FUJIFILM Value from Innovation

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Factor measurement method of Potassium Polyvinyl Sulfate Titration Solution (N/400) and declaration of the incorporated changes

Dear Sirs:

We would like to take this opportunity to express our thanks for your continued support. In the past, we received support from your patronage, for which we are very grateful.

Regarding the colloid titration reagent that you regularly use, we have decided to terminate the existing product for the reasons explained below, to introduce a new factor determination method, and to release a new product.

We appreciate your understanding and cooperation and kindly request you to use the new product in the future.

We will continue to strive to achieve product evaluation and quality control with the best advancing technology. Thanks again for your guidance.

［previous product］

Code No.	Product Name	Grade	Package Size
164-21655	Potassium Polyvinyl Sulfate Titration Solution (N/400)	for Colloidal Tritration	500mL

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［new product］

Code No.	Product Name	Grade	Package Size
167-28105	N/400 PVSK Solution	for Colloidal Titration	500mL

[Progress of changes and reasons]

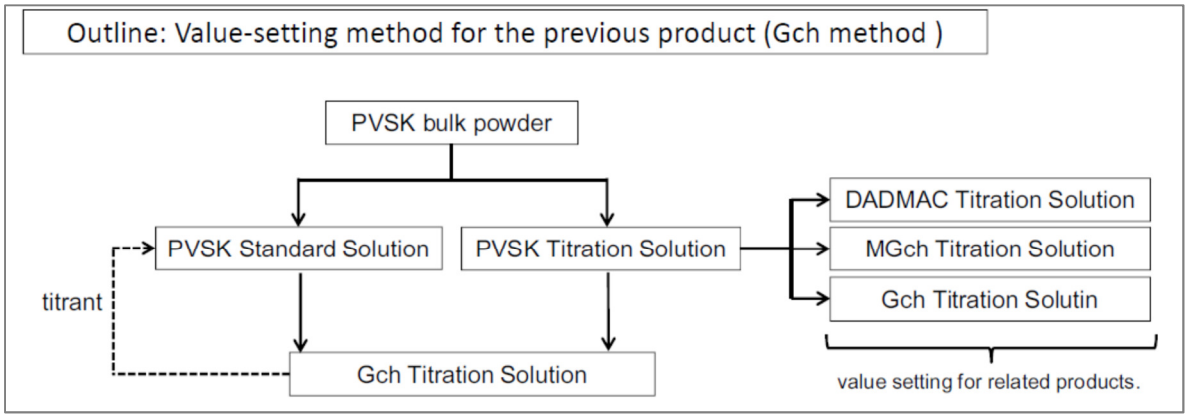
In the colloid titration method, Potassium Polyvinyl Sulfate Titration Solution is the reagent used as a reference. Recently, a decision has been taken by us for employing traceability based on international units (SI) to assure an internationally consistent measurement of values. In accordance with this endeavor, we performed repeated studies to quantify the Potassium Polyvinyl Sulfate Titration Solution. With cooperation from the National Institute of Advanced Industrial Science and Technology (AIST), we succeeded in developing a value-setting method adhering to the SI system. In the future, we intend to supply Potassium Polyvinyl Sulfate Titration Solution using a traceable evaluation expressed in SI units.

1. Changes in the measurement method

[Value-setting method for the previous product]

