HYGIENE OF THE DENTAL UNIT

WEK

WEK Light

BR

H1 Hygiene System

Accessories



Decontamination of the process water

Protection from biofilm and limescale

Cleaning of the suction system

METASYS

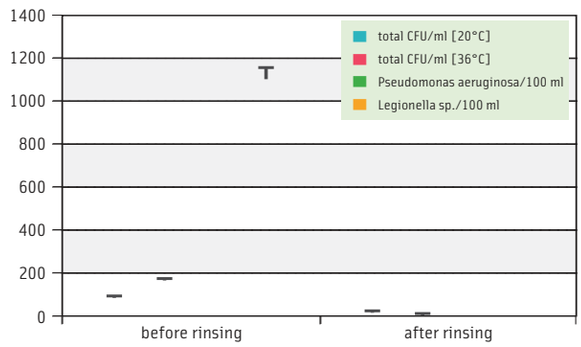
protect what you need

DECONTAMINATION OF DENTAL PROCESS WATER

1 Water as a health risk

Dental process water shows massive contamination after longer periods of stagnation: Hence the urgent recommendation to flush the water-bearing pipes after longer stagnation phases. However, this measure alone is not sufficient for the permanent provision of hygienically impeccable service water. Only a continuous decontamination system ensures that no microorganisms can settle in the hose system of the dental unit even during longer stagnation phases.

WITHOUT WEK water decontamination



WITH WEK water decontamination



METASYS commissioned the Hygiene Institute of the Ruhr Area in Marl to conduct an investigation into the microbiological situation of the service water of a dental unit. For this investigation, a water sample was taken after a longer stagnation phase once before and once after the flush had been operated twice. The same investigation was repeated 3 weeks later after the installation of a METASYS WEK with the same results.



2 No chance for legionella!

Legionella infections are one of the most frequent health risks in dental practices. The transmission takes place by inhalation of aerosols. Aerosols can cause infections, which can be very dangerous for human health. METASYS water decontamination systems can successfully counteract the risk of legionella. Even in case of very high contamination, the legionella load can be eliminated.

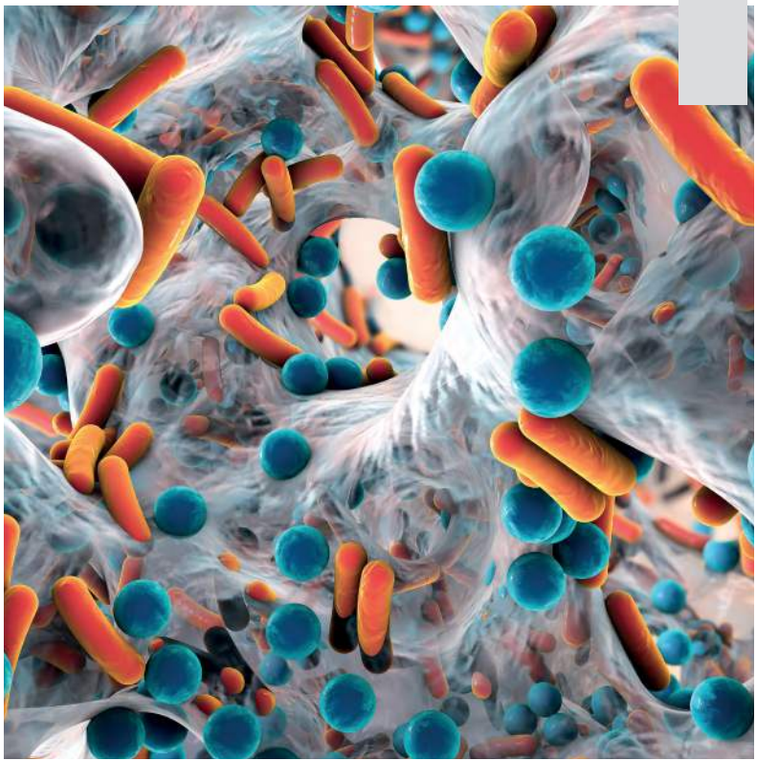
3 Problem: Limescale deposits

Calcification is a cause of considerable problems in the dental unit. Limescale deposits provide optimal conditions for the growth of germs, and limescale blockages in pipes and valves impair the function of the dental unit. METASYS water decontamination systems prevent calcification through added limescale inhibitors.

PROTECTION AGAINST BIOFILM AND CALCIFICATION

Infestation of dental treatment units with microorganisms is a serious problem. Features such as temperatures of 37°C within the piping systems, relatively long standing times and reflux effects in handpieces favour the growth of bacteria and fungi.

The large surface of the hose system as well as the plastics used in the hose lines promote the rapid growth of germs which form deposits on the walls of the hose system after only a few days. The water is contaminated by these germs and thus poses a considerable health risk. Disinfecting the water lines is essential to protect both the patient and the dental staff. In areas with very hard water, limescale in water-carrying pipes can damage the dental unit. Calcification can be effectively prevented by using METASYS water decontamination systems.



