PLANET INNOVATION

BEVERAGE PRODUCTION

APPLICATION AREA

IN BEVERAGE PRODUCTION

Examples

- TANKS AND PIPELINES
- CONTAINERS, BARRELS, ETC.
- BELT CLEANING
- BELT LUBRICATION
- FERMENTATION CELLAR
- BREWHOUSE
- SURFACE CLEANING AND DISINFECTION
- MEMBRANE ANALGESICS
- FILLING SYSTEMS
- WATER TREATMENT
- PERSONAL HYGIENE

OBJECTIVE

>> Significant time and cost savings due to less effort and personnel

>> Reduction of energy costs

>> Complete and holistic disinfection

>> Reduction of the cleaning time

>> Less risk and more product and yield security

>> Reduced contact/handling of disinfectants

>> Water savings and predictable disinfection costs

>> Improvement of the water quality

>> Reduction of undesirable bacteria, fungi, spores and viruses

>> Removal of biofilms and organic contaminants without mechanical intervention

>> Enabling error-free/error-reduced production

BEVERAGE PRODUCTION

OUR SERVICE

ASSESSMENT AND DETERMINATION OF THE ACTUAL CONDITION

EVALUATION AND PROBLEM ANALYSIS OF POSSIBLE VULNERABILITIES

SOLUTION CONCEPT IN A HOLISTIC CONTEXT

>> Creation of individual cleaning plans (formulas)

>> Training of employees on documenting processes and abnormalities in a protocol

>> Regular service visits to the production site

>> 24/7 Support (by phone and in person)

>> Semi-annual employee training in the field of:

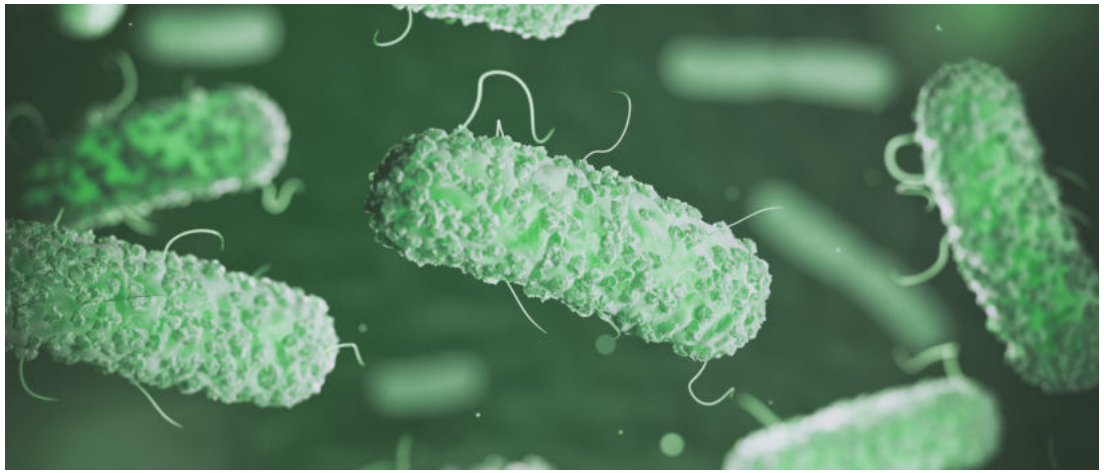
- >> Safe handling of chemicals
- >> Why clean?
- >> How do you clean properly?

BIOFILM REDUCTION AND PREVENTION BETWEEN THEORY AND PRACTICE

WHAT IS ELECTROCHEMICAL ACTIVATION?

ECA stands for Electrochemical Activation. Our Planet products are electro-chemically activated solutions produced using a specifically designed system. This involves passing a saturated, highly pure saline solution through a cell and converting the sodium chloride into hypochlorite through the process of electrolysis. Our Planet products have high level of antimicrobial efficacy.

