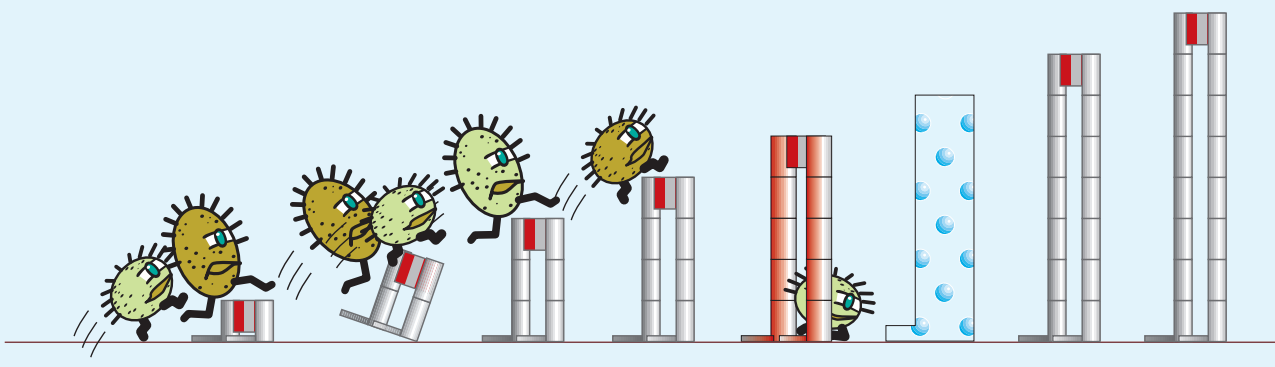


# HabaGUARD®

## Conveyor belts containing an antimicrobial additive

Habasit – Solutions in motion



The increasing number of foodstuff recalls and food poisoning cases due to microbiological, physical, or chemical contamination emphasizes the importance of reliable hygiene standards.

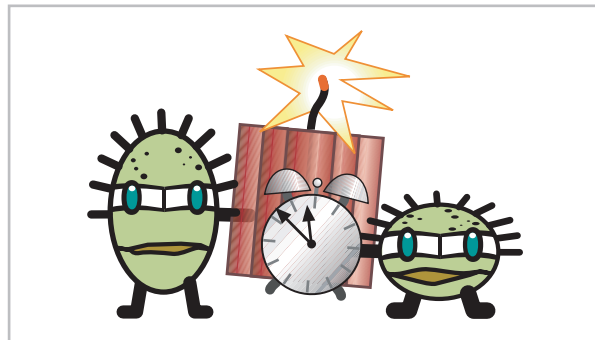
30% of food alert notifications and 16% of food information notifications in 2002 were caused by bacteria and other microorganisms. The result is that these products will either not reach the market or are being withdrawn from it. (Source: *Rapid Alert System for Food and Feed Report for the Year 2002*)

With machinery and processes already improved to higher safety standards, the focus now lies on improving single elements such as conveyor belts. Habasit, the world market leader in conveyor belting, provides the means for intelligent solutions that focus on hygiene in the food industry.

## Biofilms: A time bomb in food plants

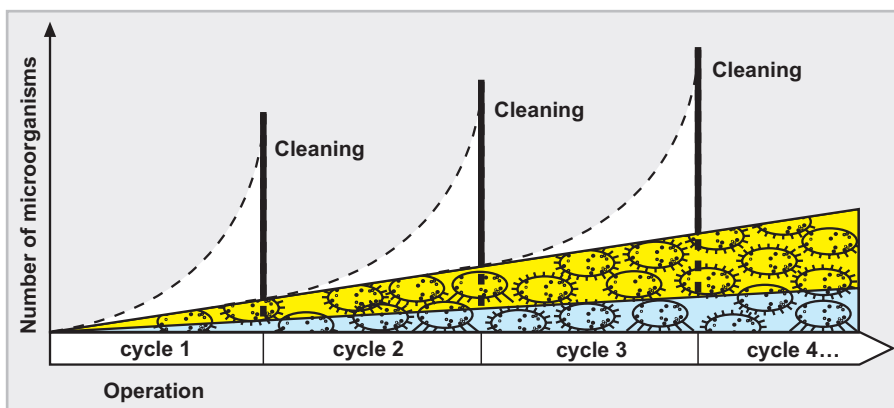
Biofilms on food contact surfaces represent a severe danger for your business. They can influence the shelf life and are often the source of colonies of pathogenic bacteria.