What is biofilm?

A biofilm is a multilayered coating of microorganisms that forms when microorganisms colonize surfaces. Biofilms are often perceived in everyday life as a “slimy layer” or “coating”. Extracellular polymeric substances (EPS) secreted by the microorganisms form hydrogels in combination with water. As a result, a slime-like coating is formed in which nutrients and other substances are dissolved. These EPS also give the system a stable form (hydration shell). Inside biofilms, dissolved substances are transported mainly by concentration equilibration. Nutrient transport occurs through the water flow, withi the “slimy layer”.

The biofilm contains both oxygenated (the side facing the water) and non-oxygenated areas (inner walls of the dental unit). This results in a diverse population of microorganisms. This complex structure is very difficult to destroy by means of ordinary disinfectants because they usually only temporarily damage the top boundary layer of the biofilm (shear forces rip off pieces which subsequently clog instruments).

What to do in case of biofilm?

- **First step:** Intensive decontamination and biofilm removal: METASYS BR and GREEN&CLEAN BR
- **Second step**: Permanent water decontamination: METASYS WEK / WEK Light and GREEN&CLEAN WK

WATER DISINFECTION WEK/WEK LIGHT

Permanent decontamination of dental process water.

METASYS water decontamination systems decontaminate dental process water as well as water-bearing pipes and effectively prevent limscale. Numerous consumers such as water glass fillers, syringes and turbines can be supplied with decontaminated water.

In addition, the METASYS WEK water decontamination system complies with DIN EN 1717, a regulation issued by the “Deutscher Verein für das Gas- und Wasserfach DVGW” (German Technical and Scientific Association for Gas and Water), which states that water must not be returned to the public water supply system after contact with patients or chemicals. METASYS WEK is equipped with an air gap which ensures the separation of process water from fresh water.



GREEN&CLEAN WK is a concentrate based on hydrogen peroxide (2%), which is suitable for continuous germ reduction of process water. Through the use of limescale inhibitors GREEN&CLEAN WK also protects effectively against lime deposits. 750 ml concentrate is sufficient for 63 l dental process water.





	WEK available as built-in version or with cover	WEK Light available as built-in version or with cover
Order no.	108000011	108000030 | 108000029
Power supply	230 V AC (Version with cover), 24 V AC (Built-in version)	24 V AC
Frequency	50/60 Hz	50/60 Hz
Max. current consumption	0,8 A	0,1 A
Permissible water pressure	2 - 6 bar	1 - 2,8 bar
Permissible air pressure	3,5 - 8 bar	3 - 8 bar
Operating pressure (water)	2,5 bar	2,5 bar
Operating pressure (air)	3 bar	3 bar
Max. water flow rate	1 l/min (depressurized)	6 l/min (water pressure dependent)
Mixing ratio	1:85 Standard decontamination, 1:42 Intensive decontamination	1:85 Standard decontamination
Working solution	235 ppm	235 ppm
Dimensions (H x W x D)	335 x 265 x 160 mm	modular construction
MD class	I	I

Customized versions of the WEK/WEK Light built-in versions are available for a wide range of dental units. Corresponding order numbers can be requested.

BIOFILM REMOVING DEVICE: BR

Intensive decontamination and biofilm removal

Dripping instruments or unpleasantly smelling water are usually the first signs that something is wrong with the process water lines. The most common cause is usually biofilm on the inner walls of the pipe system, which contaminates the dental process water. Biofilm is not only a source of infection but may also damage the dental unit and instruments such as handpieces and contra-angles.

METASYS water decontamination systems reduces the formation of new biofilm. Prior to installing a water decontamination system, it is recommended to remove existing biofilm from the lines. For this purpose, METASYS offers the BR biofilm removing device and the specially formulated preparation GREEN&CLEAN BR as appropriate tools.



GREEN&CLEAN BR is a ready-to-use hydrogen peroxide solution (4%) for biofilm removal, which, thanks to its pH value, breaks the hydrate shell (hydrogen bonds) of the biofilm and allows its oxidation. GREEN&CLEAN BR disinfectant penetrates to the inner walls of the dental unit tubing system and removes biofilm there as well.

The advantages of the BR biofilm removing device are convincing

The METASYS BR biofilm removing device is used to decontaminate the lines prior to the installation of a WEK or WEK Light systems. GREEN&CLEAN BR preparation removes existing biofilm in only 30 minutes.



- Easy to connect
- Easy to handle (cleaning solution is automatically pumped into the dental treatment unit).
- Short exposure time: ½ hour to max. 1 hour

H1 HYGIENE SYSTEM CLEANING AND DEODORIZATION

Risk caused by backflow

The Robert Koch Institute points out that backflow of cooling water, blood and saliva into a patient's oral cavity can occur if a suction cannula is blocked by sucked in soft tissue. Consequently, contaminated fluids from the suction tube may enter a patient's oral cavity, posing a risk of infection transmission (cf. Infection Prevention in Dentistry, Hygiene Requirements, 2006).

