

FRAMEWORK FOR TESTING THE PERFORMANCE OF HAND DISHWASHING DETERGENTS

Version 1.2 of July 2011

The purpose of the performance test is to compare the ability and capacity of a test product to that of a reference product. The framework allows for a wide range of test procedures as long as the requirements below are a part of the test procedure. In the test, washing-up may be done by hand or, alternatively, a machine may be responsible for the mechanical work. The test may either involve the washing up of crockery, e.g. dishes or plates, or tests that do not involve crockery may be used.

Number of repetitions

At least five repetitions must be performed in which the test and reference products are compared with one another.

Water parameters

- The same volume of water must be used in all repetitions. The volume must be determined in litres to one decimal point.
- The water hardness, specified in °dH, and the calcium-magnesium-ratio must be known.
- The water temperature must be the same for all repetitions. It shall be measured at the start and kept constant throughout the test. However, a decrease of the water temperature during the test is acceptable, if the same temperature decrease is documented for all repetitions.

Test and reference product parameters

- The reference product shall be the one prescribed in IKW performance test “Recommendation for the quality assessment of the cleaning performance of hand dishwashing detergents” (Nitsch. C. And Hüttmann G. SÖFW-Journal, 128, 5. Pp. 11-15, 2002). The performance test can be downloaded from the IKW webpage: [http:// www.ikw.org/](http://www.ikw.org/) under the section “Information”: http://www.ikw.org/pdf/broschueren/EQ_Handgeschirr_e.pdf
- The dosage applied in the performance test is set at 2.5 millilitres of the reference detergent per 5 litres of water.
- The test detergent shall be dosed according to the dosage for normally soiled dishes recommended on the pack. If no dosage recommendation is given, it shall be dosed at 4 ml per 5 litres of water for normal hand dishwashing detergent and at 2 ml per 5 litres of water for concentrated products.

- The detergent must be mixed and completely dissolved in the water.

Soil parameters

- At least one type of soil must be used.
- The same soil must be used for all repetitions.
- The origin or chemical composition of the soil, must be described in detail and shall be in accordance with the test soils described in the IKW performance test.
- The soil must be homogenous and of even consistency.
- Enough soil for the entire test must be prepared in one batch.
- The quantity of soil applied to a substrate, e.g. plates or dishes, or to the washing-water must be the same in all repetitions and must be weighed in grams to one decimal point.

Test procedure

- The test and reference products must be made anonymous to the person(s) performing the test.
- The elements and stages included in each repetition must be decided in advance and must be identical for each repetition.
- The temperature and relative humidity of the room must be measured and kept constant in all repetitions.
- A fixed procedure for application of soil, allowing sufficient time for drying, must be determined in advance.
- A fixed procedure for manual dishwashing or removal of soil by machinery must be described in advance.
- At least five repetitions must be performed with both the test and reference product.

Assessment of cleaning capacity

- The test must be capable of generating results that provide a measure of capacity. The capacity must be expressed in grams of soil removed per five litres of water before reaching a predefined point of saturation. The point of saturation can for example be when a cleaning effect is no longer observed, when soil is floating at the surface of the water, when the foam layer is not completely covering the surface, or when there is no visible foam.

Comparison

- A positive result of a test round is obtained when the cleaning capacity is as good or better for the test product compared with the reference product.
- The test product is considered to have fulfilled the performance requirements when positive results are obtained in at least 80 % of the test rounds. As an alternative, the applicant may use statistical methods and demonstrate with a one-sided 95 % confidence range that the test product is as good as or better than the reference product.

Documentation

All tests must be reported in accordance with the following specification. The report must contain the following points:

- Description of how the test and reference products were made anonymous to the person(s) performing the test.
- Specification of the temperature and humidity in the test room and details describing how the test person(s) ensured that these conditions were kept constant in all repetitions.
- Description of the composition of the soil and of the procedure used to ensure that the soil was of a homogenous and even consistency.
- Specification of the hardness of the water, and how it was achieved, and specification of the calcium-magnesium ratio.
- Specification of the quantity of water used in the repetitions and specification of how the water temperature requirement was fulfilled.
- Specification of the results of the weighing of the hand dishwashing detergent in each repetition and description of the procedure for dissolving the product in the water.
- Description of the procedure for adding the soil to either a substrate (e.g. plates or dishes) or to the washing water.
- Specification of the results of the weighing of soil in each repetition.
- Description of the other elements and stages in each individual repetition.
- Description of how cleaning capacity was measured.
- Raw data from all repetitions stated in terms of cleaning capacity.
- Final results and, if applicable, a statistical evaluation of the data.