Biofilm formation takes place when bacteria adhere to surfaces, surround themselves with a protective layer and grow into a network of microcolonies and water channels. The pathogens are protected within the biofilm and can not be dislodged by conventional cleaning methods. As research has shown, extensive bacterial biofilm development occurs on surfaces with irregularities such as roughness, crevices and pits.



Considering that all surfaces are subject to mechanical damage over time, there is an increasing risk of contamination by microorganisms. Once bacteria and biofilms have built up, regular cleaning becomes less effective and proper sanitation needs more strenuous efforts. HabaGUARD® belts delay biofilm formation.

### Even the best cleaning is never perfect



**Less build-up of bacteria with HabaGUARD® food belts – delays formation of biofilm**

- Traditional conveyor belt
- HabaGUARD® food conveyor belt

The food industry is striving to improve the quality and shelf life of food products as the industry's awareness of responsibility and liability increases. This has led to the implementation of tougher hygiene and quality management systems, such as HACCP and Good Manufacturing Practices (GMP). Furthermore, food processors are searching for additional tools to increase the safety of their products.

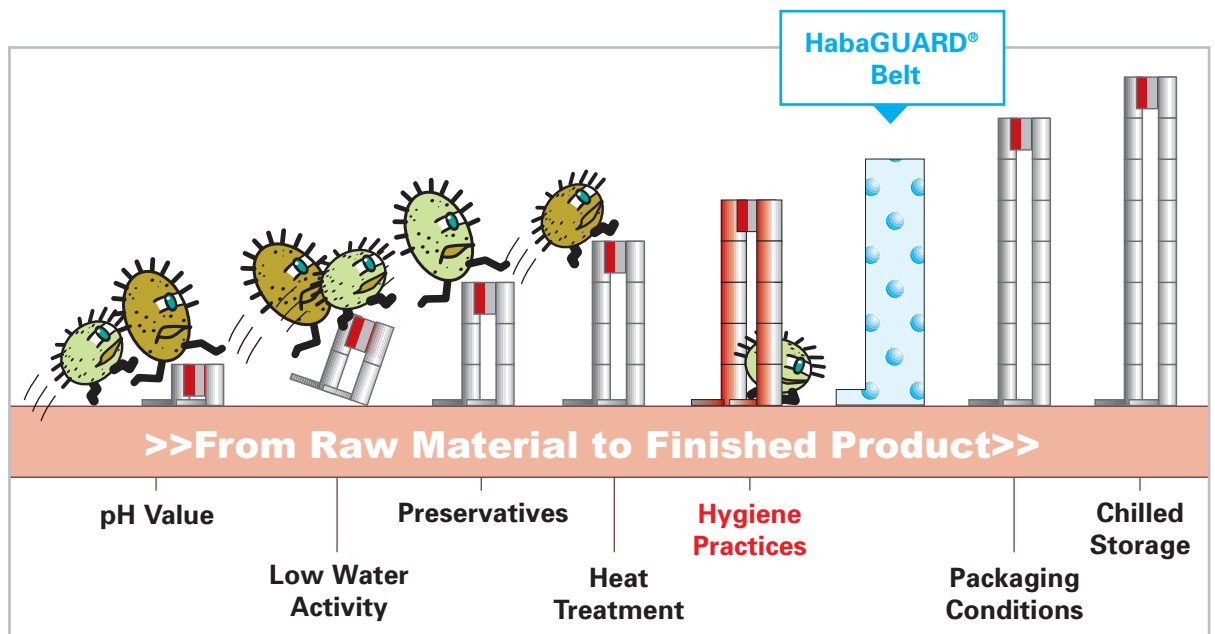
The development of multiple safety hurdles to control food-borne pathogens and spoilage microorganisms along the food chain from farm to table is a top priority for the food industry. Conveyor and processing belts are often in direct contact with food and therefore are a critical element in the food processing chain. With HabaGUARD® belts, Habasit offers an additional hurdle to help prevent the growth of microorganisms.

