

# 3M™ Ionic Liquid Precursor HQ-115IL

## Introduction

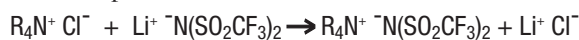
3M™ Ionic Liquid Precursor HQ-115IL is an aqueous solution of  $\text{Li}^+ \text{N}(\text{SO}_2\text{CF}_3)_3$  (nominally 80% by weight solids in water). The anion, bis(trifluoromethanesulfonyl)imide, is useful in the manufacture of ionic liquids for use in a variety of applications including polymer antistats, electrolytes, and chemical process solvents.

## Advantages

Fluorinated anions like bis(trifluoromethanesulfonyl)imide in 3M Ionic Liquid Precursor have a number of advantages in ionic liquid applications.

- **Hydrophobic** – low solubility in water and good durability
- **Lipophilic** – improved solubility in organics polymers
- **Excellent Ionic Conductivity** – minimal ion pairing
- **Highly Stable** – electrochemical, thermal, light, and hydrolytic stability
- **Simplified Handling and Improved Industrial Hygiene** – Aqueous concentrate, no solids handling, no dust, low liquid viscosity
- **Rapid Ion Exchange** – readily undergoes ion exchange (metathesis) with organic onium salts in water to yield hydrophobic ionic liquids.

For example:



- IL product readily phase separates from water phase containing byproduct ions ( $\text{Li}^+ \text{Cl}^-$  in this case)
- Easy product isolation and purification by liquid-liquid phase separation followed by washing of IL phase with water
- Organic cosolvents that are non-miscible with water and selectively dissolve product salt may be used to facilitate ion exchange process (e.g., methylene chloride, methyl t-butyl ether, ethyl acetate)
- **Water Based Processing** – 3M™ Ionic Liquid Precursor HQ-115IL may also be used as an antistatic additive in water-based or water-compatible polymer systems.

## Specifications

**Note:** The following technical information and data should be considered representative or typical only and should not be used for specification purposes. All values determined at 77°F (25°) unless otherwise specified.

Properties	3M Ionic Liquid Precursor HQ-115IL
% Solids	78.0 - 82
Assay	99.7 Minimum
pH	6.0 - 10.5

## Physical Properties

Properties	3M Ionic Liquid Precursor HQ-115IL
Viscosity (at 25.0°C)	16.5 ± 0.2 Centipoise
Boiling Point at 760 mm Hg	139.9°C
Freezing Point	-10°C

## Product Safety and Handling:

- 3M Ionic Liquid Precursor HQ-115IL solution is **CORROSIVE** to the skin and eye. Use appropriate Personal Protective Equipment (PPE) to prevent skin and eye exposure (see MSDS).
- Avoid creating mists, vapors or sprays unless managed under engineering controls or prevent exposure via inhalation through appropriate PPE (see MSDS).
- Thermal decomposition may produce noxious vapors and gases. Use engineering controls or PPE to protect from potential exposure.
- 3M Recommends that 3M Ionic Liquid Precursor HQ-115IL be disposed of via incineration in an industrial or commercial facility in the presence of combustible material. Combustion products will contain HF.
- Do not release to open water. See MSDS for procedures related to accidental release measures.
- Please refer to the Material Safety Data Sheet and product label for safety, health, and environmental information before using product. Material Safety Data Sheets are available from your local 3M sales representative.



# 3M™ Ionic Liquid Precursor HQ-115IL

## For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-810-8513. Address correspondence to: 3M, Electronics Markets Materials Division, 3M Center, Building 224-3N-11, St. Paul, MN 55144-1000. In Canada, phone: 1-800-364-3577.

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