



**ZEDEX<sup>®</sup>** in  
Tribological Polymer Solutions

# Chemical Industry



**HIGH PERFORMANCE PLASTIC SOLUTIONS**

EN 2.0

## ZEDEX® in action

**ZX-530 and ZX-324** in bottling plants.

**ZX-530 and ZX-324** are used for gears in bottling plants, that have to withstand the aggressive detergents used during the sterilization process. To reduce friction and wear also stainless steel shafts are coated with **ZX-324V2HT COAT**, which also has got a high chemical resistance.



ZX-324



ZX-530

ZX-324V2HT COAT

Bushings and thrust bearings of **ZX-100K** for Vario shuttles. It is used for the pre-treatment of the coachwork and it transports and pivots the car body during the pre-treatment in purification tanks, in which sometimes some aggressive chemicals are used. A high edge pressure resistance is in this application necessary.



**ZX-100K** replacing polyamide. In driving system of a 3 m in the diameter filter drum assembled in a biological treatment plant, a plastic gear made of 8 segments is used. Due to the excessive wear of the polyamide gear a suitable material was needed, in order to ensure maintenance-free operation and meeting the high requirements (high acceleration, alkaline water coming from the cleaning operation cycle). Since then, the gear segments of **ZX-100K** have been successfully used as standard feature in this application.

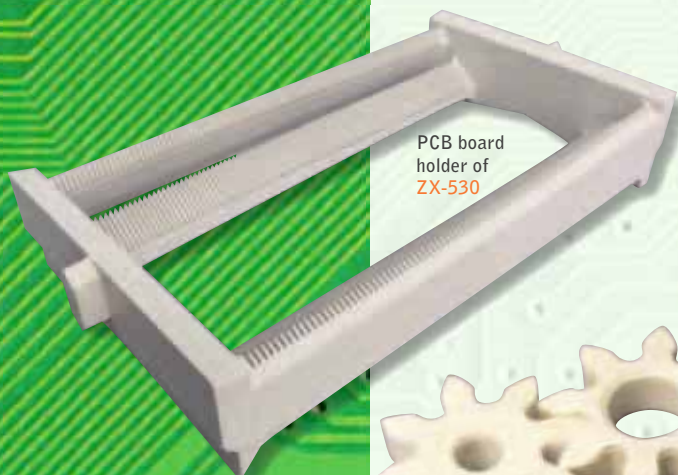




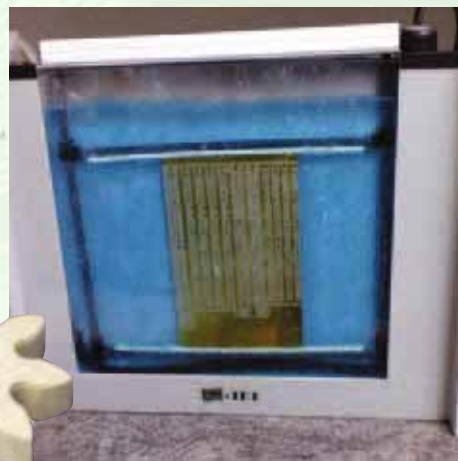


## Bevel gear of ZX-530.

The injection moulded bevel gears of **ZX-530** are used in a transport unit for the printed circuit board production, where they are exposed to chemicals such as aqueous alkali, sodium permanganate and hydrogen peroxide. Due to its excellent chemical resistance and low wear **ZX-530** is now used as standard feature in this application.



PCB board holder of **ZX-530**



Rack drive wheels of **ZX-530**

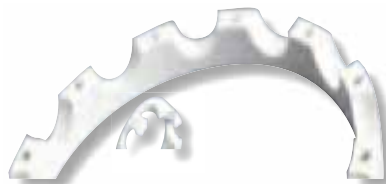
## Rack drive wheels and PCB board holder of ZX-530 .

The wheel gear is used in a horizontal transport equipment for PCB manufacturing. In the production line, the board is drawn in etching baths and the transport device is exposed to the aggressive etching media.

The wheel gear of **ZX-530** has a much higher wear resistance than that of PTFE and PVDF. Also, its strength is much higher. Thanks to the low wear the PCB are not soiled anymore and the rack drive wheel runs quieter. Thanks to its very high chemical and wear resistance **ZX-530** is also ideally suited as PCB board holder in etching baths.



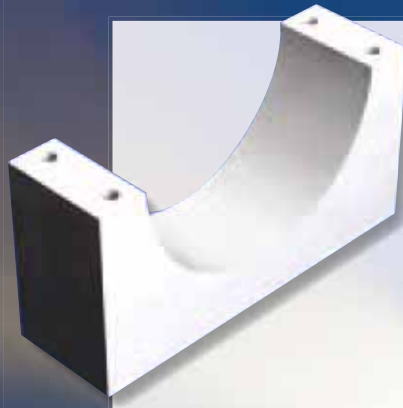
Double bearings **ZX-530** in mammo-  
graphy devices



**ZX-530** as substitution for PA11 and PEEK. The injection moulded bearings are installed in the film developing unit of mammography devices and in the X-ray equipment. They are used as support for the rolls used in the film transport. The bearing works in contact with media with pH values from 2 to 12 and additionally, salts and abrasive particles can penetrate into the bearing seat. Furthermore, the bearings must have only a very small bearing clearance and do not substantially modify its mechanical properties even when exposed to ozone. **ZX-530** meets the required properties. In addition, the wear was significantly reduced in comparison with PA11 and PEEK.

**ZX-530** as a replacement for epoxy resin. The ball cages are available in different sizes and are used in a variety of applications - including bearings for dental drills. In this application they are subjected to high loads. The advantage of **ZX-530** is that the material after the sterilization processes does not lose its properties as some materials do. The material convinced the customer thanks to its low friction, low wear and high chemical resistance. Additionally the material change brought also a cost reduction in comparison to the previously used epoxy resin.

**ZX-324V2T** as substitution for bronze. **ZX-324V2T** is used as moving nut for a lifting mechanism in a alkalische chemical bath at a temperature of 90°C. The load is 150 kg with a sliding speed of 4m/min. Bronze could no longer be used due to the basic medium. **ZX-324V2T** was the solution thanks to its excellent chemical resistance here and its tribological properties. Thanks **ZX-324V2T** the application runs now maintenance free.



**ZX-100K** in biogas plants.  
The component of the material **ZX-100K** serves as centre bearing for impeller shaft in biogas plants.



**ZX-530** as a substitute for PEEK and PTFE with glass fibre.  
In plants for the extraction of a special fuel, **ZX-530** ball valves with 2 sealing rings are used. The friction values have to be so low to permit a switching of the valve under full load without any problems. The service life was increased and the costs were reduced by 40 %.



## **ZX-530** as replacement for PTFE.

In the alkylation columns of refineries, manifolds are used. Since these come into contact with acid, so far PTFE was used in order to guarantee the necessary chemical resistance. At about 120°C, the manifold must support its own weight and the weight of the acid. Due to the poor creep properties and the high density of PTFE it came to tear off and breakage of the manifolds. With the usage of distribution pipes and flanges of **ZX-530** this problem has been solved thanks to its better mechanical properties in combination to an excellent chemical resistance.



## **ZX-530** as a substitute for PA6 with PTFE.

In paper machines, plain bearing bushes of **ZX-530** are used thanks to the low wear and low swelling values. The bushings are used in the wet-chemistry area of paper machines, where they are exposed to different chemicals and temperature from 20°C up to 60°C. The previously used plastic PA6 with PTFE was worn out after a short time which led to the failure of the machine. Since the introduction of **ZX-530** the problems no longer occur and the working life is much longer.



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