

Monitoring of Cleaning Processes in bedpan washers



GKE indicators for easy and efficient monitoring
Time and cost-effective
Test your cleaning process with indicators!

APPLICATION

Bedpan washers are used for cleaning and disinfection of bedpans and urine bottles in hospital wards and nursing homes. They are operated around the clock and it must therefore be monitored that the cleaning and disinfection processes run faultlessly at all times.

GKE Clean-Record® Cleaning Process Indicators (CPI) enable continuous routine monitoring of the cleaning processes.

Most programs in bedpan washers are designed to use tap water only. In some specific cases, for example, if a patient has been treated with fatty care products, a detergent can be added to the cleaning process. The programs differ considerably in temperature and regional tap water quality.

Accordingly, there is no standardised cleaning process, but each cleaning process must be evaluated individually.

In bedpan washers process faults can occur at any time. Most common are changes of the spray geometry. The nozzles may be deflected or blocked by dirt or chalk. The basket is bent after prolonged use, so that the spray jets do not hit the areas to which they were originally directed. However, the spray pattern can also be disturbed because the objects are positioned incorrectly and there are spray shadows. These disturbances do not trigger an alarm of the machine, but only become visible when monitoring with test soils or with an indicator.

By placing the self-adhesive GKE -indicators in the machine or on test bedpans or test urine bottles, the different cleaning effects can be tested at different positions. The test result does not give any direct information about the cleaning result on the used bedpans and urine bottles themselves, but provides a reference test result, which should be identical in following processes.

The GKE CPI are designed to be completely washed off with tap water without detergent. However, this is only possible if the spray strength is sufficient, the spray nozzle hits the indicator directly and the temperature is reproducible.

Limitations of spray conditions, variations in water pressure or water quality, changes in temperature, addition of different cleaning, disinfecting and/or rinsing detergents, etc., have an influence on the cleaning result. This applies both to the actual soil on the contaminated goods and to the cleaning result of the CPI.

Any process change can be made visible because the test result differs from the reference result. If several indicators are placed at different positions, graduated results (partially washed- off indicators) will be visible.

PRODUCT INFORMATION

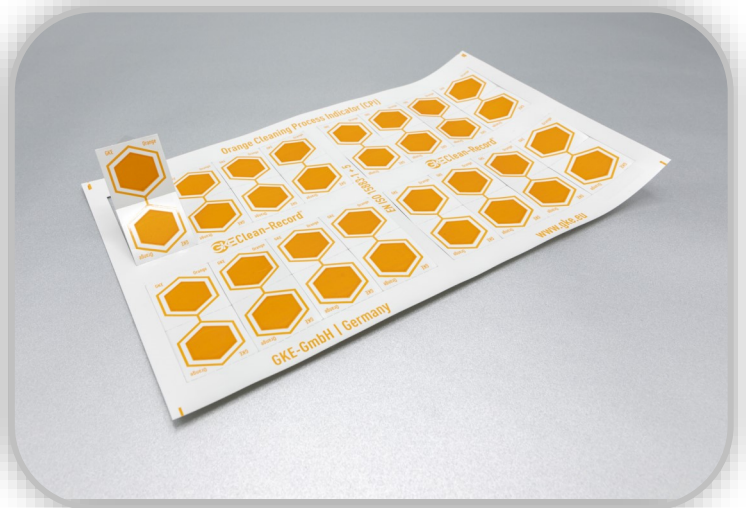
GKE CPI are synthetic test soils, which therefore have a long stability and can be stored without any loss of quality. They are free of components such as blood, which could contain pathogenic germs. The indicator consists of a temperature-stable and water-resistant plastic carrier and is provided with an adhesive back-side surface and plastic cover.

The indicators are manufactured in a rational mass production process, so that identical quality is guaranteed at all times and a very good price-performance ratio is achieved.

The wash-off characteristics can be compared with different other a test soil using a test spray method developed by GKE, see "Performance characteristics" (page 6).



Art.-No.	Product Code	Quantity/Box	
		Double indicators	Single indicators
810-000	W-CPI-O	64	128
810-001		160	320



The CPI can be adhered to the inner wall of the chamber or directly onto a bedpan or urine bottle. The indicators are subtracted after use and can be adhered on paper for documentation later on.

The self-adhesive property makes it particularly easy to use and allows easy positioning at any test object, allowing routine tests to be performed with an exceptionally low time and cost investment.

MONITORING | APPLICATION

Handling Information

Placement of indicators and documentation of results

The indicators are adhered to the surfaces of clean bedpans and/or urine bottles used as test objects for this test cycle and then pass through the cleaning process.

At the end of the program, the indicators are visually checked to see how much indicator substance could be washed-off at different test positions. In order to be able to evaluate the wash-off characteristics, the indicators are intentionally designed so that they are partly washed-off in usual processes, but not necessarily washed-off completely.

The indicators can be removed from the test objects and adhered into a paper documentation - see documentation sheet.

It is recommended that machines of identical construction and operated with identical programs are monitored regularly using the following method:

Procedure

Step 1: Determine a reference test result

Indicators are adhered to the test objects at specified test positions. Some positions, e.g. "bottom, inside" are already indicated in the form, see page 5, as placement suggestions. Other self-selected positions can be filled in manually in "additional test position" fields. It is advisable to document the test positions with photos in order to always be able to repeat the test run identically (see cover picture).

