



# E-Mobility

## Glycol-Coolant Purification Solutions for Electric Vehicle Applications

### Glycol-Coolant Purification

It is vital that the coolant loops for lithium-ion battery electric and fuel cell electric systems are kept clean from contaminants. For electric vehicle (EV) manufacturers and system producers, who need a way to maintain high levels of purity within the coolant loop, DuPont has developed the next generation of ion exchange resins to support the transportation sector.

A thermal management or cooling system utilizes liquid coolant within a closed loop. Coolant, typically a glycol-water mixture, circulates the closed network of channels, hoses, and components. Over time with exposure to high temperatures, components within the loop degrade, impacting the conductivity and pH levels, directly impacting the integrity and performance of the system.

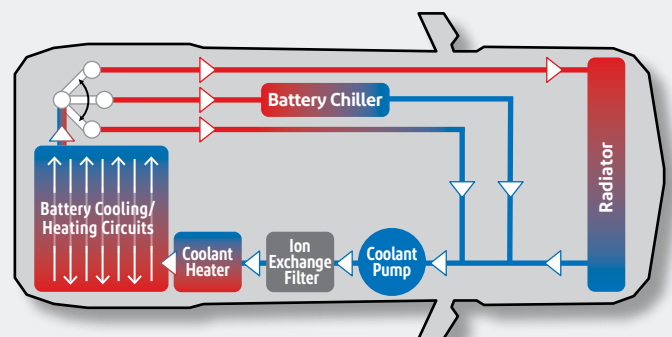
To ensure low conductivity with safe, reliable and sustainable performance of the system it is recommended to use an ion exchange filter. Ion exchange filters are a standalone component comprised of ion exchange resins which effectively purify contaminants from the coolant loop and protect the integrity of the electric vehicle.

### Enabling Clean Coolant Loops

For Tier 1 suppliers and manufacturers who design and operate coolant purification systems for EVs, DuPont offers Amberlite™ EV2X resin, a new, reliable, high-quality ion exchange resin

that has enhanced thermal stability and excellent operating capacity. This resin can purify contaminants with minimal uptake of glycol additives; providing safe low conductivity, and long lifetime of both the glycol coolant and the ion exchange filter.

### Schematic of EV Cooling System with an Ion Exchange Filter



DuPont™ AmberLite™ EV2X resin is an ideal resin for ion exchange resin filters in glycol coolant loops.

AmberLite™ EV2X resin is an optimized solution that offers clean coolant and meets the green mobility industry standards. DuPont has a highly skilled team of customer-focused scientists with extensive expertise and the latest application data to demonstrate our solutions to the latest coolant purification challenges.



### Enhanced Thermal Stability

AmberLite™ EV2X resin achieves enhanced thermal stability by leveraging DuPont's resin technology. Capable of purifying contaminants at operational temperatures up to 105 °C, our resin withstands extreme operational conditions longer than standard ion exchange resins.



### Excellent Operating Capacity

Due to AmberLite™ EV2X resin's enhanced thermal stability it retains its total capacity at high temperatures over 1,000 hours. This exceeds the standard maintenance cycle of typical ion exchange purifiers, extending the filter service life.



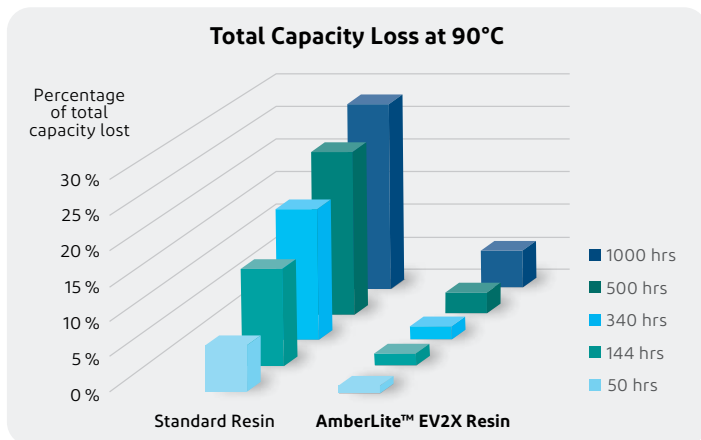
### Optimized Purification

AmberLite™ EV2X resin is optimized to purify glycol, removing plastic leachables, metals ions, and other impurities, as well as to minimize glycol additive uptake. This helps extend the life of the glycol coolant resulting in less glycol maintenance.

## Excellent Thermal Stability and High Operational Capacity

One of the most critical factors to consider is the temperature to which the resin and the glycol is submitted. Due to the high operating temperatures within the coolant loop, degradation will occur, creating impurities that can impact the performance of the coolant, battery systems and ion exchange filter.

The new DuPont™ AmberLite™ EV2X resin has been tested and validated under extreme conditions for over 1,000 hrs and is specified for use up to 105°C. It retains its high total capacity compared to standard ion exchange resins.



## DuPont Water Solutions

As a global market leader in ion exchange resins, with over 80 years of experience, DuPont offers application specific products for use in e-mobility vehicles. With our solutions we are helping the electrification of the transportation industry, empowering the world with the essential innovations to thrive.

Contact us today, for product samples and support.

<https://www.dupont.com/water/contact-us.html>



### Water Solutions

[www.dupontwatersolutions.com](http://www.dupontwatersolutions.com)

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