

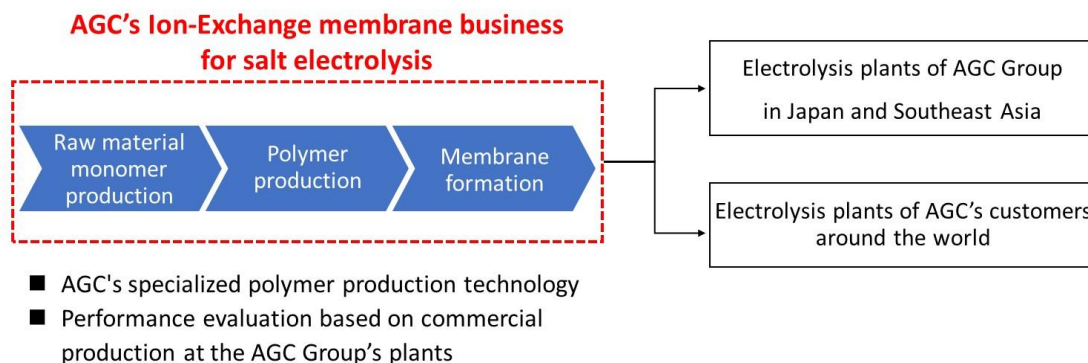
**AGC Launches New FORBLUE™ FLEMION™ Ion-exchange Membrane that  
Contribute to Reduction of Electricity Use in Salt Electrolysis Process  
- Helping to reduce GHG emissions from salt electrolysis plants around the world -**

**Tokyo, June 29, 2023** - AGC (Headquarters: Tokyo; President: Yoshinori Hirai), a world-leading manufacturer of glass, chemicals, and high-tech materials, has announced that it will begin selling a new [FORBLUE™ FLEMION™](#) ion-exchange membrane, manufactured and sold for use in salt electrolysis plants, in June 2023. The newly launched FORBLUE™ FLEMION™ F-9060 is capable to lower electrolysis voltage by approximately 40 mV\*<sup>1</sup> at salt electrolysis plants that produce caustic soda, etc., thereby reducing power consumption and contributing to reduce electricity costs and GHG emissions.

FORBLUE™ FLEMION™, a fluorinated ion-exchange membrane, is used in salt electrolysis plants to produce caustic soda and chlorine by the electrolysis of salt water and plays an important role in the production of caustic soda, chlorine, hydrogen and other various chemicals that support people's lives. AGC launched its ion-exchange membranes in 1975, and since has supplied them to more than 50 countries worldwide, in addition to installing them in its own Group's plants.

The newly released FORBLUE™ FLEMION™ F -9060 contains a new polymer, which was developed using AGC's specialized polymer production technology. This new polymer has a structure that allows ions to pass through more easily by increasing the ion exchange capacity\*<sup>2</sup>, contributing to further decrease of electrolysis voltage. The performance of this product has also been evaluated in commercial production at the Group's electrolysis plants.

Compared with AGC's current flagship product (F-9010), this product can reduce\*<sup>3</sup> electricity consumption per ton of caustic soda produced by approximately 28 kWh and GHG emissions by approximately 12 kg. It will be widely introduced to salt electrolysis manufacturers worldwide, whose production volume is estimated to be approximately 80 million tons per year\*<sup>4</sup>, thereby contributing to the reduction of electricity costs and GHG emissions on a global scale.



<Media inquiries>

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The AGC Group has set “Promotion of sustainability management” as one of the key strategies in its medium-term management plan, [AGC plus-2023](#), and is committed to contributing to solving social issues through materials innovation. AGC will promote the replacement with this product, which has a lower environmental impact, for electrolysis plants around the world, as well as replacing at its Group’s electrolysis plants in Japan and Southeast Asia.

<Notes>

\*1 Compared to AGC's current flagship product (F-9010).

This is based on the results of a long-term operation test with an AGC commercial electrolysis plants (operating current density of 6 kA/m<sup>2</sup>). The actual voltage decrease effect varies depending on the type of salt electrolyzer and various operating conditions. These results are based on AGC's own calculations and are not intended as performance guarantees.

\*2 The amount of a functional group that carries ions.

\*3 The amount of power consumption reduction is calculated by AGC based on the operating current density of 6 kA/m<sup>2</sup>, current efficiency of 97%, and certain other operating conditions. GHG emissions reductions are estimated by AGC based on the national average of 434 g-CO<sub>2</sub>/kWh, which is the emission factor for each electric utility (used to calculate the greenhouse gas emissions of specified emitters) published by the Ministry of the Environment this fiscal year. These calculations are based on AGC's own calculations and are not intended as performance guarantees.

\*4 AGC estimates.

<Reference>

The [FORBLUE™](#) brand is a family brand of AGC product line that provide a "separation" solution for chemical substances.

■ FORBLUE™ family product lineup

FORBLUE™ FLEMION™: Ion exchange for salt electrolysis (for the production of caustic soda, caustic potash, and chlorine)

FORBLUE™ SELEMION™: A multi-purpose ion-exchange membrane (for desalination of wastewater, etc., recovery and purification of marketable waste)

FORBLUE™ i series: Electrolyte polymer solutions for fuel cells

FORBLUE™ S Series: Ion exchange membranes for water electrolysis, redox flow batteries, various electrolysis and dialysis

FORBLUE™ sunsep™: Hollow fiber membrane type dryer/humidifier

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