

Groundbreaking PBT Hydrolysis Resistant Product Line

Meets **USCAR Class 2 and Class 3 Standards**

Polybutylene Terephthalate (PBT) is a thermoplastic polymer that holds a significant position among engineering plastics. Known for its durability, excellent mechanical properties, and chemical resistance, this material stands out in various industries. However, one of the most noteworthy characteristics of PBT is its hydrolysis performance.

The hydrolysis performance of PBT is a crucial advantage, particularly in the automotive sector, electrical and electronic applications, and household appliances. For anyone seeking reliability, durability, dimensional stability, and chemical resistance, PBT can be an ideal choice.

The automotive industry continues to concentrate on electrical vehicles day by day. This trend brings new requirements and new challenges to the industry. As a result of the harsh conditions, the parts are exposed to in electrical vehicles, such as sudden temperature increases and humidity in high current areas (head and rear lamp etc.), new test methods need to be developed. The SAE USCAR2 thermal shock test, which is one of the most accepted by the automotive industries among the other test methods, has been a test type that combines both sudden temperature and humidity changes.

Temp Class	Ambient Temperature Range	Typical Application
T1	-40 to +85°C	T1 is not recommended for new applications
T2	-40 to +100°C	Suitable for use in passenger compartment
T3	-40 to +125°C	Suitable for use in the engine compartment
T4	-40 to +150°C	Needed for some on-engine applications near hot components
T5	-40 to +175°C	For use as needed - No specific applications are identified as T5

Key features and benefits of PBT hydrolysis resistance:

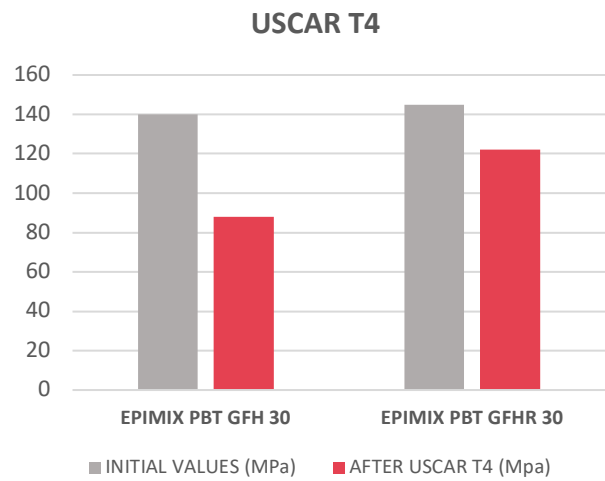
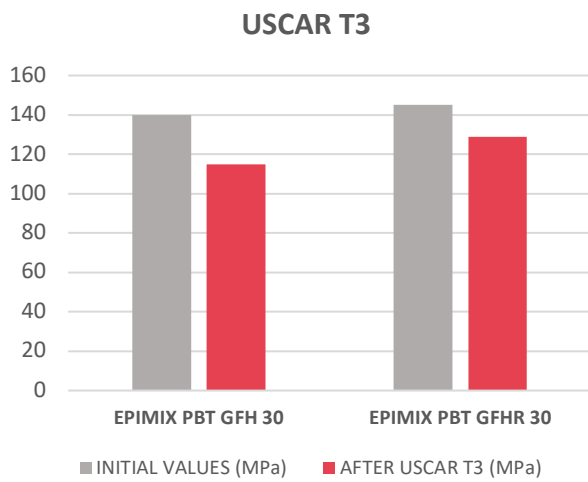
1. **Superior Durability:** Engineered to resist hydrolysis, ensuring long-lasting performance.
2. **Excellent Material Stability:** Our products remain stable even in the presence of water, heat, and chemicals.
3. **Wide Range of Applications:** Suitable for electrical connectors, housings, sensors, switches, and other critical automotive components.
4. **Consistent Quality:** Our manufacturing processes adhere to strict quality control measures.
5. **USCAR Class 3 and Class 4 Compliance:** Our products meet the highest industry requirements, providing peace of mind to automotive manufacturers.



Epsan developed two new grades to meet the new market needs. **EPIMIX PBT GFHR 30** and **EPIMIX PBT GFI 30 HR** grades show excellent thermal shock resistance under specified USCAR2 test conditions.

PBT GFH 30 grade shows excellent retention at **Class 3** test conditions which is significant for high temperature and humidity environments for automotive connector parts.

EPIMIX PBT GFHR and **EPIMIX PBT GFI 30 HR** still demonstrate good retention values even at **Class 4** test conditions where most PBT grades fail OEM requirements.



Note:

- EPIMIX PBT GFH 30 (hydrolysis resistance grade)
- EPIMIX PBT GFHR 30 (**superior** hydrolysis resistance grade)