

Partner for food conveying solutions

Homogeneous and Drive belts





EC 1935/2004 & FDA Certified Food Compliance



Am AntiMicrobial homogeneous and drive belts

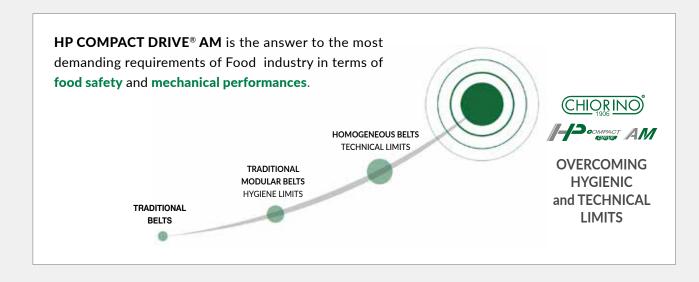
Chiorino **HP® Antimicrobial homogeneous and drive belts** represent a breakthrough for food safety & hygiene.

The HP® Antimicrobial homogeneous and drive belts perform an advanced antimicrobial bacteriostatic action that prevents bacteria build-up on the belt surface by breaking the cycle of biofilm creation.

They do not contain biocides that can migrate and contaminate the food (1) and fully comply with EU and international food regulations.

HP® COMPACT DRIVE Antimicrobial belts help preventing product recalls due to cross contamination from the belt and minimize the risks on non-compliance during food safety inspections and audits by authorities.

(1) Migration tests are made in accordance with EU 10/2011 regulation.



The ultimate food conveying system



Belt design

Homogeneous and drive belt with a reinforced traction core and toothed profile on the running side.

The HP COMPACT DRIVE® AM positive drive belts can be supplied with any kind of teeth and pitch, both standard and customized.



Homogeneous belt design, reinforced traction core.

The HP COMPACT® AM belts assure the total compliance with the requisites imposed by the HACCP practice in the whole production process.



Pulleys







Chiorino supplies standard or customized pulleys according to Customer's needs.





Risk minimization Empower food safety





// Homogeneous and drive belts

Trouble-free conveyor solution

- Excellent mechanical stability
- Constant running
- Self-tracking
- No deformations
- Ideal for Z-Conveyors
- Up to 2000 mm width



Increased production efficiency



Optimized cost of ownership



Enhancing food safety & hygiene

Durable inhibition of biofilm growth

They reduce bacterial growth by >99% and inhibit the biofilm formation.

They maintain constant the antimicrobial properties during the whole lifetime.



Help preventing product recalls



Long service life



Preserve food quality

No contamination from the belt

They do not contain biocides that can migrate and contaminate the food ⁽¹⁾.

 $^{\mbox{\tiny (1)}}\,\mbox{Migration}$ tests are made in accordance with EU 10/2011 regulation.



No food contamination

No alteration of food organoleptic properties



//- 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.



Quick & easy to clean



Increased production efficiency



Long service life



Minimize the risk of product recalls

Food industry is continuously establishing stricter hygiene standards to prevent contaminations by microrganisms 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® Antimicrobial belts reduce by >99% the bacterial growth.





Supporting HACCP On field results

Chiorino HP® Antimicrobial belts have been successfully tested by End users adopting severe hygienic protocols.

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

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

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

 $^{(1)}$ HP®AM belts do not replace the cleaning and sanification procedures.







Certified Food Compliance

To protect Consumer's health, CHIORINO process and conveyor belts comply with the latest european and international Food Regulations:

REGULATION EC 1935/2004 and amendments

REGULATION EC 2023/2006 and amendments

REGULATION EU 10/2011 and amendments

FDA (Food and Drug Administration)



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

Test performed by external independent Laboratories.

BACTERIA	Antibacterial activity ¹ ufc/cm ²	Reduction %	Test method
Staphylococcus aureus ATCC 6538P	2,63	99,77%	
Escherichia coli ATCC 8739	3,54	99,97%	100 00407 0044
Salmonella enterica ATCC 70072	3,54	99,73%	ISO 22196:2011
Listeria monocytogenes CECT 5672	3,54	98,87%	

¹As reported by ISO22196:2011 and JAS 2801:2010 a material has an antibacterial attitude if its antibacterial activity is ≥2,00

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

² 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	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 calcivirus	0,087	98,56%	

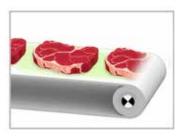
Bacterial growth & biocides migration test

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 indipendent Laboratory.



