

A breakthrough in the

# Break-Up of Biofilms

**Synergex™** EPA-Registered Sanitizer & Disinfectant

**Synergex is the only sanitizer and disinfectant to hold an EPA claim of penetrating and killing biofilms on food-contact surfaces** – helping you measurably improve your food safety and product quality metrics.

Effective on virtually all environmental and food contact surfaces. Synergex offers the flexibility to sanitize and disinfect every area of your plant.\*

Click on topics to learn more:



SYNERGEX PERFORMS

From improved product quality to increased operational efficiency, Synergex delivers powerful results.



THE SCIENCE OF BIOFILMS

Biofilms are a common problem – impacting food safety, product quality and operational efficiency.



STORIES OF SUCCESS

Food and beverage manufacturers put Synergex to the test.



EPA FOOD CONTACT SURFACE BIOFILM CLAIM

Ecolab worked with the EPA to develop a food contact surface biofilm claim test method.

\*See product label for complete directions for use and list of surfaces.

# SYNERGEX PERFORMS

## BIOFILM KILLING POWER: The science of helping protect food safety & product quality

✓ <b>EASY &amp; EFFECTIVE</b>	✓ <b>EPA-APPROVED SANITIZER</b>	✓ <b>SUPERIOR RESULTS</b>	✓ <b>PRODUCT QUALITY</b>
<p>Penetrates and kills biofilms on hard, non-porous food contact surfaces</p> <p><b>With No Rinse Options!</b></p>	<p>Destroys biofilms on food contact surfaces at sanitizer concentrations</p>	<p>Kills a minimum of <b>6 log<sup>10</sup></b> of <i>Listeria monocytogenes</i> &amp; <i>Pseudomonas aeruginosa</i> as a no-rinse sanitizer</p>	<p>Reduces prevalence of spoilage-causing organisms in biofilms that impact product shelf life</p>



**1<sup>st</sup>** Synergex is an EPA-approved sanitizer & disinfectant proven to kill biofilms on food contact surfaces\*

**▶ WATCH THE VIDEO** to see Synergex in action

**▶ MAKING IMPACTS THROUGHOUT YOUR OPERATION**

FOOD SAFETY

PRODUCT QUALITY

PRODUCTIVITY

HUMAN HEALTH & SAFETY

ENVIRONMENTAL RESPONSIBILITY

AIR

PUBLIC HEALTH

**▶ Learn more** about how Synergex can address your **OPERATIONAL & SAFETY ISSUES**

## OPERATIONAL EFFICIENCY: Enhances productivity & increases production capacity

**↓ Acid Wash Frequency: REDUCED**

Low pH use solution with excellent mineral solubility effectively removes soils

**↓ Production Downtime: REDUCED**

Elimination of rinse step means a shorter cycle and significant time savings

**↓ Manual Titrations: REDUCED**

Features in-line monitoring and control feature

- ✓ Compatible with 3D TRASAR™ Systems

One-stop solution: From production equipment and CIP to facility floors and surfaces, Synergex is effective across your operation

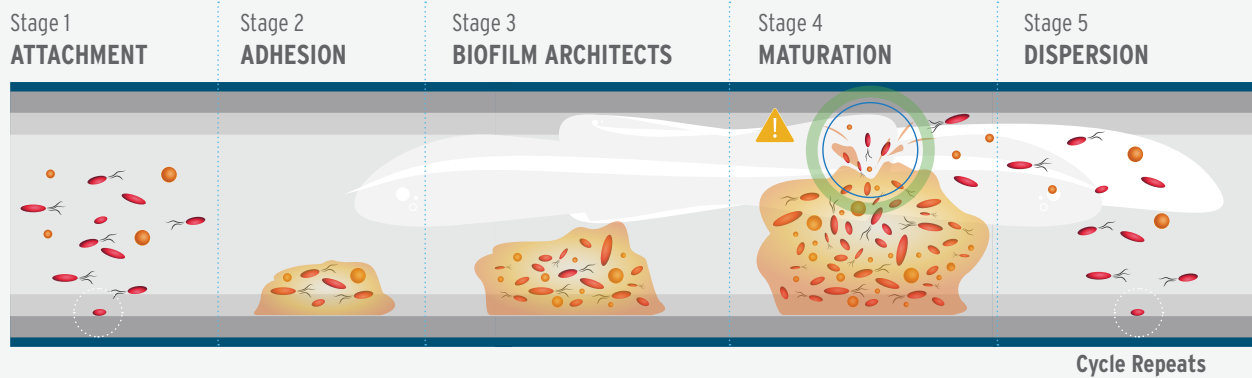
**▶ SEE EVERYWHERE** Synergex can be used