The issue of biofilm formation plays a central role in the field of drinking water safety and food production. Complex structures composed of different microorganisms pose a significant challenge for cleaning agents and disinfectants. There is a significant risk of exposing people to a high microbial load of potentially harmful pathogens if these are not completely removed or if their development is not prevented.



BIOFILM REDUCTION AND PREVENTION BETWEEN THEORY AND PRACTICE

The project "Prevention and Remediation of Drinking Water Contamination by Hygienically Relevant Microorganisms from Biofilms in Domestic Installations" funded by the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung - BMBF) investigated the effectiveness of ECA products on biofilm removal.

Table 1 illustrates that with continuous disinfection with 0.3 mg/l (according to the German Drinking Water Ordinance, 2001) in a system with a 2-year-old biofilm, no further colony-forming units can be detected within 70 days (0 CFU/cm2).. System disinfection using 25 mg/l resulted in no colony-forming units being detected after 6 hours. (1, Page 205)

Type	Concentration [mg/l]	Application time	CFU/cm2 (after application)	TCC/cm2 (after application)
Initial values			> 10^6	> 10^7
Continuous	0,3	70 days	u.N.	4,0 x 10^5
Plant disinfection	1	6 hours	2,5 x 10^4	5,3 x 10^6
	10	6 hours	5,2 x 10^1	6,1x10^4
	25	6 hours	u.N.	u.N.

Table 1 Efficacy testing of an ECA procedure

BIOFILM REDUCTION AND PREVENTION BETWEEN THEORY AND PRACTICE

SUMMARY OF THE RESULTS OF THE CHEMICAL DISINFECTION PROCEDURES

When handled correctly a reduction of CFU/cm2 up to the detection limit is possible with all of the products tested.
However, at the concentrations tested, the TCC/cm2 could only be minimally reduced in most cases.

A reduction of TCC/cm2 up to the detection limit ".could only be achieved using chlorine from the ECA process at a concentration of 25 mg/l...". (1, page 205) Figure 1 shows a 2-year-old biofilm and the reduction achieved using the ECA product. (1, Page 209)

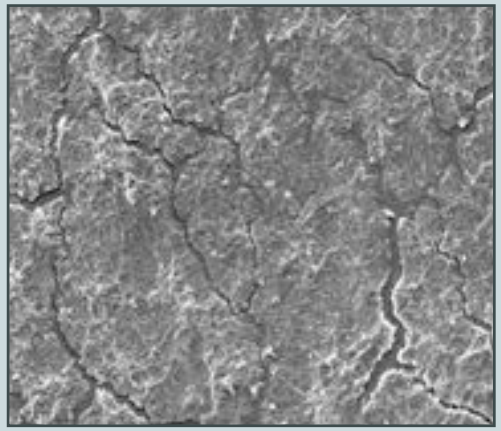
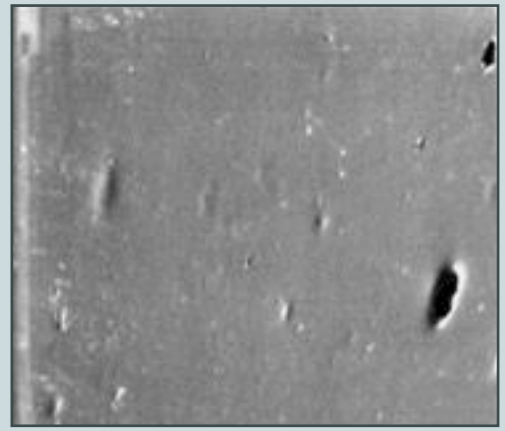
2-year-old biofilm		Biofilm after continuous treatment with 0.3 mg/l free chlorine (ECA)	

Figure 1 Scanning electron microscopic images of silicone tubing surfaces (magnification 1,000x)
Source: https://www.cleaner-production.de/fileadmin/assets/02WT0832_-_Abschlussbericht.pdf (Stand April 2021)
Publisher Umweltbundesamt Fachgebiet III 2.4 (Waste technology, Waste technology transfer)
Wörlitzer Platz 1, 06844 Dessau-Roßlau, Germany