Standard TPU belt X Bacterial growth on the belt's surface



Biofilm formation on belt



TPU antimicrobial belts WITH BIOCIDES

- Bacterial growth inhibited
- Migration of biocides
- Loss of antimicrobial efficacy due to biocides migration



Food contamination & reduced antimicrobial effect with time





- ✓ Bacterial growth inhibited
- ✓ No migration (1)
- ✓ No contamination from the belt

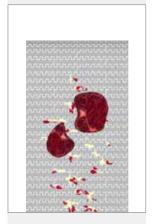


No biofilm, no contamination

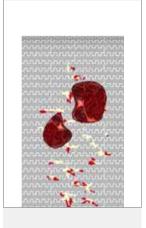
Total food safety and water saving







Chiorino Ultra-TUFF[™] modular belts

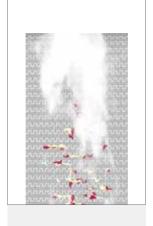


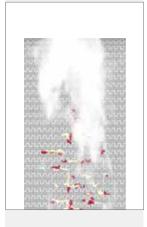




Chiorino HP COMPACT DRIVE® AM washing is quick and easy, assuring total hygiene and reducing downtime to a minimum.

Thanks to their high release properties the Chiorino ULTRA-TUFF® modular belts allow a much more effective cleaning compared to traditional modular belts.



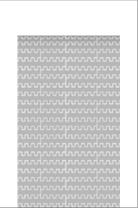




Traditional modular belts require an excessive water and energy consumption, still resulting in an effectively impossible sanitization.

Up to **60% water saving** compared to traditional modular belts is one of the main competitive advantages of HP COMPACT DRIVE® AM belts.







Even after long cleaning operations, foodstuff residuals remain on traditional modular belts surface, resulting in poor hygiene.

At the end of the cleaning cycle both HP COMPACT DRIVE® AM and ULTRA-TUFF belts' surfaces are perfectly clean and safe, ready for starting further operations assuring total food safety.

Excellent resistance to bacterial proliferation



Monolithics and traditional homogeneous belts







Frequent washings affect the conveyor belts' surface that undergoes the hydrolisis attack, with heavy consequences in terms of hygiene and belts life.

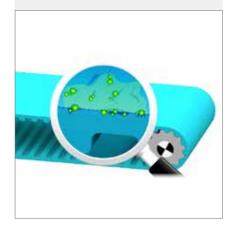
The porous surface of monolithics and traditional homogeneous belts particularly suffers the hydrolisis effect.





The surface of traditional monolithic belts cracks and becomes a natural shelter for bacterial growth.

The **highly compact polyurethane** resulting from the exclusive Chiorino **HP® product system** resists hydrolisis more than any other belt with no crackings on the surface.





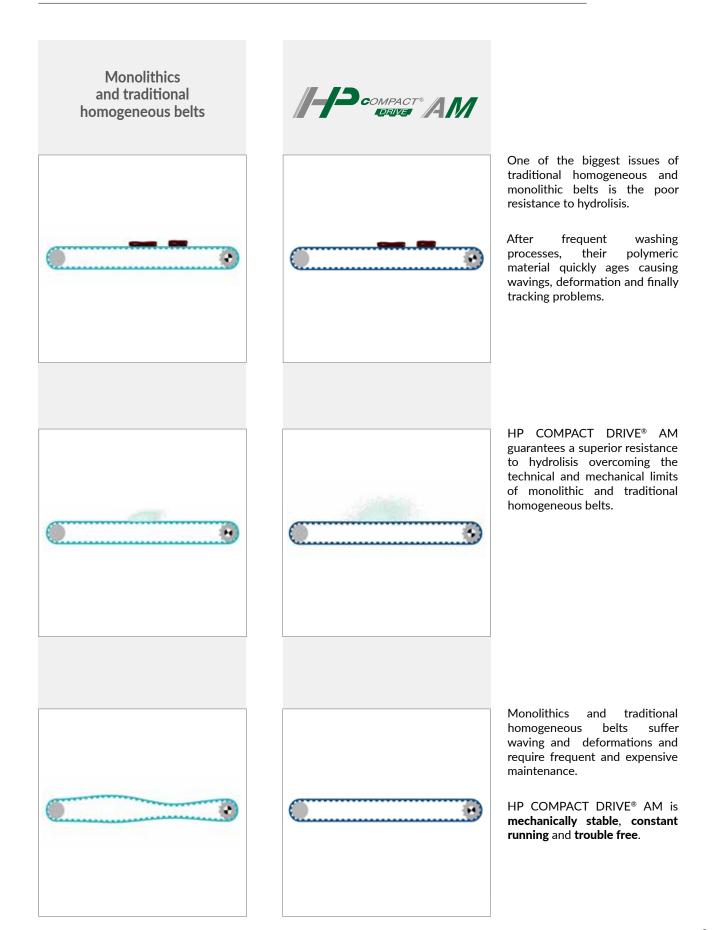
If bacteria are not completely removed there is a considerable risk of bacterial layer formation on the belts surface.