A test run with test objects and indicators is carried out. Since the test result should be used as a reference result, it is advisable to carry out the test run in a perfectly working machine, e.g. after maintenance.

The test result is documented in the form and stored as a reference document.

Step 2: Routine monitoring

All bedpan washers are tested in regular intervals, e.g. weekly, using the same procedure as the reference result (see step 1), i.e. with identical test objects and identical test positions to which the indicators are adhered.

Each result obtained during routine monitoring is compared with the reference test result. If differences are detected, this may indicate a process change. If only individual indicators deviate from the reference, this may indicate a local disturbance in the spray conditions, e.g. a dirty spray nozzle or a bent basket. If all or almost all indicators deviate from the reference, a fundamental disturbance may exist, e.g. a program error, different water quality, defect of machine (e.g. heating, pump), etc.

DOCUMENTATION

Documentation Sheet



GKE Clean-Record® CPI for bedpan washers

Hospital/Clinic: <i>St. Joseph Hospital</i>	City: <i>Newtown</i>
Department: <i>A5</i>	Date: <i>16.11.2024</i>
Manufacturer: <i>BP Washers Ltd.</i>	Type: <i>17</i>
Year of manufacture: <i>2015</i>	Machine No.: <i>4711</i>
Indicator Lot: <i>1273 2045</i>	Checked by: <i>Miller</i>

The below documented test result is

☒ a benchmark result for the above-mentioned bedpan-washer. Later on, tests are comparable in the identically constructed machines.

☐ daily ☐ weekly routine testing

Evaluation ☐ Test result = reference → OK

☐ Test result ≠ reference → not OK

Program: *Standard*

Lot-No.: *201912161*

Bedpan					
Bottom, inside, innen	On the edge, right	On the edge, left	Under the edge, right	Under the edge, left	Bottom, outside
Handle	Additional test position	Additional test position	Additional test position	Additional test position	Additional test position

Urine bottle					
Lateral, outside	Bottom, outside	Bottle neck, inside	Lateral, inside	Bottom inside	Additional test position

7010-045 EN V02

PERFORMANCE CHARACTERISTICS

The standard EN ISO 15883-5:2020 describes 8 test soils. For the cleaning of "toilet aids" a test soil is mentioned, which is composed as follows:












- bovine albumin, mucin, maize starch ("RAMS")

Mesa Germany has developed a test equipment (spray test rig) to be able to compare real soils, test soils according to the standard as well as GKE cleaning process monitoring indicators under the same test conditions.

In the spray test rig comparative tests have been carried out between the GKE CPI and "RAMS" in order to obtain a direct comparison between the GKE cleaning process indicator "L0" orange and the RAMS test soil. The test soil was coated to stainless steel plates with Mayer rod No. 5 according to EN ISO 15883-5:2020 and dried. A food dye has been added to make it more visible but has not changed the wash-off characteristics of "RAMS".

GKE CPI and RAMS in comparison:

Data based on test report 200311_1 and 200204_1

GKE CPI orange, L0 (see below)											
Exposure time	0 sec	3 sec	5 sec	10 sec	20 sec	30 sec	60 sec	2 min	3 min	5 min	10 min
throughput 1,5 /min temperature 30 °C spray angle 60°											
	RAMS test soil EN ISO 15883-5:2020 (results of protein test below)										
throughput 1,5 /min temperature 30 °C spray angle 60°	protein > 20 µg					protein < 20 µg					

The GKE CPI is optimized so that the wash-off characteristics are similar to "RAMS" results when mechanical forces are applied by a spray jet. The influence of the cleaning temperature is also comparable, so that the best test results with the indicator are only achieved with an appropriate program.

Accordingly, further rinsing processes with warm water should follow after the cold pre-rinse. With fundamentally different program designs, the wash-off characteristics changes both with the test soil and on the GKE CPI. The indicator makes comparable demands on the cleaning process as the test soil for "toilet aids", i.e. bedpans and urine bottles, described in EN ISO 15883-5:2020.

LITERATURE

References

In the journal "aseptica", volume 2018, issue 2, a study was published („Focus on bedpans - Comparison of different concepts of hygiene monitoring - A report from the field“), in which the monitoring of cleaning and disinfection processes in bedpan washers is discussed.

The publication is freely accessible and the original german version can be downloaded (PDF) at www.aseptica.com → Archiv → 2018.

The study describes various concepts for hygiene monitoring of bedpan washers.

Bedpans and urine bottles are medical devices, semicritical A, as they come into contact with mucous membrane or pathologically changed skin but do not require any particular treatment during reprocessing. Accordingly, they must be reprocessed using suitable, validated methods. By definition, validated processes must be reproducible, i.e. the process must be identical and has to be monitored.

The study addresses the fact that the use of test soils is useful for monitoring cleaning processes since process disturbances may occur that do not trigger an alarm of the machine. In contrast, the measuring instruments installed in the machine are sufficient for monitoring and ensuring the thermal disinfection process.





Designed,
developed and
made in Germany

710-016 EN V03

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