CFU = colony-forming units
TCC = total cell count
(No difference between living and dead cells)

PLANET STRONG

LIQUID DISINFECTION WITH A SANITISING PROPERTIES

Planet Strong iis a highly effective and efficient broad-spectrum disinfectant concentrate with a water base from active chlorine released from sodium hypochlorite. Planet Strong also has sanitising properties and is very effective against biofilms. It is ideal for the beverage industry, particularly in the area of CIP cleaning/disinfection. The disinfecting component has a broad efficacy spectrum against gram-negative and gram-positive bacteria. Planet Strong demonstrates excellent results particularly with listeria, salmonella and E. coli.

It is a very effective penetrator enabling disinfection in places that are normally not accessed by conventional disinfectants (e.g. porous surfaces).

- SHORT APPLICATION TIME
- BROAD EFFICACY SPECTRUM
- FIGHTS BIOFILMS
- ELIMINATES ODOURS

PRODUCT	PRODUCT DESCRIPTION
TFA 208	• Highly alkaline cleaning agent • Hardness stabilised and controllable conductivity • Non-foaming • Can be combined with active chlorine in the application solution
TCS 301	• Strong acidic cleaning agent • Effective de-stoning agent • Effective cleaning, wetting and emulsifying properties • Can be used hot and cold • Easy to dose via conductivity • Non-foaming • Gentle on plastic seals
TXN 952	• Strengthens cleaning and dampens foaming of caustic soda solution • Can be premixed with caustic soda in the storage tank • Suitable for all water hardnesses • Prevents foam when used hot
TXN 951	• Product concentrate for the lubrication of conveyor belts • Synthetic chain lubricant • For glass and plastic bottles, cans, boxes, cardboard packaging • Excellent lubricating properties • Suitable for all water hardnesses • Low foam generation

PRODUCT	PRODUCT DESCRIPTION
TFS 102	• Acid foam cleaner • Phosphate-free • Develops a stable long-lasting foam • Removes limescale, rust, protein and residues of alkaline cleaning agents • Produces bright shiny surfaces
TMA 11	• Buffered mildly alkaline cleaning agent • Suitable for reverse osmosis, micro- and ultrafiltration systems • Highly suitable in combination with TME 5
TMA 13	• Highly alkaline cleaning agent • High content of organic complexing agents • Particularly suitable for highly pH-resistant membranes • Suitable for micro-, ultra- and nanofiltration systems as well as reverse osmosis systems • Excellent grease dissolving capacity
TMS 1	• Highly active acid detergent • Removes inorganic hardness deposits • Removes milk scale • Suitable for micro-, ultra- and nanofiltration systems as well as reverse osmosis systems
TME 5	• Enzymatic cleaning agent • High level of proteolytic enzymes • Suitable for reverse osmosis, micro- ultra- and nanofiltration systems

OVERVIEW OF THE CLEANING AGENTS AND AREAS OF APPLICATION

				alkaline	acidic		Membrane cleaner				Additive	
	Planet Strong	Planet CIP	Planet FOAM	TFA 208	TCS 301	TFS 102	TMA 11	TMA 13	TMS 1	TME 5	TXN 952	TXN 951
Brewhouse	✓	✓		✓	✓							
Fermentation cellar	✓	✓		✓	✓							
Tanks	✓	✓		✓	✓						✓	
Containers/ Barrels	✓	✓		✓							✓	
Pipelines	✓	✓		✓	✓						✓	
Boxes / Box wash	✓			✓							✓	
Belt cleaning												✓
Surface cleaning	✓		✓			✓						
Membrane installations	✓	✓					✓	✓	✓	✓		
Filling systems	✓	✓		✓							✓	
Water treatment	✓											
Personnel hygiene	✓											