The bacteriostatic action pof HP AM belts revents bacteria build-up on the belt surface by breaking the cycle of biofilm creation.

This makes HP COMPACT DRIVE® AM the **best solution for total food safety**.

Excellent mechanical stability





Ideal for all conveyor designs



The special **Chiorino compact reinforced traction core** assures unlimited flexible and innovative configurations, making HP® COMPACT DRIVE AM ideal for the use on all demanding applications such as swan neck conveyors.

KEY FEATURES

MAIN BENEFITS

Compact reinforced traction core

S

No deformations
Cross rigidity
Self tracking
No elongations
Low fitting tension

Compact reinforced traction core



No vibrations
Ideal for Z-conveyors
Up to 2000 mm width





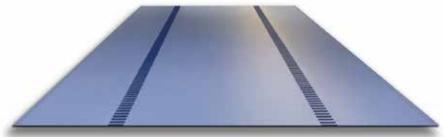
Beyond the limits of custom solutions!

HP COMPACT DRIVE® AM is produced in **2000 mm width** and no length limits for endless belts.

It can be supplied with a **double row** of teeth up to 2000 mm belts width.

HP COMPACT® DRIVE AM is the **only homogeneous reinforced belt** available in **2000 mm** width.





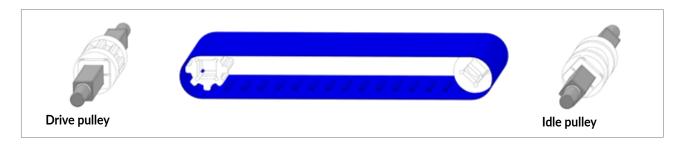
Pitches and pulleys

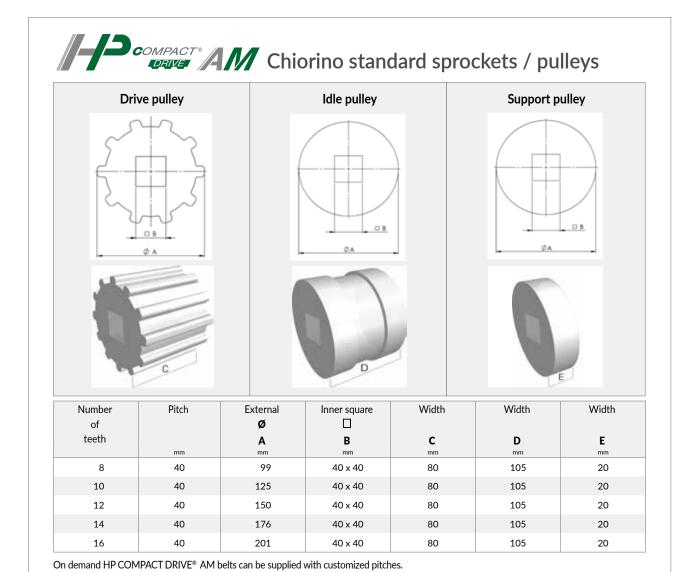


The traditional positive drive conveyor construction consists of:

- Drive pulley
- Slidebed
- Idle pulley with tensioning device
- Support pulleys

Chiorino supplies both standard and customized pulleys according to Customer's needs.





Homogeneous and drive belts



Code	Туре	Total thickness	Material	Driving toothed side surface texture	Conveying side surface texture	Pitch	Tooth section	Tooth length	Pull for 1% elong.	Min. diameter (1)	Temperature resistance	Max. width	Inclined	Swan neck	Trough
		mm		<u> </u>	<u></u>	mm	b x h	mm	N/mm	mm	min. max.	mm	3	M	<u>~</u>
NA1729C_D13	HP Compact Drive 20/40 blue AM	2.0	TPU HP®	smooth	smooth	40	13 x 8	72	8	80	-30 +90	2000			•
NA1706C_D13	HP Compact Drive 25/40 blue AM	2.5	TPU HP®	smooth	smooth	40	13 x 8	72	8	80	-30 +90	2000		•	
NA1730C_D13	HP Compact Drive 25/40 PN blue AM	2.5	TPU HP®	smooth	PN	40	13 x 8	72	8	80	-30 +90	2000	•	•	
NA1725C_D13	HP Compact Drive 25/40 RG blue AM	2.5	TPU HP®	smooth	RG	40	13 x 8	72	8	80	-30 +90	2000	•	•	
NA1726C_D13	HP Compact Drive 25/40 VL blue AM	2.5	TPU HP®	smooth	VL	40	13 x 8	72	8	80	-30 +90	2000		•	
NA1727C_D13	HP Compact Drive 40/40 blue AM	4.0	TPU HP®	smooth	smooth	40	13 x 8	72	15	80	-30 +90	2000		•	

