

Changing of insulation ring

HR-3UWX(Twicell label)

Dec. 2016

FDK CORPORATION
Ni-MH Battery Group
Business Development Division

Changing of insulation ring

Change notice of insulation ring material

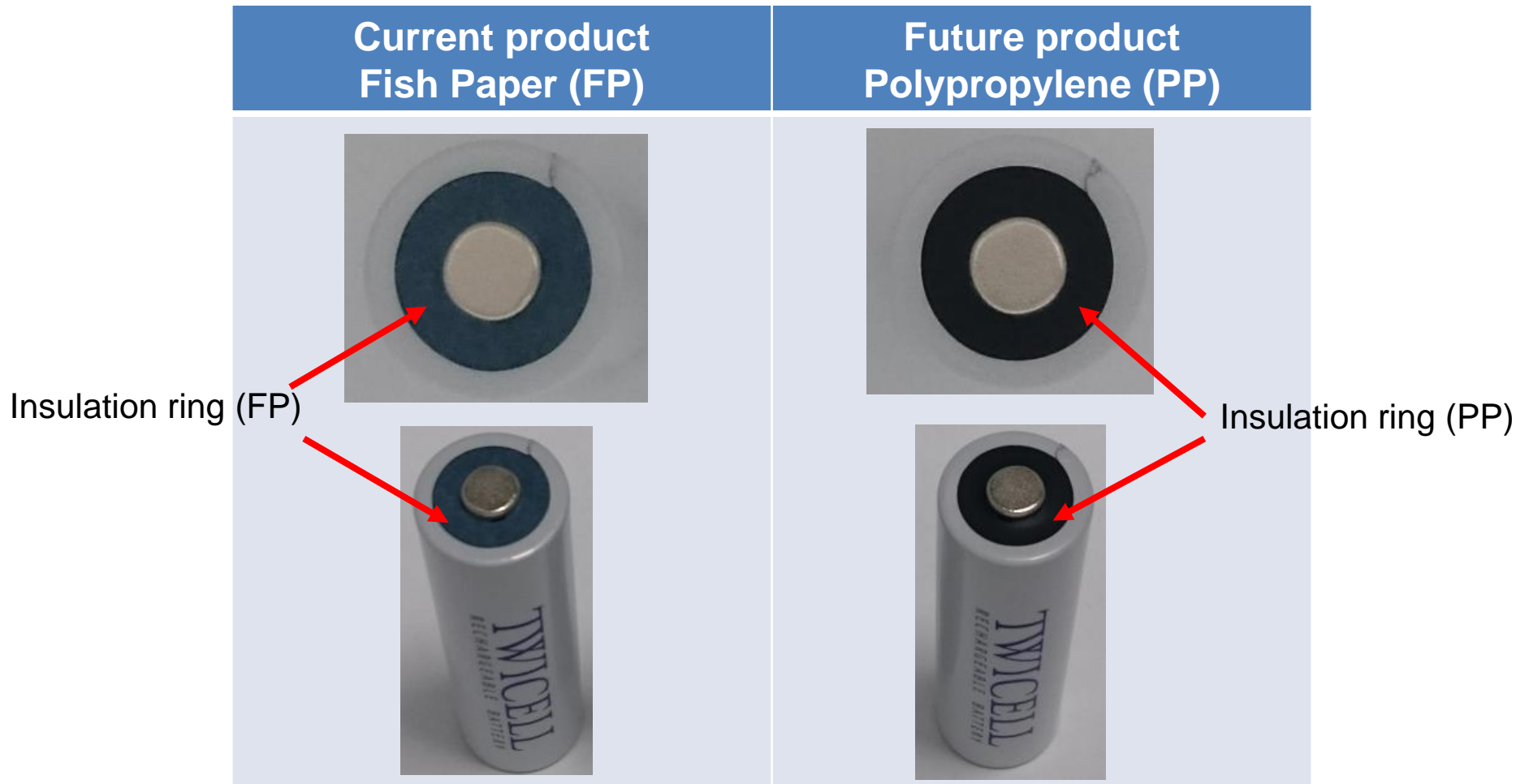
Background

Currently, insulation ring material of HR-3UWX used “Fish Paper(FP)”. However, the main customer of HR-3UWX shifted to “Polypropylene(PP)”. Therefore “FP” usage amount has decreased. In order to maintain a stable cost in the future, please switch to “PP” as well.

Schedule	CY2016		CY2017
	Nov.	Dec.	Jan.
Mass production schedule	Fish Paper (FP)		Polypropylene(PP)

Appearance comparison

The color of insulation ring changes from gray to black. The surface texture of “PP” comes with gloss.



Characteristic comparison

	Current product Fish Paper (FP)	Future product Polypropylene (PP)
Material	Paper	Polypropylene
Color and Design ability	Gray Color unevenness	Black Little color unevenness Gloss
Quality	Moisture absorption	No moisture absorption
Insulation performance (Strength)	Weaker than PP	Stronger than FP
Insulation performance (Withstand voltage:500V)	No conduction	No conduction
Heat-resistant performance	Strong	Somewhat weaker than FP (No problem in practical use)

Fish paper(current product)

Regarding HR-3UWX, we have used fish paper for insulation ring so far from battery design. As a feature of FP, there were issues such as moisture absorption due to paper and deterioration of appearance due to color unevenness.

Polypropylene(future product)

The insulation ring of PP has already been operated in some model of standard capacity type. Since the operation method was established with the existing standard capacity type, it is possible to switch without cost increasing in HR-3UWX.

Summary

- The colors and textures are different, because materials are different.
- There are slight differences in moisture absorption and heat resistance. However, it is usable without problems, because “PP” has adoption record of except for HR-3UWX.

We think that changing the insulation ring to “PP” will not cause any problem, so please approve the changing.

The image features a central light green hexagon with the text "Thank you" written in a blue, italicized serif font. Surrounding the hexagon are several cylindrical PDK batteries. The batteries are arranged in a circular pattern around the hexagon, with some standing upright and others lying horizontally. The PDK logo and "NIMH BATTERY" text are visible on the batteries. The background is white.

Thank you