

Ideas in motion



HP-polyurethane conveyor and process belts with HACCP conformity



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The CHIORINO **HP POLYURETHANE** conveyor and process belts are product leaders for the food industry in terms of performance and durability. Thanks to the sophisticated production technology and the special polyurethane polymers used, the CHIORINO “HP” belts **PREVENT BACTERIA FROM PROLIFERATING** and ensure **HIGH PHYSICAL-CHEMICAL-MECHANICAL PERFORMANCE**.

The increasingly stringent regulations on the subject of food **hygiene** and **safety** have forced plant manufacturers to choose components that are totally reliable from the point of view of hygiene during the production processes.

The **HP POLYURETHANE** belts comply with the **FDA** (cf. 21 § 177.2600) and **2005/79/CE** regulations and fully comply with the criteria dictated by the **HACCP** (Hazard Analysis and Critical Control Points) thanks to two innovative features that place CHIORINO in the forefront of the proposals in relation to belts for the food industry:

- ▶ **TOTAL HYGIENE:** the surface of the HP belts is made up of a **special polyurethane, which is very compact and even though it does not contain biocide additives**, is nonetheless capable of preventing the formation of bacterial colonies and of guaranteeing the transportation of food products in completely hygienic conditions, provided that they are cleaned daily;
- ▶ **RESISTANCE TO THE CLEANING SYSTEMS:** thanks to the high degree of **resistance to hydrolysis**, the HP belts are highly resistant to the aggressive action of water and steam, as well as to the chemical and mechanical agents during the cleaning phases. In this way they can be washed on a daily basis, even with continuous systems, without any deterioration in their physical-mechanical characteristics.

CHIORINO operates throughout the world with 15 subsidiaries and more than 60 partners if one includes sole distributors and highly qualified assistance centres capable of guaranteeing a speedy assistance and installation service, 24 hours a day.

For more information on the Distribution Chain see www.chiorino.com.

CHIORINO S.p.A. is **EMAS, UNI EN ISO 9001:2000** and **UNI EN ISO 14001:2004** certified.

At the forefront of hygiene and food safety

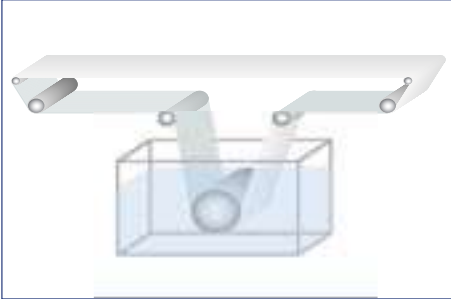
HP

The **HP POLYURETHANE** belts are CHIORINO's answer to the growing demand by food system manufacturers for components that **ENSURE TOTAL HYGIENE** and that **DO NOT CONTAIN BIOCIDES ADDITIVES** that could migrate from the surface and contaminate the product being conveyed.

Main **COMPETITIVE ADVANTAGES** of the **CHIORINO HP POLYURETHANE** belts:

- HP** Prevent the proliferation of bacteria
- HP** Do not contain biocide additives
- HP** HACCP, FDA and 2005/79/CE conformity
- HP** Excellent resistance to washing
- HP** High resistance to chemical agents
- HP** Optimal resistance to vegetable oils
- HP** High resistance to abrasion
- HP** Perfect release of the raw dough
- HP** High resistance to high and low temperatures



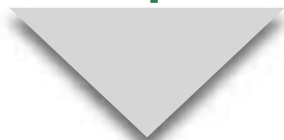


CHIORINO HP belts can be subjected to **continuous washing systems with hot water and detergents** without undergoing any deterioration.

calendering



polyurethane
high compactness



HP

CHIORINO[®]
1906

b e l t s
HACCP

HP is HACCP

CHIORINO **HP POLYURETHANE** belts conform to the concept of **HACCP** (Hazard Analysis and Critical Control Points) and to the **FDA** (cfr 21§ 177.2600) and **2005/79/CE** regulations relating to food hygiene and safety. The special calendering technology combined with the know-how and the quality achieved by CHIORINO guarantee an end-product with particularly high performance levels.