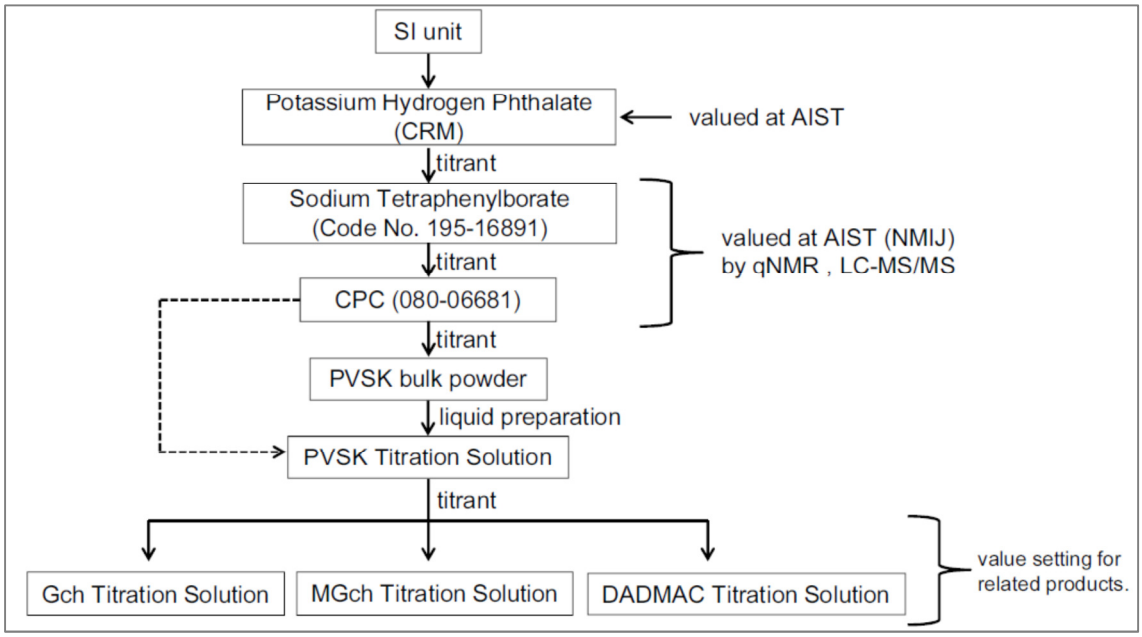
To date, the PVSK Titration Solution and the Gch Titration Solution were used for mutual value setting.

In addition, these titrants were not SI traceable.



[Value-setting method for the new product]

The PVSK Titration Solution is valued using CPC, which is itself valued at AIST and retroactively changes to a measurement method adhering to the SI unit system.



PVSK: Potassium Polyvinyl Sulfate / CPC: Hexadecylpyridinium Chloride

Gch: Glycol Chitosan / MGch: Methyl Glycol Chitosan

DADMAC: Poly(diallyldimethylammonium Chloride)

2. Related products

Along with the modification of the factor value measurement method of the PVSK titrant, the related product will be changed as follows:

［previous product］

Code No.	Product Name	Grade	Package Size
164-21655	Potassium Polycvinyl Sulfate Titration Solution(N/400)	For Colloidal Tritration	500mL
072-05045	Glycol Chitosan Titration Sokution(N/200)		500mL
137-14655	Methyl Glycol Chitosan Titration Solution(N/200)		500mL
161-14695	0.0025N Poly(diallyldimethylammonium Chloride)		500mL

↓

［new product］

Code No.	Product Name	Grade	Package Size
167-28105	N/400 PVSK Solution	For Colloidal Tritration	500mL
077-06715	N/200 Gch Solution		500mL
139-18875	N/200 MeGch Solution		500mL
042-34455	N/400 DADMAC Solution		500mL

* The sale of each bulk powder will be terminated. Please use each titration solution in the future according to our recommendations.

[Previous products] Sale of the following products will be discontinued:

Code No.	Product Name	Grade	Package Size
162-03071	Potassium Polycvinyl Sulfate	For Colloidal Tritration	10g
072-01581	Glycol Chitosan		10g
134-04731	Methyl Glycol Chitosan		10g

[Regarding dates of selling previous and new products]

We plan to launch the new product after June, 2018. The previous product is scheduled to be sold till the end of December, 2018, until stocks last. The previous product and the new product will be parallelly sold for 6 months.