CONTAINER SIZES												
Canister	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Barrel	✓	✓		✓	✓	✓	✓	✓			✓	✓
IBC	✓	✓					✓	✓	✓	✓		

CERTIFICATES

DERMATEST

PLANET STRONG

HALAL

PLANET STRONG

PLANET CIP

PLANET FOAM

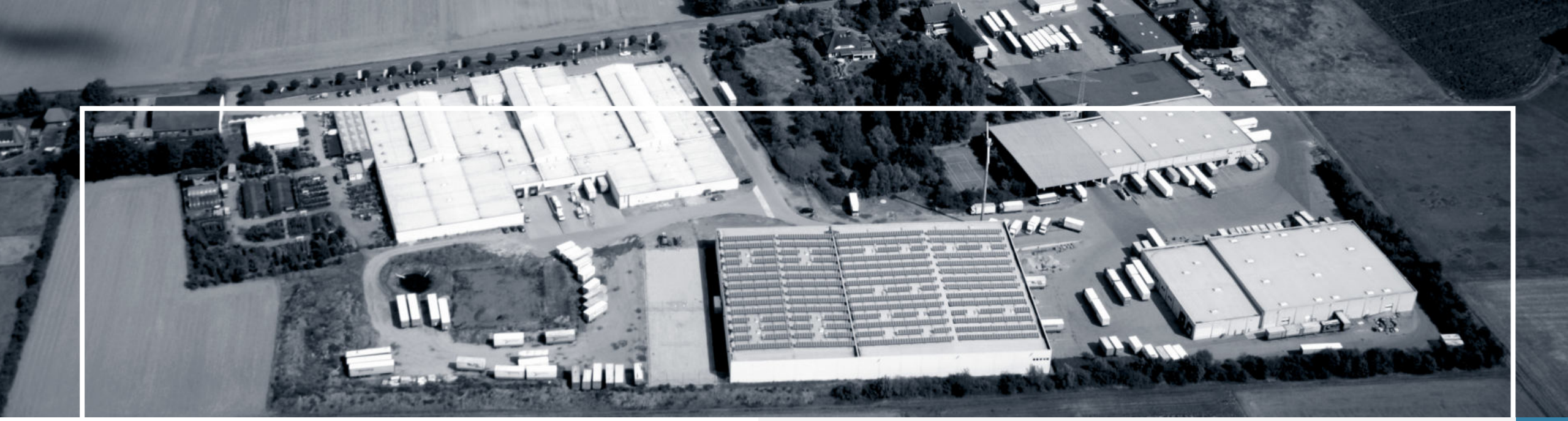
IHO

PLANET STRONG

KOSHER

TCA 400	TFA 200	TFA 207 CL	TMA 13
TCA 402	TFA 201	TFA 208	TME 5
TCA 403	TFA 202 CL	TFS 100	TMS 1
TCS 300	TFA 203 CL	TFS 101	TXN 950
TCS 301	TFA 204	TFS 102	TXN 951
TDA 800	TFA 205	TFS 203	TXN 952
	TFA 206	TMA 11	

TCA 400	TFA 200	TFA 207 CL	TMA 13
TCA 402	TFA 201	TFA 208	TME 5
TCA 403	TFA 202 CL	TFS 100	TMS 1
TCS 300	TFA 203 CL	TFS 101	TXN 950
TCS 301	TFA 204	TFS 102	TXN 951
TDA 800	TFA 205	TFS 203	TXN 952
	TFA 206	TMA 11	



GET TO KNOW US

THE PLANET INNOVATION

Planet Innovation GmbH considers itself a cross-sector system provider and, in cooperation with technical experts, develops genuine alternatives to alcohol based disinfection and cleaning products that are beneficial to the environment, humans and animals.

We offer our customers an innovative and sustainable hygiene and safety concept, as well as preventive infection control, which fulfils the requirements of present day conditions, regulations and all those involved.

www.planet-innovation.de

PLANET INNOVATION

WE'RE HERE FOR YOU!

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