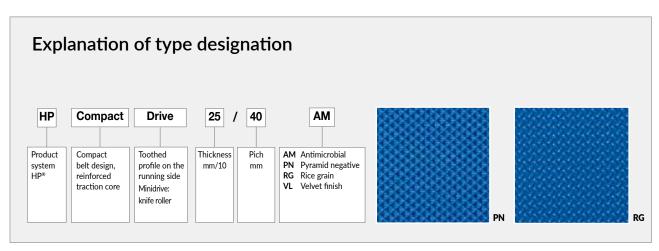


Code	Туре	Total thickness	Material	Driving side surface texture	Conveying side surface texture	Pull for 1% elong.	Min. diameter (1)	Temperature resistance	Max. width	Knife roller	Inclined	Swan neck	Trough
		mm				N/mm	mm	min. max. °C °C	mm				
NA1724A	HP Compact 15 blue AM	1.5	TPU HP®	smooth	smooth	5	25	-30 +110	2000	•			
NA1729A	HP Compact 20 blue AM	2.0	TPU HP®	smooth	smooth	8	50	-30 +110	2000				•
NA1706A	HP Compact 25 blue AM	2.5	TPU HP®	smooth	smooth	8	50	-30 +110	2000			•	
NA1730A	HP Compact 25 PN blue AM	2.5	TPU HP®	smooth	PN	8	50	-30 +110	2000		•	•	
NA1725A	HP Compact 25 RG blue AM	2.5	TPU HP®	smooth	RG	8	50	-30 +110	2000		•	•	
NA1725A RG	HP Compact RG 25 blue AM	2.5	TPU HP®	RG	smooth	8	50	-30 +110	2000			•	
NA1726A	HP Compact 25 VL blue AM	2.5	TPU HP®	smooth	VL	8	50	-30 +110	2000			•	
NA1727A	HP Compact 40 blue AM	4.0	TPU HP®	smooth	smooth	15	80	-30 +110	2000			•	

⁽¹⁾ Minimum roller diameter is dependent on the joint recommended by Chiorino.

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

Due to the variety of different worldwide regulations, the information in this catalogue are valid for Europe. For other geographical areas please contact our Sales Departments.



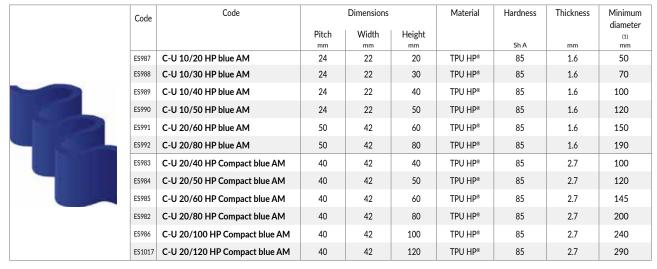
Profiles and Sidewalls

Transversal profiles

	Code	Туре	Dimensions b x h	Material	Hardness	Min. transversal pitch	Min. transversal diameter (1)
	ES993	L20 U HP blue AM	10 x 20	TPU HP®	70 Sh A	40	40
	ES994	L30 U HP blue AM	10 x 30	TPU HP®	70 Sh A	40	40
	ES995	L40 U HP blue AM	10 x 40	TPU HP®	70 Sh A	40	40
	ES996	L50 U HP blue AM	10 x 50	TPU HP®	70 Sh A	40	40
	ES997	L80 U HP blue AM	10 x 80	TPU HP®	70 Sh A	40	40
	ES998	L80 U HP blue 55D AM	10 x 80	TPU HP®	55 Sh D	40	40
	ES1000	T20 U HP blue AM	10 x 20	TPU HP®	70 Sh A	40	40
	ES1001	T30 U HP blue AM	10 x 30	TPU HP®	70 Sh A	40	40
	ES1002	T40 U HP blue AM	10 x 40	TPU HP®	70 Sh A	40	40
	ES1003	T50 U HP blue AM	10 x 50	TPU HP®	70 Sh A	40	40
	ES1004	T60 U HP blue AM	10 x 60	TPU HP®	70 Sh A	40	40
	ES1005	T50 U HP blue 55D AM	10 x 50	TPU HP®	55 Sh D	40	40
este a	ES1012	T80 U HP RG blue 55MD AM	10 x 80 ⁽²⁾	TPU HP®	55 Sh D	40	50
	ES1006	T100 U HP blue 55MD AM	10 x 100 (2)	TPU HP®	55 Sh D	40	50
	ES1015	T100 U HP RG blue 55MD AM	10 x 100 (2)	TPU HP®	55 Sh D	40	50
	ES970	T120 U HP blue 55MD AM	10 x 120 (2)	TPU HP®	55 Sh D	40	50
	ES971	T120 U HP RG blue 55MD AM	10 x 120 (2)	TPU HP®	55 Sh D	40	50
	ES973	T150 U HP blue 55 MD AM	10 x 150 (2)	TPU HP®	55 Sh D	40	50
	ES1013	TS80 U HP blue 55MD AM	10 x 80 ⁽²⁾	TPU HP®	55 Sh D		
	ES1008	TS100 U HP blue 55MD AM	10 x 100 (2)	TPU HP®	55 Sh D		
	ES1007	TS120 U HP blue 55MD AM	10 x 120 (2)	TPU HP®	55 Sh D		