3. Contact information

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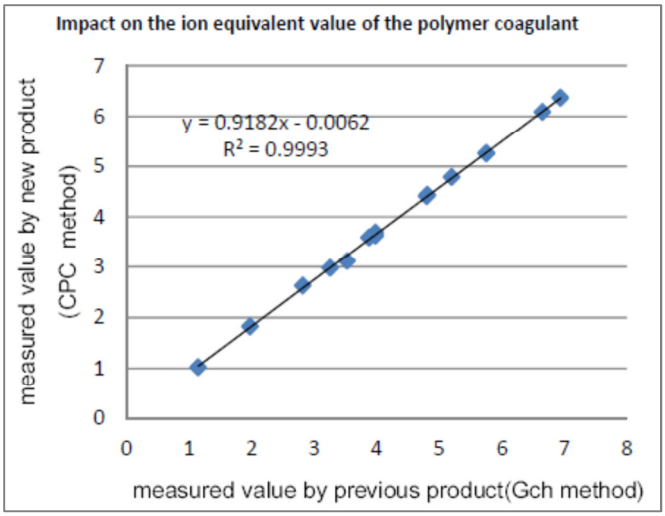
4. Reference information

[The impact on each product]

Regarding the impact on each product resulting from this modification, the measured analysis examples are as follows:

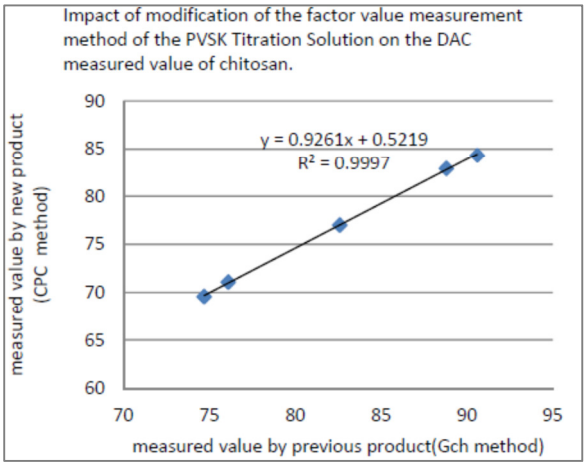
[Impact on the ion equivalent value of the polymer coagulant]

	Product Name	Ion equivalent (meq/g) Avg. Previous Product (Gch Method)	Ion equivalent (meq/g) Avg. New Product (CPC Method)	New/Previous (rate)
Company A	A-1	3.26	2.98	0.915
	A-2	6.94	6.37	0.918
	A-3	6.65	6.09	0.915
	A-4	5.75	5.26	0.915
	A-5	5.2	4.79	0.921
Company B	B-1	4.8	4.41	0.919
	B-2	3.53	3.12	0.885
	B-3	3.98	3.69	0.927
	B-4	1.98	1.83	0.926
	B-5	5.76	5.26	0.912
Company C	C-1	3.98	3.63	0.912
	C-2	1.15	1.03	0.899
	C-3	3.88	3.59	0.927
	C-4	2.82	2.63	0.932
	C-5	4.81	4.44	0.922
			Avg.	0.916



[Impact on the chitosan deacetylation degree (DAC)]

Chitosan Lot.	Previous Product (Gch method) DAC(%)	CV(%)	New Product (CPC method) DAC(%)	CV(%)	New/Previous (rate)
Chitosan A	74.7 ±0.3	0.4	69.6 ±0.3	0.4	0.93
Chitosan B	76.1 ±0.4	0.6	71.1 ±0.4	0.6	0.93
Chitosan C	82.6 ±0.5	0.6	77.0 ±0.5	0.7	0.93
Chitosan D	88.8 ±0.2	0.2	82.9 ±0.2	0.2	0.93
Chitosan E	90.6 ±0.4	0.4	84.3 ±0.4	0.5	0.93
	Avg.	0.4	Avg.	0.5	0.93



The abovementioned section contains reference information. There is no guarantee of similar results for all products.