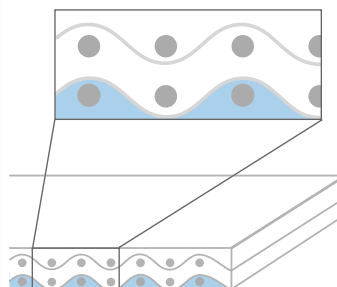
Thanks to the sophisticated productive system of **CALENDERING**, the **SURFACE** of the HP POLYURETHANE belts is **ABSOLUTELY COMPACT** and **HOMOGENEOUS**. The **TOTAL ABSENCE OF CRACKING** stops the formation of bacterial colonies on the surface of the belts.

In addition the **SPECIAL HP IMPREGNATION OF THE FABRIC OF THE DRIVING SURFACE** further insulates the belt against bacterial infiltration. As if this was not enough to guarantee the total hygienic protection, upon request CHIORINO can seal the edges (see page 6).

The surface of HP POLYURETHANE belt is made from **SPECIAL HIGHLY COMPACT POLYURETHANE** characterised by a high **RESISTANCE TO HYDROLISIS**. Thus the HP POLYURETHANE belts are highly resistant to the aggressive action of water and steam, as well as to the chemical and mechanical agents, used during the cleaning phases. They can be washed on a daily basis, **even with continuous systems**, without any deterioration in their physical-mechanical characteristics.

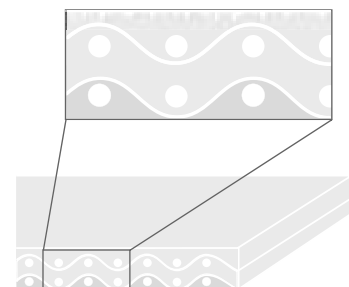
Thanks to the properties listed above CHIORINO **HP POLYURETHANE** belts offer greater hygiene levels compared to the traditional polyurethane belts available on the market.

CHIORINO HP
CALENDERED
BELTS



Perfectly compact surfaces prevent the proliferation of bacteria

TRADITIONAL
POLYURETHANE
BELTS



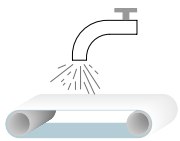
Porous surfaces that promote the proliferation of bacteria

HP is High Performance

HP does not only mean HACCP. CHIORINO HP POLYURETHANE belts over and above guaranteeing compliance with the HACCP concept ensure **HIGH PHYSICAL-CHEMICAL-MECHANICAL PERFORMANCE** compared to the traditional belts in polyurethane and are prized in particularly difficult applications, even outside the food sector.

The comparative analyses listed hereunder were carried out in the CHIORINO R&D laboratories and highlight the advantages of the HP POLYURETHANE belts compared to the traditional belts.

1. Resistance to hydrolysis and the cleaning systems



The HP POLYURETHANE belts guarantee an excellent resistance to hydrolysis as well as the chemical and mechanical action of washing with hot water and steam, including with continuous systems (graph 1).

2. Excellent flexibility



The HP POLYURETHANE belts are very resistant to flexion retaining their elastic properties, even in the presence of knife edges and difficult conditions for conveying (graph 2).

3. Resistance to vegetable oils and chemical agents

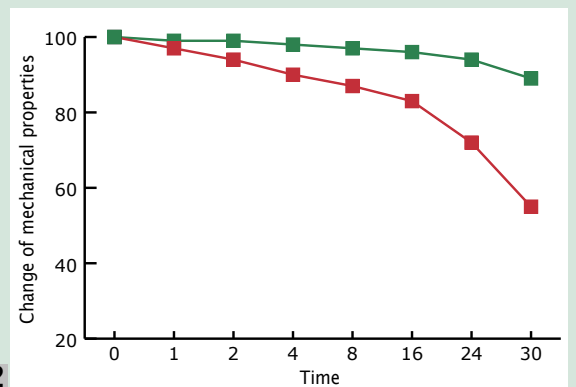
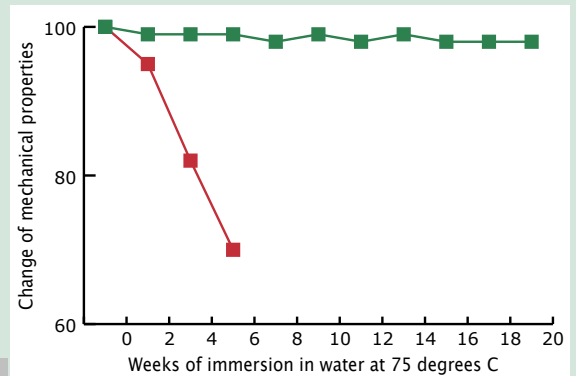


The HP POLYURETHANE belts ensure an excellent resistance to the chemical agents, fats and aggressive oils, including palm and coconut oil (graph 3).

