

**CHIORINO**<sup>®</sup>  
1906

*Passion for belting*

Your partner  
for food safety

**HPAM**<sup>®</sup>

AntiMicrobial food belts



EC 1935/2004 & FDA  
Certified Food Compliance



## **HP<sup>AM</sup>** AntiMicrobial food belts

Chiorino **HP<sup>AM</sup> Antimicrobial** conveyor and process belts represent a breakthrough for food safety & hygiene.

The HP<sup>AM</sup> Antimicrobial belts combine the advanced **antimicrobial bacteriostatic action** with the premium features of the HP<sup>AM</sup> line. The bacteriostatic action **prevents bacteria build-up** on the belt surface by breaking the cycle of biofilm creation.

HP<sup>AM</sup> Antimicrobial belts **do not contain biocides** (eg. metallic ions) that can migrate and contaminate the food.

They fully comply with **EU and international food regulations**.

HP<sup>AM</sup> Antimicrobial belts **prevent product recalls** and **minimize the risks** on non-compliance during food safety inspections and audits by authorities.



### Stop contamination and product recalls!

*Food industry is continuously establishing stricter hygiene standards to prevent contaminations by microorganisms that may cause serious foodborne diseases and costly product recalls.*

*As the uncontrolled biofilm growth on a conveyor surface is a severe danger, Chiorino has developed a solution that minimizes this risk: the **HP<sup>AM</sup> Antimicrobial belts** reduce by **>99%** the bacterial growth of most dangerous foodborne pathogens.*



# Antimicrobial tests

Measurement of antibacterial activity on plastics and other non-porous surfaces.

*Test performed by external independent Laboratories.*

BACTERIA	Antibacterial activity <sup>1</sup> ufc/cm <sup>2</sup>	Reduction %	Test method
Staphylococcus aureus ATCC 6538P	2,63	99,77%	ISO 22196:2011
Escherichia coli ATCC 8739	3,54	99,97%	
Salmonella enterica ATCC 70072	3,54	99,73%	
Listeria monocytogenes CECT 5672	3,54	98,87%	

<sup>1</sup>As reported by ISO22196:2011 and JAS 2801:2010 a material has an antibacterial attitude if its antibacterial activity is  $\geq 2,00$

FUNGI	Antifungi action rate <sup>2</sup>	Note	Test method
Aspergillus brasiliensis ATCC9642	1	Belt remained free of fungal growth	ASTM G-21-15
Talaromyces pinophilum ATCC 11797	1		
Chaetomium globosum ATCC 6205	1		
Trichoderma virens ATCC9645	1		
Aereobasidium pullulans ATCC 15233	1		

<sup>2</sup> Rates values: 1=No fungal growth; 2=<10% fungal growth; 3=10-30% fungal growth; 4=30-60% fungal growth; 5=>60% fungal growth

VIRUS	Antiviral activity <sup>3</sup>	Viral activity reduction %	Test method
ATCC-CCL 1679 Orthomyxoviridae Influenza virus A Influenza virus H3N2	0,000	100%	ISO 21702:2019
ATCC VR 782 Feline calicivirus	0,087	98,56%	

<sup>3</sup> Antiviral activity shows the ability of the antiviral material to abate the inoculated virus

# Bacterial growth & biocides migration test

Microbes have been inoculated on TPU belt covers in a petri dish. The bacterial growth has been monitored for 7 days simulating washing cycles of a belt in industrial application.

