

Introduction
Phage solutions for food safety



phageguard

The future of food safety

Phages

Nature's force for balancing bacteria

Phages are biological organisms that serve to maintain the natural balance in a bacterial population. Phages outnumber bacteria by a factor of 10, making them the most common micro-organism on our planet. For reference: 1 ml seawater contains 1 billion phages.

The unique power of phages

Similar to bacteria, phages are extremely diverse, with each phage having the unique ability to target a specific bacterial species up to the level of bacterial strains. This also counts for targeting foodborne pathogens such as *Salmonella*, *Listeria* and *E. coli*.

Creating the future of food safety

Since 2005, Phageguard set out to develop and produce different phage products which specifically target *Salmonella*, *Listeria* or *E. coli* O157. This allows food processors to achieve maximum effectiveness against specific foodborne pathogens. Phages do not influence any of the characteristics of the treated product. This organic and non-chemical interference is transforming the future for food safety.





Anti-*Salmonella* phage solution Phageguard S



PGS

Our phage solution against *Salmonella*, Phageguard S (PGS), is widely used in the meat and poultry industry. It effectively reduces *Salmonella* levels without affecting the final product's quality.



Effective against all prevalent *Salmonella* serovars



Harmless to humans, animals and plants



No wastewater issues



No effect on color, taste, texture and odor of the final product



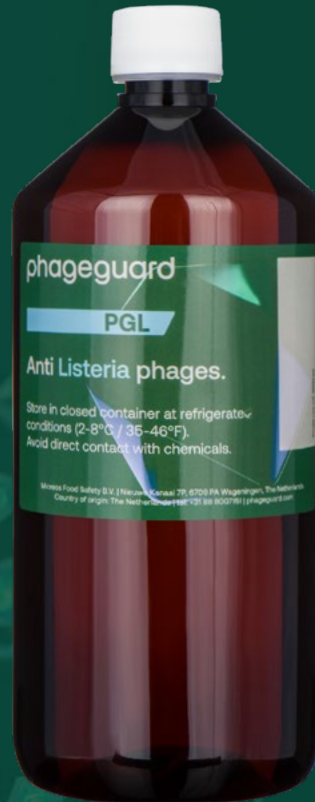
Non-corrosive to production equipment



Can be contributed to a multi-hurdle, multi-technology approach



Anti-*Listeria* phage solution
Phageguard L



PGL

Protect your products and production equipment from *Listeria* with our phage solution, Phageguard L (PGL). Over the years, PGL became a popular tool for seafood and dairy processors worldwide.



Proven effectiveness on salmon, deli meats and more



Harmless to humans, animals and plants



No wastewater issues



No effect on color, taste, texture and odor of the final product



Non-corrosive to production equipment



Easily applicable on FCS, stainless steel and biofilms



Anti-*E. coli* phage solution
Phageguard E



PGE

Our anti- *E.coli* phage solution is effective against the well-known *E. coli* O157. In addition to Phageguard E (PGE), Phageguard provides a customized market solution for preharvest animal hides, known as Phageguard E Hides (PGE Hides).



Effective against the toxic-producing *E.coli* O157



Harmless to humans, animals and plants



No wastewater issues



No effect on color, taste, texture and odor of the final product



Non-corrosive to production equipment



Specified market solution available for preharvest animal hides

Approvals

Phageguard received approvals from government institutes worldwide. Over the past couple of decades, the efficacy of Phageguard's products have been consistently demonstrated through trials conducted with some of the most reputable universities and research laboratories. This provides our customers with scientifically proven solutions for care-free processing.

PGS

Australia / New Zealand, FSANZ processing aid (Phageguard S) - 2012

USA, FDA GRAS (GRN 468) - 2013

Israel, Food Control Services Ministry of Health: approved processing aid – 2014

USA, USDA approved processing aid (Directive 7120.1) – 2016

India, FSSI: Food contact surfaces and processing aid - 2021

Egypt, National Authority of Food Safety: Approved use in poultry production - 2023

PGL

USA, FDA GRAS (GRN 218) - 2006

USA, USDA approved processing aid (Directive 7120.1) – 2007

The Netherlands, Ministry of Health: Processing aid – 2010

Australia/ New Zealand. FSANZ processing aid (Phageguard Listex™) – 2012

Israel, Food Control Services Ministry of Health: approved processing aid – 2014

EU: Phageguard Listex™ is safe for use (EFSA) – 2016

PGE

USA, FDA GRAS (GRN 757) - 2018

USA, USDA approved processing aid (Directive 7120.1) – 2018

