergent	Multifunctional dishwasher detergent	Multifunctional dishwasher detergent	Rinse aid
Test criterion	Cleaning performance	Cleaning performance	Rinse performance	Rinse performance
Detergent	Test product	Test product	Test product	IEC 60436 Type D (dosage 20g)
Reference detergent	IEC 60436 Type D (dosage 20g)	IEC 60436 Type D (dosage 20g)	IEC 60436 Type D (dosage 20g)	IEC 60436 Type D (dosage 20g)
Rinse aid	-*	Is part of the test product	Is part of the test product	Test product
Reference rinse aid	-*	-*	IEC 60436 rinse aid Formula III KS-C (acid)	IEC 60436 rinse aid Formula III KS-C (acid)
Cleaning temperature	45°C or 50°C	45°C or 50°C	45°C or 50°C	45°C or 50°C
Rinse temperature	55°	55°	65°	65°
Water hardness	8 – 10 °d	Highest water hardness indicated on the sales packaging (usually 21° d)	Highest water hardness indicated on the sales packaging (usually 21° d)	8 – 10 °d
Test conditions	IKW standard test (sofwjournal 06/2016)	IKW standard test (sofwjournal 06/2016)	At minimum the materials stainless steel, glass, plastic and porcelain	At minimum the materials stainless steel, glass, plastic and porcelain
Evaluation	See 2.1	See 2.1	Rinse aid performance on average comparable to or better than reference	Rinse aid performance on average comparable to or better than reference

* According to the IKW regulation, the use of rinse aids is optional when determining the cleaning performance, but is usually not used by the test laboratories.