**An additional hurdle for microorganisms.**

**HabaGUARD® food conveyor belts:**

**The intelligent solution to support the food processing industry.**

## Main hurdles with HabaGUARD® belts



**Are you doing all you can?**

**General Remark**

*The use of HabaGUARD® food conveyor and processing belts (containing an antimicrobial additive) is an important and precautionary step in the prevention of microbial growth. Adhering to proper cleaning procedures is always essential. This product does not protect users or others against food borne or disease causing bacteria.*

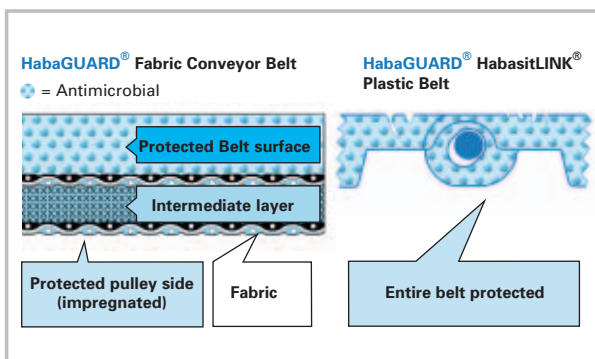
**Trademark**

HabaGUARD® is a registered trademark of Habasit AG, Switzerland

## HabaGUARD® food conveyor belts are designed to complement existing hygiene and safety procedures in food plants.

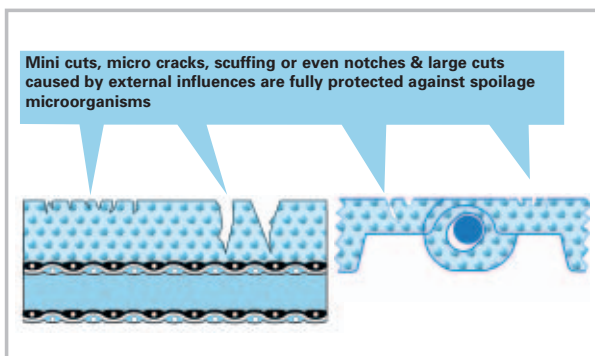
Daily use and cleaning cause mechanical stress and damage to belt surfaces. This leads to increased retention of soil and growth of microorganisms, as not even optimal cleaning intervals nor a sophisticated HACCP concept can guarantee effective cleaning.

HabaGUARD® food conveyor belts contain an additive that protects the entire belt throughout its service life against microorganisms, especially in microcracks and cuts that are inaccessible to cleaning procedures.



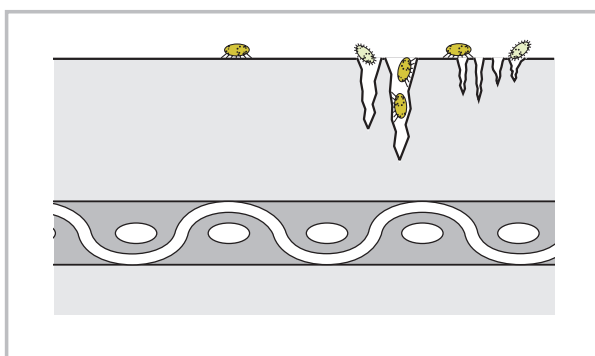
### Entire protection

With HabaGUARD® belts, all cover coating and running-side impregnation materials contain the antimicrobial additive. The HabaGUARD® additive causes no changes in the belt's physical properties Joining, Flexibility, Temperature range, Strength Ratings, Chemical resistance, Color or Surface properties.



### Entire protection in cuts and cracks

Microorganisms are controlled both on the complete belt surface as well as in the cuts and cracks that appear during belt use.



### No protection in traditional conveyor belts

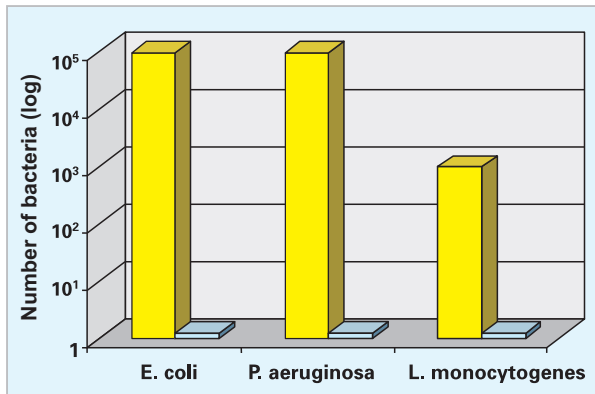
The cuts, cracks and abraded surfaces on belts that do not feature the antimicrobial additive offer a perfect breeding ground for all kinds of microorganisms.

