Nafion™ PFSA Membranes

Version 3.0

Revision Date 06/29/2016  Ref. 150000002917

This document is for information only, provided voluntarily and not subsequent to regulatory requirement.

PRODUCT AND CONTACT INFORMATION

<table>
<thead>
<tr>
<th>Product identifier</th>
<th>Nafion™ PFSA Membranes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>N115, N115FP, N117, N117FP, N1110</td>
</tr>
<tr>
<td>Product Grade/Type</td>
<td>N115, N115FP, N117, N117FP, N1110</td>
</tr>
<tr>
<td>Company</td>
<td>The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America</td>
</tr>
<tr>
<td>Telephone</td>
<td>1-844-773-CHEM (outside the U.S. 1-302-773-1000)</td>
</tr>
</tbody>
</table>

Emergency telephone number

| Emergency contact | 1-866-595-1473 (outside the U.S. 1-302-773-2000) |

HAZARDS IDENTIFICATION

Potential Health Effects

Read the "Fluoropolymers Safe Handling Guide", Published by the Society of the Plastics Industry.

Skin

May irritate skin.

Eyes

May irritate eyes.

Inhalation

The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco. Repeated episodes of polymer fume fever may result in persistent lung effects.

Ingestion

Ingestion is not a likely route of exposure.

Physical and chemical properties

<table>
<thead>
<tr>
<th>Form</th>
<th>film, membrane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>natural colour</td>
</tr>
</tbody>
</table>
Odor : none
% Volatile : 0 %
Water solubility : insoluble

Stability and reactivity
Stability : Stable at normal temperatures and storage conditions.

Conditions to avoid : To avoid thermal decomposition, do not overheat. Abnormally long processing time or high temperatures can produce irritating and toxic fumes. Stable under normal conditions. Do not expose to temperatures above: 150 °C (302 °F)

Incompatibility : Powdered metals Finely divided aluminium, potent oxidizers like fluorine (F2), and, related compounds

Hazardous decomposition products : Decomposes with heat., Carbonyl fluoride, Hydrogen fluoride, Fluorinated hydrocarbons, acid fluorides, Sulphur oxides

Hazardous reactions : During drying, cleaning and moulding, small amounts of hazardous gases and/or particulate matter may be released. These may irritate eyes, nose and throat. Large molten masses may give off hazardous gases.

INFORMATION ON INGREDIENTS
This product does not contain any components that require disclosure according to OSHA Hazard Communication Standard 2012.

FIRST AID MEASURES

Description of first aid measures
General advice : Never give anything by mouth to an unconscious person. No hazards which require special first aid measures. When symptoms persist or in all cases of doubt seek medical advice.
**Inhalation**: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Consult a physician.

**Skin contact**: No hazards which require special first aid measures. Wash off with soap and water. Cool skin rapidly with cold water after contact with molten material. Do not peel polymer from the skin. Consult a physician.

**Eye contact**: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

**Ingestion**: Not a probable route of exposure. However, in case of accidental ingestion, call a physician.

**Indication of any immediate medical attention and special treatment needed**

**Treatment**: Treat symptomatically.

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**FIREFIGHTING MEASURES**

**Extinguishing media**

Suitable extinguishing media: Carbon dioxide (CO2), Dry powder, Foam, Water

**Special hazards arising from the article**

Specific hazards during firefighting: Hazardous thermal decomposition products: Carbon oxides acid fluorides Fluorinated compounds Hydrogen fluoride Sulphur oxides

**Advice for firefighters**

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Wear suitable protective equipment. Wear neoprene gloves during cleaning up work after a fire.

Further information: Protect from hydrogen fluoride fumes which react with water to form hydrofluoric acid. The solid polymer can only be burned with difficulty. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
### ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

- **Personal precautions**: Ventilate the area. Refer to protective measures listed in sections 7 and 8. Material can create slippery conditions.

**Environmental precautions**

- **Environmental precautions**: No special environmental precautions required.

**Methods and materials for containment and cleaning up**

- **Methods for cleaning up**: Use mechanical handling equipment.

### HANDLING AND STORAGE

**Precautions for safe handling**

- **Advice on safe handling**: When opening containers, avoid breathing vapours that may be emanating. Avoid breathing dust. Avoid contamination of cigarettes or tobacco with dust from this material. Provide appropriate exhaust ventilation at dryers, machinery and at places where dust or volatiles can be generated. In case of insufficient ventilation, wear suitable respiratory equipment. For personal protection see section 8.

- **Advice on protection against fire and explosion**: Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

**Conditions for safe storage, including any incompatibilities**

- **Storage temperature**: 10 - 30 °C
**Article Information Sheet**

**Nafion™ PFSA Membranes**

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Other data : Stable under recommended storage conditions.

**EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering controls**

Ensure adequate ventilation, especially in confined areas. Good general ventilation should be provided to keep dust concentrations below the exposure limits. Local exhaust ventilation should be employed to minimize airborne contamination.

**Personal protective equipment**

**Respiratory protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Air purifying respirators may not provide adequate protection. In the case of hazardous fumes caused by overheating, wear self-contained breathing apparatus.

**Hand protection**

Material: Gloves

Additional protection: When handling hot material, use heat resistant gloves. Protective gloves (Type: Kevlar® - heat resistant, use possible until worn out)

**Eye protection**

Solid form: Safety glasses with side-shields

Molten form: Wear coverall chemical splash goggles and face shield when the possibility exists for eye and face contact due to splashing or spraying of material. Wear safety glasses with side shields.

**Skin and body protection**

If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear.

**Exposure Guidelines**

**Exposure Limit Values**

<table>
<thead>
<tr>
<th>Dust (inhalable and respirable fraction)</th>
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</thead>
<tbody>
<tr>
<td>TLV (US ACGIH)</td>
</tr>
<tr>
<td>TWA Respirable particles.</td>
</tr>
<tr>
<td>TWA Inhalable particles.</td>
</tr>
<tr>
<td>Permissible (OSHA_TRA)</td>
</tr>
</tbody>
</table>

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exposure limit: NS) TWA Respirable fraction.
15 mg/m³ TWA Total dust.

Contains no substances with occupational exposure limit values.

DISPOSAL CONSIDERATIONS

Waste treatment methods
Product: Like most thermoplastic plastics the product can be recycled. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Can be landfilled, when in compliance with local regulations. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other acidic combustion products.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

REGULATORY INFORMATION

California Prop. 65: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

OTHER INFORMATION

Restrictions on use
Do not use or resell Chemours™ materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless agreed to by Seller in a written agreement covering such use. For further information, please contact your Chemours representative.

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