

November 9, 2017  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Re: The Chemours Company (Chemours) comments on the HFC Reduction Measures Rulemaking

Chemours appreciates the opportunity to provide comments regarding the California Air Resources Board (CARB) Hydrofluorocarbon (HFC) Reduction Measures Rulemaking ("HFC Rulemaking") in order to meet Senate Bill 1383 statutory requiring CARB to reduce HFCs by 40% by 2030 compared to 2013 levels. Chemours is a global leader in the production and sales of numerous products that could be affected by these draft regulations, and the regulations when finalized could have significant impact on Chemours fluorochemical business, as well as on our customers.

CARB has announced its intention to adopt into state regulations, with any appropriate modifications, the U.S. Environmental Protection Agency's (U.S. EPA) Significant New Alternatives Policy (SNAP) Rule provisions as they relate to prohibitions on certain hydrofluorocarbons (HFCs) in stationary refrigeration and air conditioning end uses; and further evaluate the proposed HFC mitigation strategies identified in CARB's adopted Short Lived Climate Pollutant (SLCP) Strategy for potential future rulemakings.

Chemours comments are focused on the adoption of the US EPA SNAP Rules as we have already commented on other measures, and we believe there will be more information available in the coming months that might be helpful in CARB's analysis of the impact of additional measures that might be taken to be included in future comments. That being said, Chemours has reiterated some relevant points made in previous comments.

Chemours recommends the following related to the adoption of the US EPA SNAP rules and Section 608

- Chemours recommends that if CARB does move forward with the adoption of SNAP rules and Section 608 that they be as closely aligned to the existing SNAP rules and Section 608 as possible to avoid any disruption to industry's business and supply chain planning due to deviation from the existing rules. Chemours further recommends that any changes made to the SNAP rules and Section 608 include an evaluation with the diverse stakeholders interested in these supply chains to insure that any new measures can be successfully met. For example, CARB could adopt the requirements for light-duty automobiles for 2021
- Chemours recommends that CARB consider a mechanism such that as long as the SNAP rules and Section 608 are maintained at the federal level that CARB's measures related to the adoption of the SNAP rules would not go into effect.
- Chemours recommends that CARB discuss the incentives to be offered under the "Clean Car Program" with the auto industry and other interested stakeholders to insure that the incentives will be useful to the auto industry and support continued conversion to low GWP refrigerants. Alternately, Chemours recommends that CARB include the MY2021 requirement for low GWP light duty MVAC refrigerants for new vehicles sold in California in their rulemaking.
- Chemours recommends a discussion with the foam industry and interested stakeholders regarding possible solutions around encouraging transitions to low GWP alternatives for sectors not covered under Title XXIV Green Building Program for Construction foams.

#### Proposed HFC Mitigation Strategies

The nature of the regulatory approach taken to avoid future emissions will impact how successfully we achieve these goals. Coordinated efforts provide a much more effective model especially if they include viable, cost effective options that deliver significant reductions in direct and indirect GHGs through superior energy efficiency.

Chemours believes that there are some very effective ways that California can continue to complement national and international efforts to reduce HFC based GHG emissions while maintaining some of its long-term key principles such as maintaining technology and chemical neutrality and not sacrificing indirect GHG emissions due to less energy efficient solutions. The recommended actions and comments below seek to balance near term opportunity to address short-lived climate pollutants (SLCP) while not causing additional long-term issues by sacrificing energy efficiency. The recommendations also offer thoughts around removing barriers to transitions to low-GWP solutions and ways to minimize multiple impacts to California businesses all while supporting California's Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350 (SB 350)) which requires a doubling of energy efficiency savings by January 1, 2030.

#### Stationary Refrigeration and Air Conditioning

- Chemours concurs with CARB that the replacement of hydrochlorofluorocarbon (HCFC)-22 with higher GWP products will create a need for an additional transition and is less effective than replacements with more energy efficient solutions that have a 1,500 GWP or lower. Taking the latter action would provide clear direction to industry to drive conversion to <1,500 GWP (when options are available) but it does not negatively impact early converters to low-GWP or Zero ODP alternatives, and encourages lower GWP solutions rather than options that may only be interim solutions.
- Chemours recommends that there be an exclusion for very low temperature refrigeration (e.g. <-50C refrigeration) or other high-value, low-volume specialty-use applications without at least two available solutions especially if the only alternative is a flammable refrigerant limited in use due to the charge size required for that application. Chemours understands that CARB intends to develop those limits after additional research and stakeholder meetings and also after considering EPA SNAP-approved alternatives.
- Chemours recommends a clear definition of "new equipment" (EPA definition) to include not only new store installations, but any equipment installation in an existing store that increases the system capacity (i.e. greater number of cases, addition of a compressor, increase in compressor capacity, higher refrigerant charge size in the system, etc.) If a change is made to a store that meets this definition of "new equipment", the system should then be converted to a lower GWP alternative.
- Incentives should be used for transition to all potential alternative products, including fluorinated gases that will provide both direct benefits in GWP reduction and indirect benefits through maintaining or improving energy efficiency especially in the high ambient temperatures experienced in much of California. This will support rather than create additional challenges to meet the aggressive SB 350 goals regarding energy consumption.
- Chemours recommends that CARB continue and enhance its Refrigerant Management Program and consider extending it to non-fluorinated solutions. This will eliminate inadvertent long-duration leaks and venting of anthropogenic CO<sub>2</sub>, which has a very long atmospheric lifetime. This could also reduce indirect emissions of CO<sub>2</sub> from under-charged systems that are less energy efficient (as well as being unable to provide sufficient cooling compared to a properly charged unit).
- Finally, Chemours notes that there are lower GWP products available for refrigeration that can provide improvements in energy efficiency. Transition to the lower GWP products now can support SB 350 and other state energy conservation goals like those at the California Energy Commission rather than waiting for longer term very, very low-GWP products to become available.

#### Mobile Air Conditioning

- High-GWP Emissions from transportation are largely from mobile vehicle air-conditioning (MVAC). As MVAC credit programs are implemented under California and EPA light-duty vehicle GHG emission standards, and as the MVAC leakage standards are implemented under their heavy-duty vehicle GHG emission standards, the share of F-gas emissions from the transportation sector will decline. However, we believe that California has an opportunity to encourage transition to low-GWP solutions in MVAC in medium and heavy-duty vehicles with a mechanism similar to that utilized in the light-duty vehicle GHG emissions standards.
- In addition, CARB should:
  - Require refresher training for California service technicians so they become familiar with handling mildly flammable refrigerants like HFO-1234yf
  - Create incentives to encourage conversion in the Mobile Air Conditioning space especially for medium and heavy duty vehicles

### Conclusion

Chemours agrees with CARB that achieving success will require integrated planning, coordination, and collaboration among agencies, users and producers of alternatives, and other stakeholders. Chemours has several recommendations regarding the current direction as noted above and will provide more recommendations in the coming months. We look forward to continuing to work with CARB and other stakeholders in this important effort.

Sincerely,  
Helen Walter-Terrinoni  
The Chemours Company