**Product Description**

3M™ Ionomer 725EW and 800EW are copolymers of tetrafluoroethylene and perfluorobutanesulfonamide fluorovinyl ether, offered in equivalent weights of 725EW and 800EW. They are excellent for use in membranes and electrode formulations in PEM fuel cells and in other electrochemical applications.

The high proton conductivity of 3M ionomers creates the potential to achieve higher energy output with a smaller fuel cell stack. They may also allow a reduction in the amount of expensive platinum catalyst used in electrode applications, and in turn could reduce system cost. 3M ionomers feature a linear side chain and stabilized end groups for improved chemical durability – even in demanding electric vehicle applications.

**Storage and Material Handling**

3M ionomers should be stored under clean, dry conditions in the unopened original containers received from 3M. It is recommended to store the product at room temperature away from direct sunlight or other sources of heat or irradiation. These ionomers are hydroscopic and moisture content needs to be considered when preparing dispersions based on these materials. Keep containers tightly sealed to avoid moisture absorption.

**Product Form and Packaging**

These products are supplied in solid form and are packaged in plastic containers. They are available in 1kg, 10kg, and 25kg packages.

---

**Features and Benefits**

- High power output
- High proton conductivity at low relative humidity
- Low gas permeation
- Good mechanical strength at high relative humidity
- High thermal stability
- High chemical resistance
- Solid format provides maximum flexibility to customize product formulations
- Room-temperature dispersible in common solvent systems

**Typical Values**

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>725EW</th>
<th>800EW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Aspect</td>
<td>Off-White Granules</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ionomer Equivalent Weight</td>
<td>3M Internal Method*</td>
<td>725*</td>
<td>800*</td>
</tr>
<tr>
<td>Ion Exchange Capacity (meq/g)</td>
<td></td>
<td>1.38</td>
<td>1.25</td>
</tr>
<tr>
<td>Viscosity mPa-s @ 20°C/1s-1</td>
<td>3M Internal Method**</td>
<td>50-300</td>
<td>50-300</td>
</tr>
<tr>
<td></td>
<td>(60/40 n-propanol/water dispersion)</td>
<td>15% solids</td>
<td>20% solids</td>
</tr>
</tbody>
</table>

* FT-IR of polymer SO$_2$F content

**Experimental Product Information**

**Important Notice and Disclaimer:** These 3M products are experimental or developmental products that have not been introduced or commercialized for general sale, and its formulation, performance characteristics and other properties, specifications (if any), availability, and pricing are not guaranteed and are subject to change or withdrawal without notice.

**Note:** Data in this document are not for specification purposes.
Safety and Toxicology

This is a fluoroplastic material, so normal precautions observed with fluoroplastics should be followed. Before processing this product, be sure to read and follow all precautions and directions for use contained in the product label and the Safety Data Sheet. General handling/processing precautions include:

1. Process only in well-ventilated areas.
2. Do not smoke in areas contaminated with powder/residue from this product.
3. Avoid eye contact.
4. After handling this product, wash any contacted skin with soap and water.

Potential hazards, including evolution of vapors, can exist if processing occurs under excessively high temperature conditions. Vapor extractor units should be installed above processing equipment. When cleaning processing equipment, do not burn off any of this product with an open flame or in a furnace.

Important Notice and Disclaimer: These 3M products are experimental or developmental products that have not been introduced or commercialized for general sale, and its formulation, performance characteristics and other properties, specifications (if any), availability, and pricing are not guaranteed and are subject to change or withdrawal without notice. User is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user’s method of application. User is solely responsible for evaluating third party intellectual property rights and for ensuring that user’s use of 3M product does not violate any third party intellectual property rights. This 3M product is sold or made available “AS IS.” 3M MAKES NO WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OF NON-INFRINGEMENT OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damages arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

Technical Information: Technical information, recommendations, and other statements contained in this document or provided by 3M personnel are based on limited information and the accuracy or completeness of such information is not guaranteed. Such information is intended for persons with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.