\*hard, non-porous food contact surfaces

# THE SCIENCE OF BIOFILMS

After standard cleaning, biofilm can form and potentially contaminate your products with pathogenic microorganisms or spoilage bacteria. Even when a surface appears to be clean, biofilm can be present and require the right solution to keep your products safe.

## How biofilms form & disperse:



### DEFINITION

#### **biofilm:**

a complex, structured community of bacteria and other microorganisms attached to a surface. The population of biofilm often undergoes morphological and metabolic changes, enabling microorganisms to survive in an otherwise inhospitable environment.\*

## Are biofilms impacting your product quality? Consider these factors:



### Analytics:

In addition to the use of biofilm indicator products, look for:

- Spikes in microbiological counts in rinse water, line sampling, etc.
- Increases in environmental positives
- Increased failures with ATP devices



### Sensory Issues:

Biofilm presence is often indicated by appearance as well as unpleasant textures and odors. Look for:

- A “rainbow,” brownish or slimy appearance
- Slimy or rough textures (including microabrasions)
- Sour, musty, “off” odors



### Finished Product:

Biofilms directly impact the quality of your product. Look for:

- Rapid spoilage
- Loss of shelf life
- Product micro-failures

\*Costerton et al, 1995. Ann Rev. Microbiol. 49: 711-745  
Shi and Zhu, 2009. Trends in Food Sci. and Technol. 20: 407-413

# STORIES OF SUCCESS

Synergex has helped a wide variety of food and beverage manufacturers achieve their performance objectives



FLUID DAIRY



CARBONATED BEVERAGES



CHEESE PROCESSING



BREW PROCESSING

IMPROVES QUALITY CONSISTENCY

**Goal:** Improve consistency of milk quality

**Results:**

- Over 98% passing samples
- Productivity improvements
- Cost savings

ELIMINATES FLAVOR CARRYOVER

**Goal:** Remove product flavor carryover without using a hot alkaline wash

**Results:**

- Eliminated carryover issues
- Increased productivity & profitability

DECREASES PRODUCT DOWNGRADES

**Goal:** Improve quality assurance and reduce product downgrades

**Results:**

74% improvement of vats passing microbial testing standards

ELIMINATES POST-SANITIZER RINSE & IMPROVES MICRO RESULTS

**Goal:** Eliminate chlorine sanitizing to help protect equipment while maintaining product quality

**Results:**

- Improved microbial data
- Increased productivity
- Reduced water usage



PRODUCTIVITY



COSTS



PRODUCT QUALITY



PRODUCTIVITY



PROFITABILITY



PRODUCT QUALITY



PRODUCTIVITY



WATER

[Read Full Case Study](#)

[Read Full Case Study](#)

[Read Full Case Study](#)

[Read Full Case Study](#)

