MITSUBISHI CHEMICAL ADVANCED MATERIALS

Renewable Energy

Battery Production-Conveying Systems:

Slide Strips and Rails in TIVAR® UHMW-PE Grades

Challenge

Ensure smooth and silent conveying conditions in battery production systems, over long lifetime.

During the battery production process, a battery is 'built' in several process steps. After each of these steps, the batteries are conveyed to the next production step.

The conveying system should not only provide smooth and silent running conditions, it should also have a long lifetime, while being exposed to chemical drip of some of the battery ingredients (electrolyte).

Best performance of these conveying systems will be achieved by using a fine-tuned combination of slide strip material & belt material. Superior materials for slide strip are designed for plastic-plastic sliding.

Key Requirements

- Very low wear of both belt and slide plates: no dust generation by both
- Very low friction; constant over time
- Low noise generation
- No melting at high speeds in corner tracks

Modular Belt in (lubricated) POM, PP, or UHMW-PE

TIVAR® Ultra Slide-SL UHMW-PE

Our Recommendation:

- TIVAR® Ultra Slide-SL UHMW-PE (white)
- TIVAR® HPV FG UHMW-PE (blue)

Customer Benefits

- Longer service intervals
- Much longer belt lifetime
- Massive energy savings (due to 50-80% lower friction versus unfilled UHMW-PE)

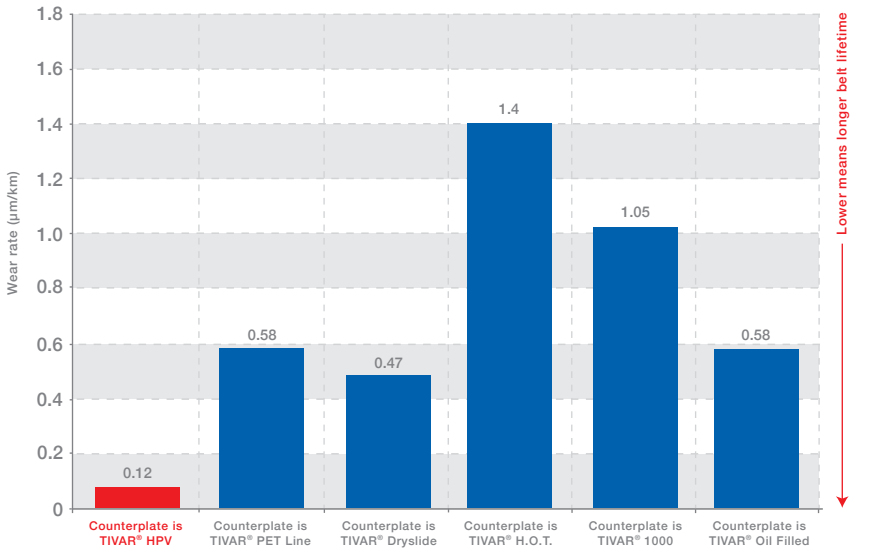
Why TIVAR® Ultra Slide-SL and TIVAR® HPV FG UHMW-PE?

Both these grades were specially developed for sliding in modular belt conveying systems. In these systems, there is high speed plastic-on-plastic sliding, which requires completely different tribological performance.

Due to the finetuned composition of these TIVAR® grades, they excel in performance in this demanding application, and provide great benefits for both OEM and end users.

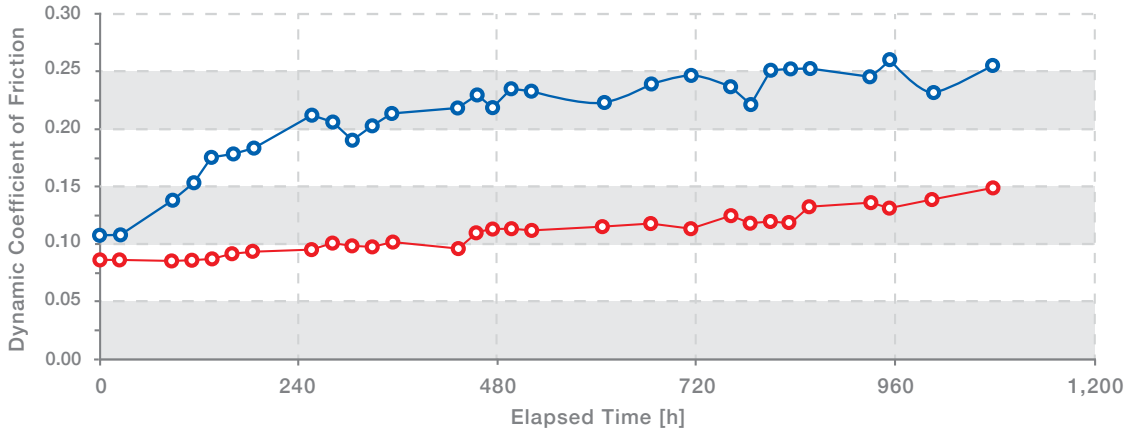
Lab testing: WEAR RATE of the POM C Pin

(measured on a "plastics pin on rotating disk" - tribo system, 3MPa pressure, 0.33m/s speed @23°C)



Linear conveyor test

50 meters/min; 0.018 MPa; wear of different slide strips while slipping against POM modular belt



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MCM RE 0005A | 10.9.19

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