The METASYS H1 hygiene system effectively prevents this path of infection. Specially designed suction hoses nebulize the GREEN&CLEAN H1 preparation directly at the suction cannula in retrograde, which results in continuous cleaning of the hose systems. The fully automatic H1 hygiene system is economical in consumption and ensures optimum hygiene of the entire suction system. Daily manual cleaning of the suction system is no longer necessary, and the functionality of the suction system is prolonged.







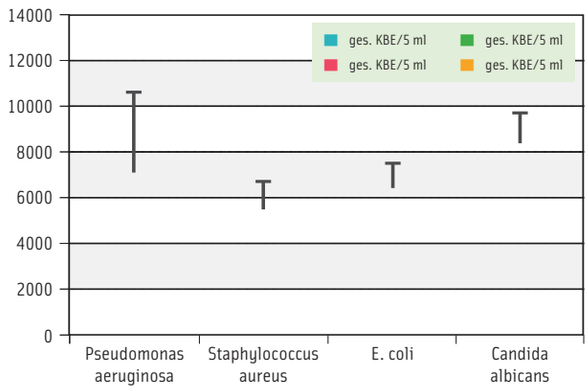
	H1 Hygiene System without hose tray
Order no.	108000002
Power supply	24 V AC
Frequency	50/60 Hz
Max. current consumption	0,45 A
Average water consumption	approx. 2.4 l/day
Pouch content	130 ml
Refill interval	approx. 6 days
Dimensions (H x W x D)	200 x 190 x 200 mm
MD class	I

H1 HYGIENE SYSTEM
PROVEN EFFICIENCY

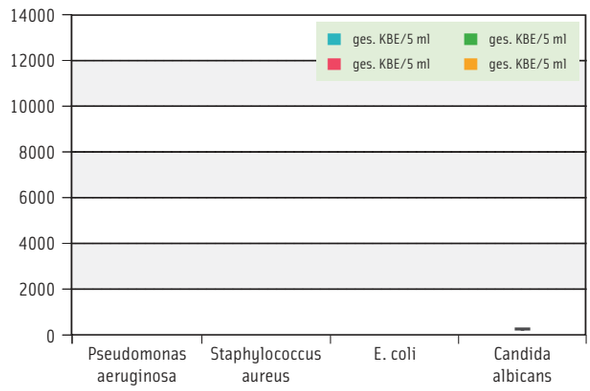
Two suction systems - one of them equipped with the METASYS H1 hygiene system - were subjected to the same test under identical conditions. A test solution containing microorganisms (10^8 CFU ml-1 each) was aspirated and the suction hoses were then rinsed with a sterile aqueous solution. The rinsing solution was collected in a sterile vessel and examined for the respective microorganisms (cf. Prof. Dr. Dr. Gräf, Institute for Medical Hygiene at the University of Erlangen-Nuremberg). A considerable reduction of microorganisms in the suction hose could be observed by using the H1 Hygiene System.

With regard to infection control, the H1 Hygiene System can therefore be said to have considerably improved suction hygiene, reducing the risk of infection for dental assistants and maintenance personnel to a minimum.

WITHOUT H1 HYGIENE SYSTEM



WITH H1 HYGIENE SYSTEM



The H1 hygiene system combines perfect cleaning with maximum hygiene. For dental practices, this means a new hygiene standards of suction. Reduced risk of infection, highest material compatibility and reduced maintenance speak for the all-round well thought-out H1 solution.



GREEN&CLEAN H1

The GREEN&CLEAN H1 cleaning preparation ensures cost-effective maintenance of the entire suction system in conjunction with the H1 hygiene system. Enzymes ensure high protein solubility, which also removes old deposits. In addition, active defoamers prevent foaming in amalgam separators and suction systems.

MAINTENANCE AND DISINFECTION







Annual service kit WEK
Order no. 120000612

3-year service kit WEK
Order no. 120000611

Annual service kit WEK Light
Order no. 120000613

Dosing aid for bottle systems
Order no. 121000014

GREEN&CLEAN WK test strips
Order no. 121000015 - WK test strips, half year supply, 25 pcs
Order no. 121000017 - WK test strips, one year supply, 50 pcs

GREEN&CLEAN WK
Order no. 122000057 - GREEN&CLEAN WK Refill kit 1 (4 x 750 ml)
Order no. 122000056 - GREEN&CLEAN WK Refill kit 2 (6 x 1000 ml)

GREEN&CLEAN BR
Order no. 122000002 - GREEN&CLEAN BR (2 x 1000 ml)

GREEN&CLEAN H1
Order no. 122000005 - GREEN&CLEAN H1 Refill kit (4 x 500 ml)

METASYS
protect what you need

METASYS Medizintechnik GmbH
METASYS logistics & collection GmbH
METASYS recycling & processing GmbH

Florianistraße 3, 6063 Rum bei Innsbruck, Austria
T +43 512 205420

www.metasys.com | info@metasys.com

EN | 2023-02 | ZK-55.236/07
Subject to printing and setting errors!