# EPA FOOD CONTACT SURFACE BIOFILMS CLAIM

## The science behind developing the EPA-approved method

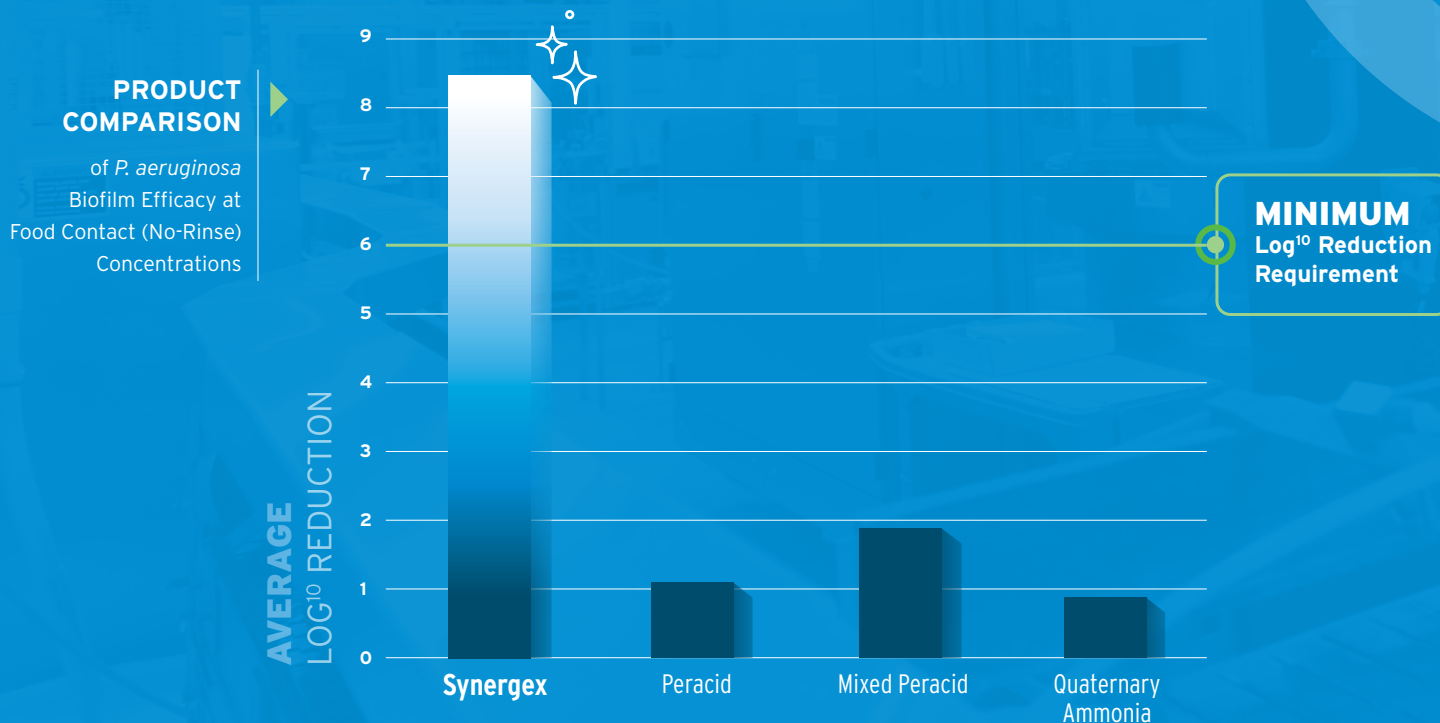
The challenge of eliminating biofilms from food contact surfaces has been a longstanding issue for the industry. However, until recently, there was no EPA-approved method for testing sanitizer efficacy against biofilms on food contact surfaces. **Ecolab partnered with the EPA to develop a food contact biofilm test method.**

[Learn more about this MONUMENTAL PARTNERSHIP](#)



## How does Synergex measure up to the new EPA test?

A minimum  $\log^{10}$  reduction requirement of 6.0 was established. Synergex **far exceeds** that threshold!



**"If biofilms are NOT REMOVED during the cleaning process,** bacteria and organisms are given a 'head start' to grow, allowing micro levels to exceed the quality threshold sooner in the food production process."

**ECOLAB RESEARCH & DEVELOPMENT**

<sup>1</sup>Synergex has demonstrated effectiveness against viruses similar to SARS-CoV-2 on hard, non-porous surfaces. Therefore, Synergex can be used against SARS-CoV-2 when used in accordance with the directions for use against Reovirus on hard, non-porous surfaces. Refer to the CDC website at [cdc.gov/coronavirus](https://www.cdc.gov/coronavirus) for additional information.