### General Remark

*The use of HabaGUARD® food conveyor and processing belts is an important and precautionary step in the prevention of microbial growth. Adhering to proper cleaning procedures is always essential.*

*HabaGUARD® food conveyor belts fulfill relevant regulations for food contact use in the following European countries: Switzerland, Great Britain, Austria, Germany, Denmark, Norway and Sweden.*

# HabaGUARD® proof of effectiveness

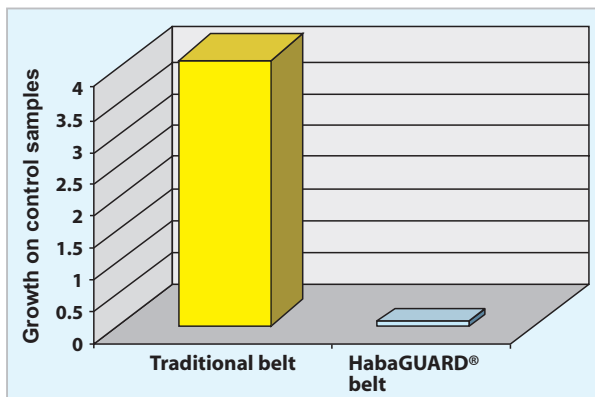


## Film Adherence Test

HabaGUARD® conveyor belts were compared to traditional food conveyor belts in a Film Adherence Test. A controlled amount of test organisms was applied to each belt surface; after 24 hours the remaining microorganisms were counted.

*Tested by TNO Netherlands*

■ Traditional conveyor belt  
■ HabaGUARD® food conveyor belt



## Mould Test

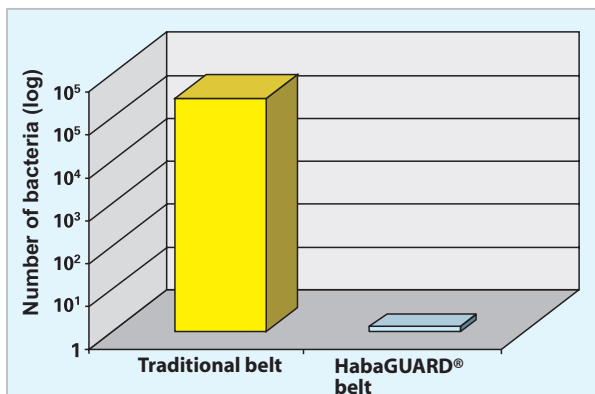
The mould test accc. ASTM G-2196 has been executed by NAMSA-Labs (USA).

The duration: 28 days

Evaluation: growth of mould on belt surface

0 = no growth                      3 = medium (30–60%)  
1 = traces (< 10%)              4 = strong (60–100%)  
2 = low (10–30%)

■ Traditional conveyor belt  
■ HabaGUARD® food conveyor belt



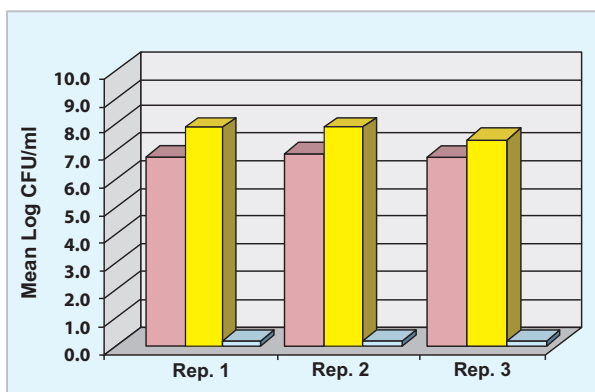
## Biofilm build-up after 24 hours

Laboratory testing using a special biofilm reactor showed less biofilm build-up on HabaGUARD® belts compared to standard conveyor belts.

*Test organism: E. Coli*

*Tested by TNO Netherlands*

■ Traditional conveyor belt  
■ HabaGUARD® food conveyor belt



## Durability of antimicrobial additive

A HabaGUARD® belt was tested for 1 year in a typical meat processing plant. After 12 months in operation it still showed the same efficacy against microorganisms.

*Durability results: L. monocytogenes*

*Tested by North Carolina State University USA*

■ Original count  
■ Traditional conveyor belt  
■ HabaGUARD® food conveyor belt



## Compliance with regulations

HabaGUARD® was developed especially for the Foodindustry. All products comply with FDA regulations and with the general safety requirements of article 2 of directive 89/109/EEC in applicable countries. Compliance with European regulations has been certified by RCC Registration and Consulting Division, 4452 Itingen, CH.

