

# NOF<sup>®</sup>-ALLOY TZ series



## 1 About NOF<sup>®</sup>-ALLOY TZ Series

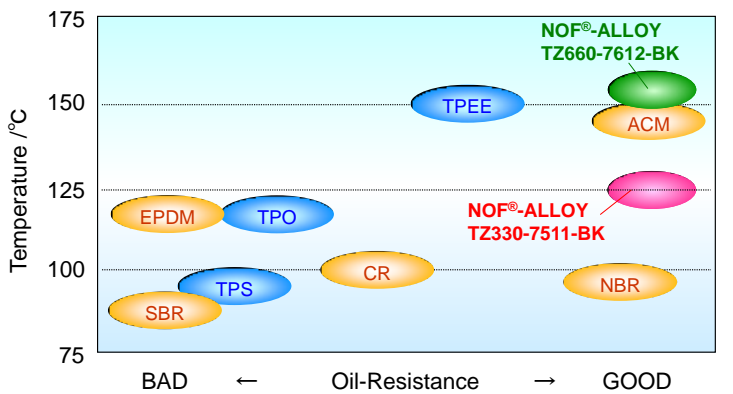
**NOF<sup>®</sup>-ALLOY TZ Series** has some excellent properties, especially oil-resistance and high thermal-resistance.

**NOF<sup>®</sup>-ALLOY TZ Series** is a high-performance thermoplastic elastomer which consists of acrylic rubber and polyolefin (or polyester).

## 2 Features of NOF<sup>®</sup>-ALLOY TZ Series

### ① Excellent oil and heat resistance

**NOF<sup>®</sup>-ALLOY TZ Series** shows both excellent oil-resistance and high thermal-resistance properties in comparison to other materials.



TPO : Thermoplastic olefin elastomer      TPS : Thermoplastic styrene elastomer  
 TPEE : Thermoplastic polyester elastomer      EPDM : Ethylene-propylene-diene rubber  
 SBR : Styrene-butadiene rubber      CR : Chloroprene rubber  
 NBR : Acrylonitrile-butadiene rubber      ACM : Acrylic rubber

Fig.1 Comparison of Oil-resistance and Heat-resistance

### ② Excellent adhesion property

**NOF<sup>®</sup>-ALLOY TZ Series** has an excellent adhesive property for other resins.

Table 1 Adhesion for resins

Resin	NOF <sup>®</sup> -ALLOY TZ330-7511-BK	NOF <sup>®</sup> -ALLOY TZ660-7612-BK
PP	Adhesive	No Adhesive
ABS	No Adhesive	Adhesive
PC	No Adhesive	Adhesive
PC/ABS	No Adhesive	Adhesive
PBT	No Adhesive	Adhesive

(Evaluation method)

1. The other resin plate is set into a cavity of the mold.
2. NOF<sup>®</sup>-ALLOY is molded toward the plate by injection method.
3. The adhesion property of the interface between NOF<sup>®</sup>-ALLOY TZ and other resins is checked by peeling.

## 3 Application of NOF<sup>®</sup>-ALLOY TZ Series

**NOF<sup>®</sup>-ALLOY TZ Series** has an excellent adhesive property for other resins. Due to this property, **NOF<sup>®</sup>-ALLOY TZ Series** can be molded with other resins by double molding method.

**NOF<sup>®</sup>-ALLOY TZ Series** is molded by some common methods (extrusion, injection, blow etc.), and used for Air ducts, Covers and Seals of automotive application. Especially **NOF<sup>®</sup>-ALLOY TZ Series** is a suitable material for packing, and gaskets of automotive and industrial application because of the excellent elasticity.



Fig.2 Double molding

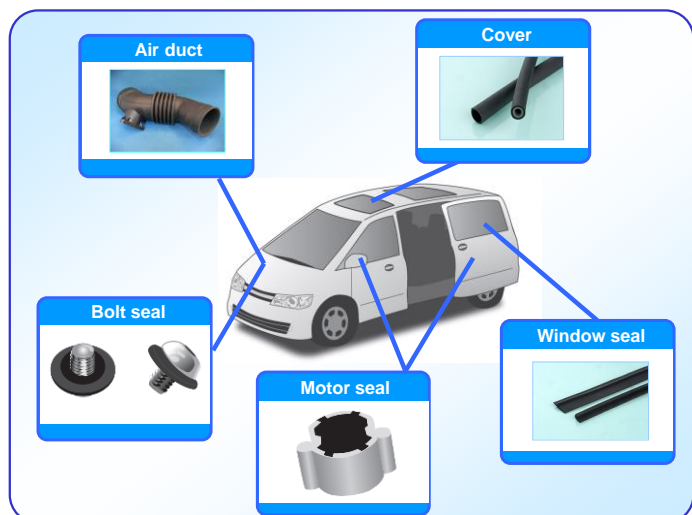


Fig.3 Application of NOF<sup>®</sup>-ALLOY TZ Series

## 4 Physical properties of NOF<sup>®</sup>-ALLOY TZ Series

The physical properties of **NOF<sup>®</sup>-ALLOY TZ Series** are shown in Table 2.

Table 2 The physical properties of NOF<sup>®</sup>-ALLOY TZ Series

Item	Test method	Unit	Normal grade	High thermal-resistance grade	
			NOF <sup>®</sup> -ALLOY TZ330-7511-BK	NOF <sup>®</sup> -ALLOY TZ660-7612-BK	
Physical properties	Density	ASTM D 792	Mg/m <sup>3</sup>	1.00	1.13
	Melt flow rate <sup>1)</sup>	ASTM D 1238	g/10min	8	3
	Hardness <sup>2)</sup>	ASTM D 2240	—	A75	A79
Mechanical properties	Strength at break <sup>3)</sup>	ASTM D 412	MPa	4	7
	Elongation at break <sup>3)</sup>		%	200	200
	100% Modulus <sup>3)</sup>		MPa	3	5
Thermal property	Brittleness temperature	ASTM D 746	°C	-45	-47
Property like rubber	Compression set <sup>4)</sup>	ASTM D 395	%	58	40
Oil resistance	Ratio of weight change <sup>5)</sup>	ASTM D 471	%	15	5
Melting point			°C	155	225
Available temperature range			°C	-40~120	-40~150

1) TZ330; 190°C×5kg, TZ660; 260°C×10kg, 2) 5 seconds later, 3) Number 3 dumbbell shaped specimen, elongation rate; 500mm/min

4) 120°C×24h, 25% compression 5) IRM903 oil (TZ330; 120°C×72h, TZ660; 150°C×72h)

\* The values in the table are typical values and not verified values.

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