*Tests performed by external independent Laboratory.*



Standard TPU belt

**X** Bacterial growth on the belt's surface



TPU antimicrobial belts WITH BIOCIDES

**✓** Bacterial growth inhibited  
**X** Migration of biocides  
**X** Loss of antimicrobial efficacy due to biocides migration



**HPAM**

**✓** Bacterial growth inhibited  
**✓** No migration  
**✓** No contamination



Biofilm formation on belt



Food contamination & reduced antimicrobial effect with time



No biofilm, no contamination



# Supporting HACCP

## On field results

*Chiorino HP<sup>®</sup> Antimicrobial belts have been successfully tested by End users adopting severe hygienic protocols.*

*Comparative Swab Tests have been run on HP<sup>®</sup> AM belts both during the food processing and after sanitization cycles.*

*The bacteria count on HP<sup>®</sup> AM belts resulted far below the acceptable limits and it remained constant for the whole belt service life.*

*Customers declared that HP<sup>®</sup> AM belts fully support the HACCP procedures and facilitate cleaning operations<sup>(1)</sup>.*

<sup>(1)</sup> HP<sup>®</sup>AM belts do not replace the cleaning and sanitification procedures



# HP<sup>®</sup>AM Production program

Code	Type	Material	Colour	Surface	Total thickness mm	Knife edge min. radius <sup>(1)</sup> mm	Min. pulley diameter <sup>(1)</sup> mm	Pull for 1% elongation N/mm	Temperature resistance °C	
									min.	max.
NA1669	EL2- U10 HP blue AM	HP <sup>®</sup> TPU	HP <sup>®</sup> blue	smooth	1.00	-	10	2 <sup>(2)</sup>	-30	60
NA1688	EL3-U15 HP blue AM	HP <sup>®</sup> TPU	HP <sup>®</sup> blue	smooth	1.50	-	10	3 <sup>(2)</sup>	-30	60
NA1667	1M5 U0-U2 HP blue A AM	HP <sup>®</sup> TPU	HP <sup>®</sup> blue	smooth	0.70	3	6	5	-30	110
NA1665	1M5 U0-U2 HP VL blue A AM	HP <sup>®</sup> TPU	HP <sup>®</sup> blue	VL	0.70	3	6	5	-30	110
NA1668	2M5 U0-U2 HP blue A AM	HP <sup>®</sup> TPU	HP <sup>®</sup> blue	smooth	1.30	4	8	6	-30	110
NA1666	2M5 U0-U2 HP VL blue A AM	HP <sup>®</sup> TPU	HP <sup>®</sup> blue	VL	1.30	4	8	6	-30	110

<sup>(1)</sup> Minimum pulley radius / diameters is dependent on the joint recommended by Chiorino

<sup>(2)</sup> Pull for 8% elongation

The technical data are valid under normal environmental conditions and are subject to change without notice.





## Enhancing food safety & hygiene

Durable inhibition of biofilm growth

They reduce bacterial growth by >99% and inhibit the biofilm formation. Allow faster and more effective cleaning operations, with lower water consumption <sup>(1)</sup>.

Easier cleaning operations facilitate the use of less aggressive detergents, extending the belt service life.

They maintain constant the antimicrobial properties during the whole lifetime.



Quick & easy to clean



Prevent product recalls



Long service life

<sup>(1)</sup> HP AM belts do not replace cleaning and sanitizing procedures of the HACCP system.



## No food contamination

Biocides-free

They do not contain biocides (eg. metallic ions) that can migrate and contaminate the food.



Preserve food quality & Consumers' health and safety



## HP<sup>®</sup> Product System

Premium performances

Excellent resistance to:

- Chemicals & sanitization agents
- High/low temperatures
- Fats and aggressive oils
- Mechanical stress caused by knife edges backflexing and scrapers.