The antimicrobial additive in HabaGUARD® is approved by EPA (US authority for environmental protection) for food contact applications.

## Other markets and the use of Habaguard® food belts

Legal requirements for products containing antimicrobials are specific to each geographical region. Therefore Habasit offers different ranges of products which comply fully with the regulations of various geographical regions. For details, please ask your Habasit partner.

**RCC certification for compliance with national legislations**

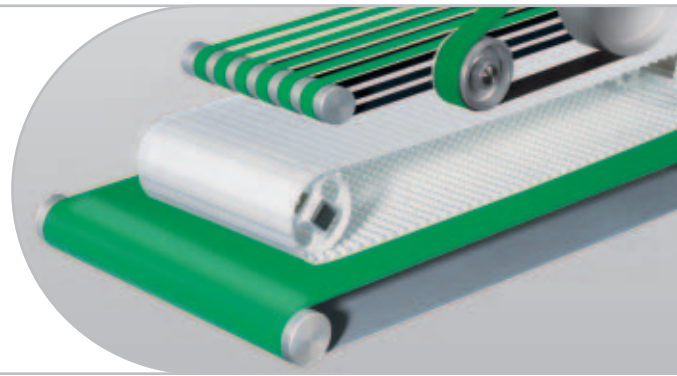
## Summary

### Customer benefits of HabaGUARD® food belts

- contain an additive that is registered with the EAP and in compliance with FDA and USDA regulations
- Have a broad efficacy against microorganisms
- provide an additional hurdle to contamination by microorganisms
- prevent growth of moulds
- delay formation of biofilms
- avoid build-up of bacteria in areas that are unattainable or difficult to reach using common cleaning procedures
- the additive remains affective after repeated cleanings and normal wear throughout the operating life of the belt

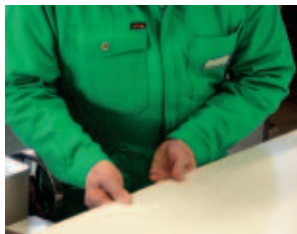
# The Habasit Solution

**At Habasit, we listen. We innovate.  
And we deliver integrated belting  
solutions – right first time.**



## Customer first

Habasit understands that our success depends on the success of our customers. That's why we offer solutions, not just products; partnership, not just sales. Our innovative belting solutions are tailored exactly to specific needs. We guarantee best value for money in every application. Since its foundation in 1946, Habasit has proven this understanding of customer needs. That's why we are the No. 1 in belting. Worldwide.



## Product range

Habasit offers the largest selection of fabric-based conveyor belts and plastic modular belts in the industry. Our answer to any request is nothing less than a specific, tailor-made solution.

### Fabric-based conveyor & processing belts

Plastic modular belts

Power transmission belts

Machine tapes

Seamless belts

Round belts

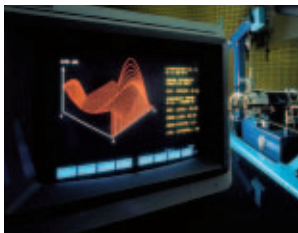
Timing belts

Plastic chains

Auxiliaries (e.g. profiles, tools)

## Innovation / R&D

Habasit is strongly committed to the continuous development of innovative, value-added solutions. More than 3% of our staff is dedicated exclusively to R&D; the annual investment in this area exceeds 8% of the turnover.



## Global network

### Facts & figures

Founded	1946
Turnover 2004	CHF 450 million
Sales to market	4.5 million m <sup>2</sup>
Employees	2224
Production plants	12
Affiliated companies	26
Representatives	in over 50 countries
Service centers	over 250 globally

## Services & guarantees

Our extensive organization is prepared to support you anywhere in the world. Engineering and emergency assistance, quotes and order status are just a phone call away. Wherever you are. Whenever you need us.

## Quality

Highest quality standards are found not only in products, but also in our employees' daily work process. Based on a worldwide TQM approach, Habasit started very early to implement a quality system and was certified already in 1987 according to ISO 9001 / EN 29001. In 1996 Habasit was certified according to ISO 9001:1994. Since then we undergo periodically quality audits performed by an independent certification body. In the year 2002 we achieved certification according to the revised standard ISO 9001:2000.

