

# Genestar™

## The Smart Choice for FCV Stack Manifold

GENESTAR™ is a brand name of heat resistant polyamide developed by Kuraray. GENESTAR™ PA9T series in that brand is a well-balanced long-chain polyphthalamide (PPA) that combines low water absorption and high mechanical properties over a broad temperature range.

With the concern of pollution and the need to create a sustainable future, there is a push for automobiles to be moved by green energy. One such green energy is fuel cell, where a fuel cell combines hydrogen and oxygen to produce electricity, heat and water.

The requirements for stack manifold are as follows:

- Acid resistance
- Toughness at low temperature
- Volume resistivity at high temperature and water condition
- Low ion extraction

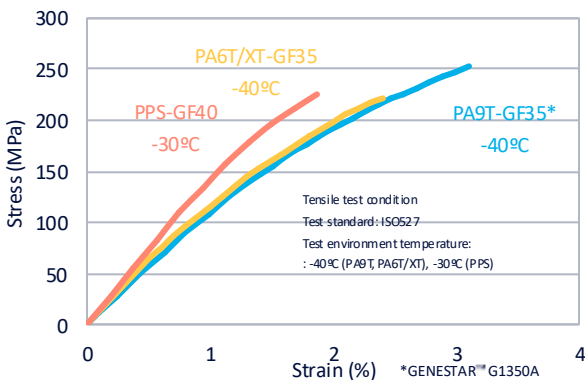
GENESTAR™ PA9T offers the following advantages (not limited to) that meet these requirements:

- Good acid resistance compared to other P(P)As

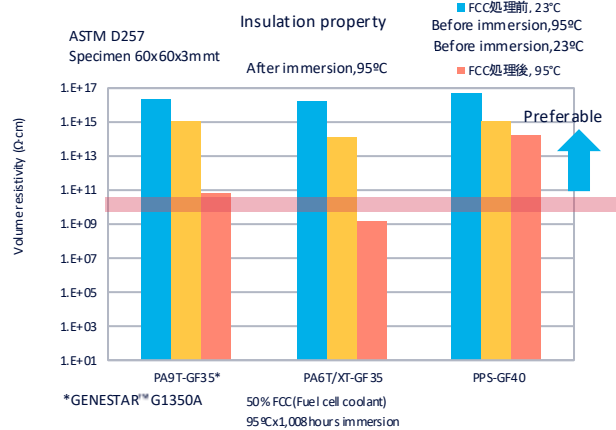
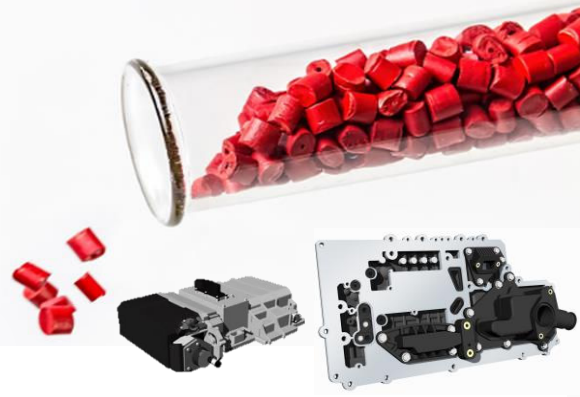
Retention of tensile strength (%)	PA9T*	PA6T/6I/66	PA46	PA66
Engine oil	98	91	98	94
Methanol	86	61	64	50
Sulphuric acid (10% aq.)	89	78	50	64
Sodium hydroxide (50% aq.)	96	89	95	94
Hot water (80°C)	86	65	64	55

- Toughness at low temperature(S-S Curve)

\*GENESTAR™ N1000A



- Acceptable volume resistivity at high temperature and immersion in water



- Low ion extraction which contributes to longer power generation performance of the fuel cell

Materials	μg/g					mg/L	
	Ca	Si	S	Fe	K	Cl	Br
PA9T-GF35*	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PA6T/XT-GF35	N.D.	N.D.	6.0	N.D.	6.4	0.2	27.7
PPS-GF40	N.D.	N.D.	10.6	N.D.	N.D.	N.D.	N.D.

50% FCC (Fuel cell coolant), 95°Cx1,008 hours immersion

\*GENESTAR™ G1350A

Ca, Si, S, Fe, K (μg/g) : ICP-AES

Cl, Br (mg/L) : Ion Chromatography

If the information in this article is of interest to you, please find the contact details below to get in touch with us.

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