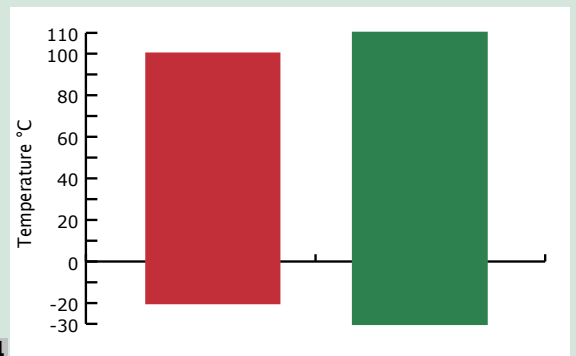
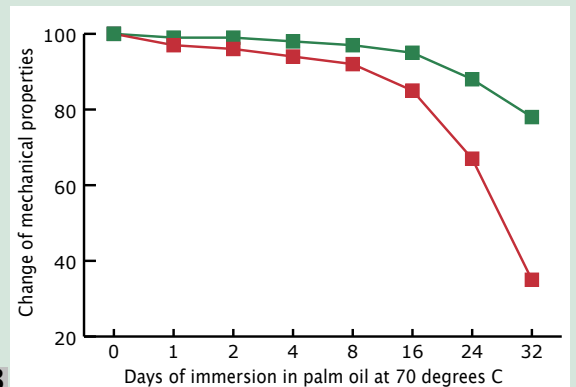
4. Resistance to high and low temperatures



CHIORINO HP POLYURETHANE belts offer increased resistance to high temperatures compared to traditional polyurethane belts and maintain their characteristics even at low temperatures (graph 4).



Test effected in ultimate work conditions on trial machinery in the CHIORINO laboratories



■ HP polyurethane belts

■ Traditional polyurethane belts

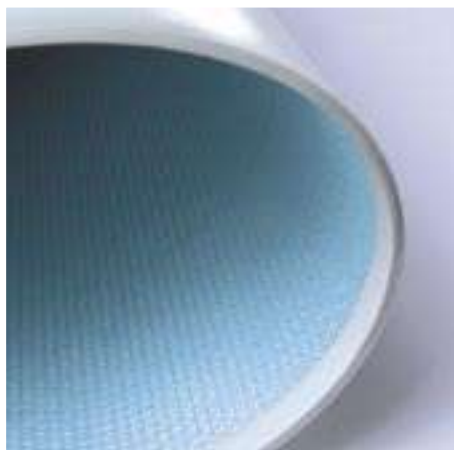


Blue HP belts

In response to the most recent trend of the food and agro-industrial industry CHIORINO has made a complete range of belts in **BLUE HP POLYURETHANE**, which in addition to the characteristics of the white HP belts offer the following advantages:

- ▶ **they guarantee an optimal visual contrast with the material being conveyed.** The raw dough, the products to be baked in the oven and the fruit and vegetables stand out better on the blue belts compared to the white or traditional green belts. In addition blue enables one to see any residues during the cleaning operations;
- ▶ **they reduce the reflection of light**, thus providing the operators with working conditions that are less tiring to the eyes;
- ▶ **the special velvet finishing of the coating** conveys the belt a velvety surface that guarantees an excellent non-stick quality with all types of raw dough and is particularly suited to accumulation conveyors.

The HP blue series belts can be supplied with **HP POLYURETHANE profiles and sidewalls of the same colour.**



Sealed edges

On request the **HP POLYURETHANE** belts can be supplied with **SEALED EDGES**, a special procedure that allows the complete insulation of the textile structure against any infiltration by the material being conveyed, guaranteeing durability of the belt and compliance with the hygiene regulations and the **HACCP** food concept.