Increased production efficiency



Long service life



## Certified Food Compliance

REGULATION EC 1935/2004 and amendments

REGULATION EC 2023/2006 and amendments

REGULATION EU 10/2011 and amendments

FDA (Food and Drug Administration)



## HEADQUARTERS AND PRODUCTION PLANTS

### CHIORINO S.p.A.

Via S. Agata, 9  
I-13900 Biella, Italy

Tel. +39 015 8489 1  
Fax +39 015 8489 161

chiorino@chiorino.com  
www.chiorino.com



## CHIORINO AFFILIATED COMPANIES

### America

CHIORINO AMERICA  
Suwanee, GA  
Tel. +1-302-292-1906  
info@chiorino.us  
www.chiorino.us

SAFARI BELTING SYSTEMS, Inc.  
Olathe, KS  
Tel. +1-888-662-6611  
info@safaribelting.com  
www.safaribelting.com

### Australia

CHIORINO AUSTRALIA  
Brisbane  
Tel. +61-7-32741900  
sales@chiorino.com.au  
www.chiorino.com.au

### Benelux

CHIORINO BENELUX B.V.  
Utrecht - Netherlands  
Tel. +31-30-2413060  
chiorino@chiorino.nl  
www.chiorino.nl

### China

CHIORINO ASIA Ltd.  
Hong Kong  
Tel. +852-397-10818  
info@chiorino.asia  
www.chiorino.asia

### Czech Republic

REKO s.r.o.  
Jaromer  
Tel. +420-491-840012  
info@reko-sro.cz  
www.reko-sro.cz

### France

CHIORINO SAS - Lagny, Paris  
Tel. +33-1-64304075  
chiorino.paris@chiorino.fr  
www.chiorino.fr

### Germany

CHIORINO GmbH - Mainz  
Tel. +49-(0)6131-55449-0  
info@chiorino.de  
www.chiorino.de

### Hungary

CHIORINO Kft.  
Szigetszentmiklós, Budapest  
Tel. +36-24-525930  
mail@chiorino.hu  
www.chiorino.hu

### India

FRANSTEK PRIVATE Ltd. (JV)  
Salcete Goa  
Tel. +918-322-782454  
info@chiorino.in  
www.chiorino.in

### Italy

CHIORINO PARMA s.r.l.  
Parma  
Tel. +39-0521-292236  
chiorinoparma@chiorino.com

CHIORINO VENETO s.r.l.  
Colle Umberto (TV)  
Tel. +39-0438-430460  
chiorinoveneto@chiorino.com

KRUSE srl - Torino  
Tel. +39-011-2236878  
info@kruseonline.com

### Poland

CHIORINO Sp. z o.o. - Bydgoszcz  
Tel. +48-(0)52-3487708  
chiorino@chiorino.com.pl  
www.chiorino.com.pl

### Portugal

CHIORINO PORTUGAL, LDA  
Alfena Valongo, Porto  
Tel. +351-229684442  
geral@chiorino.pt  
www.chiorino.pt

### Romania

CHIORINO srl  
Sannicoara, Jud.Cluj Napoca  
Tel. +40-264-432977  
chiorino@chiorino.ro  
www.chiorino.ro

### Slovakia

CHIORINO SLOVAKIA s.r.o.  
Nové Zámky  
Tel. +421-910-486654  
info@chiorino.sk  
www.chiorino.sk

### South Africa

CHIORINO SOUTH AFRICA Ltd.  
Johannesburg  
Tel. +27-11-3971268  
sales@chiorino.co.za  
www.chiorino.com

### Spain

CHIORINO IBERICA S.A.  
Rubí, Barcelona  
Tel. +34-93-5860480  
chiorino@chiorino.es  
www.chiorino.es

### Switzerland

CHIORINO SCHWEIZ GmbH  
Wetzikon  
Tel. +41-(0)43-3116001  
info@chiorino.ch  
www.chiorino.ch

### Ukraine

CHIORINO UKRAINE LLC  
Poltava region, Shcherbani village  
Tel. +38-050806560  
office@chiorino.com.ua  
chiorino.com.ua

### United Kingdom

CHIORINO U.K. Ltd.  
Glasshoughton  
Tel. +44-1977-691880  
sales@chiorino.co.uk  
www.chiorino.co.uk

Chiorino operates all over the world through the Group companies and more than 100 distributors.  
More info on [www.chiorino.com](http://www.chiorino.com).