 $^{ ext{(1)}}$ Minimum pulley diameters referred to environment conditions of 20°C $^{ ext{(2)}}$ Available in 800 mm lenght bars









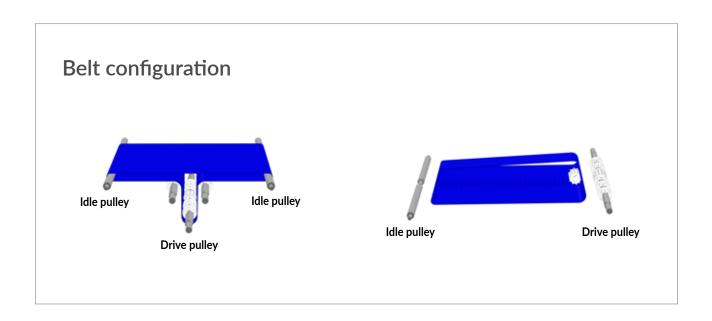
Accuracy and precise transfer

HP COMPACT MINIDRIVE AM is the ultimate solution for **food positive drive belts** featuring a **reduced teeth pitch**.

Ideal for running on small pulleys, it assures smooth product transfer and increased production efficiency.

Engineered for small pulleys	Accurate product transfer Minimized production waste
HP COMPACT® exclusive design	No mistracking. No misalignements Suitable for bi-directional running. Ideal for high speed
HP® excellent resistance to bacteria proliferation and cleaning procedures	Total food safety
High resistance to oils, fats, abrasion	Long service life
Lower tension = Highest resistance to mechanical stress (shafts and bearings saving) Easy to clean = Water saving	Optimized cost of ownership







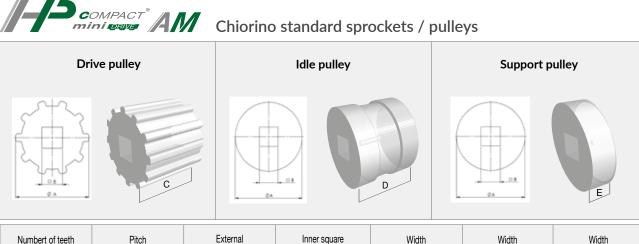
Homogeneous drive belts

Code	Туре	Total thickness	Material	Driving toothed side surface texture	Conveying side surface texture	Pitch	Tooth section	Tooth length	Pull for 1% elong.	Min. diameter (1)	Temperature resistance	Max. width	Knife roller
		mm				mm	b x h	mm	N/mm	mm	min. max.	mm	
NA1724F_D6	HP Compact Minidrive 15/20 blue AM	1.5	TPU HP®	smooth	smooth	20	6x4	72	5	25	-30 +90	1200	•
NA1761F_D6	HP Compact Minidrive 15/20 PN blue AM	1.5	TPU HP®	smooth	PN	20	6x4	72	5	25	-30 +90	1200	•

 $^{^{\}mbox{\tiny (1)}}$ Minimum roller diameter is dependent on the joint recommended by Chiorino.

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Numbert of teeth	Pitch	External Ø A	Inner square	Width C	Width D	Width E
	mm	mm	mm	mm	mm	mm
9	20	55	20 x 20	80	105	20
10	20	62	25 x 25	80	105	20
11	20	68	25 x 25	80	105	20
12	20	74	25 x 25	80	105	20

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