Production program

Type	Textile carcass	Conveying surface coating	Driving surface coating	Food compliance FDA and 2005/79/CE	Permanent antistatic	Total thickness	Weight	Minimum diameter (1)	Pull for 1% elongation	Max. admissible pull	Min. temperature resistance	Max. temperature resistance	Conveying coefficient of friction (3)	Maximum production width
						mm	kg/m ²	mm	N/mm	N/mm	[°C]	[°C]	mm	mm
1M5 U0-U2 HP W A	PET	PUR ○	--- ●	✓	✓	0,7	0,8	↗	5	5	-30	110	MF	2000
1M5 U0-U2 HP W S A	PET	PUR ○	--- ●	✓	✓	0,7	0,8	↗	5	5	-30	110	HF	2000
1M5 U0-U2 HP D W A	PET	PUR ○	--- ●	✓	✓	0,7	0,7	↗	5	5	-30	110	HF	2000
1M5 U0-U2 HP VL blue A	PET	PUR ●	--- ●	✓	✓	0,7	0,8	↗	5	5	-30	110	MF	2000
2M5 U0-U0 HP A	PET	PUR ○	--- ○	✓	✓	1,0	1,0	↗	6	12	-30	110	LF	2000
2M5 U0-U2 HP W A	PET	PUR ○	--- ●	✓	✓	1,3	1,4	↗	6	12	-30	110	MF	2000
2M5 U0-U2 HP W S A	PET	PUR ○	--- ●	✓	✓	1,3	1,4	↗	6	12	-30	110	HF	2000
2M5 U0-U2 HP PN W A	PET	PUR ○	--- ●	✓	✓	1,6	1,5	↗	6	12	-30	110	MF	2000
2M5 U0-U2 HP VL blue A	PET	PUR ●	--- ●	✓	✓	1,3	1,4	↗	6	12	-30	110	MF	2000
2M5 U0-U2 HP PN blue A	PET	PUR ●	--- ●	✓	✓	1,6	1,5	↗	6	12	-30	110	MF	2000
2M5 U2-U2 HP VL blue A	PET	PUR ●	PUR ●	✓	✓	1,5	1,7	↗	6	12	-30	110	MF	2000
1T6 U0-U2 HP W A	PET	PUR ○	--- ●	✓	✓	0,8	0,8	↗	6	6	-30	110	MF	2000
2T12 U0-U2 HP VL W A	PET	PUR ○	--- ●	✓	✓	1,6	1,7	↗	12	24	-30	110	MF	2000
EL2-U10 HP W	---	PUR ○	PUR ○	✓		1,0	1,1	10	2 ⁽²⁾	2	-30	60	MF	2000
EL2-U10 HP blue	---	PUR ●	PUR ●	✓		1,0	1,1	10	2 ⁽²⁾	2	-30	60	MF	2000

The technical data of this table have been formulated under normal environment conditions. They are subject to alteration without notice.

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

(2) Elastic belts 'EL': pull for 8% elongation

(3) Conveying surface coefficient of friction:

- LF low
- MF medium
- HF high

↗: knife edge

Explanation of type designation

- 2** Number of plies
- M** Textile carcass
- 5** Pull for 1% elongation [N/mm]
- U** Driving surface coating
- 0** Thickness (mm/10)
- U** Conveying surface coating
- 2** Thickness (mm/10)
- HP** Other characteristics
- PN** Surface pattern (see photo)
- W** White colour conveying surface coating
- A** Other characteristics

EL Elastic belt without textile carcass

2 Pull for 8% elongation (N/mm)

U Coating material

10 Thickness (mm/10)

HP Other characteristics

W Conveying surface coating

TEXTILE CARCASS

- M** Rigid polyester
- T** Flexible polyester

COATING AND INTERPLY MATERIALS

- U** Polyurethane

OTHER CHARACTERISTICS

- A** Permanent antistatic according to UNI EN 1718
- Blue** Blue colour conveying surface coating
- D** Highly dehesive cover
- HP** HACCP concept conformity
- S** Soft polyurethane cover (70 Sh.A)
- VL** Velvet finish
- W** White colour according to FDA regulation and 2005/79/CE

SURFACE PATTERNS



PN

■ Chiorino Veneto
■ Chiorino Parma
■ United Kingdom
■ France
■ Spain
■ Deutschland
■ Netherlands

WORLDWIDE CHIORINO

■ Poland
■ Byelorussia
■ Hungary
■ Romania
■ U.S.A.
■ South Africa
■ Singapore
■ Australia

CHIORINO S.p.A.

Via S. Agata, 9 :: I-13900 Biella
Tel. +39 015 8489 1 :: Fax +39 015 849 61 61

www.chiorino.com