



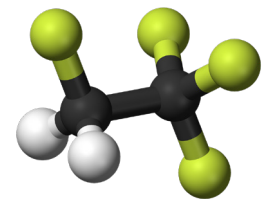
# Hydrofluorocarbons (HFCs): Climate Super-Pollutants

## What are HFCs?

Hydrofluorocarbons (HFCs) are a climate “super-pollutant”: greenhouse gases with hundreds to thousands of times the heat-trapping power of carbon dioxide (CO<sub>2</sub>). HFCs are synthetic gases used in air conditioning systems, aerosol propellants, foam blowing agents, solvents, and flame retardants. These gases were first developed as alternatives to ozone-depleting chemicals, but after their rollout it was learned that their release to the atmosphere during manufacturing processes and leakage during use, servicing, and retirement/replacement of equipment poses a grave threat to our climate.

## The Problem

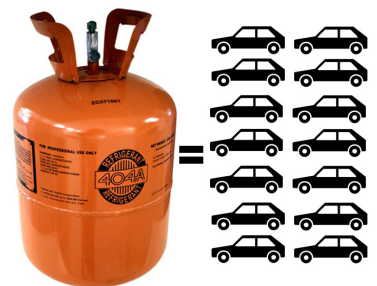
- When we say that HFCs can have 1,000 times the “global warming potential” of CO<sub>2</sub>, it means that one pound of some kinds of HFCs can have the same heat-trapping power as 1,000 pounds of CO<sub>2</sub>
- HFCs are the fastest growing source of greenhouse gas emissions both nationally and globally and could double within 20 years if left unchecked
- The climate forcing of HFCs in the atmosphere could lead to up to 0.9°F (0.5°C) of additional warming globally by 2100 on top of warming caused by other greenhouse gases



*HFC-134a, a commonly used HFC gas. One pound of HFC-134a has heat-trapping potential equivalent to more than 1,500 pounds of CO<sub>2</sub>. LD 226 as amended would prohibit the use of this climate super pollutant in most applications.*

## LD 226: Reducing HFCs to Fight Climate Change

- LD 226 will reduce the use of high-global warming potential HFCs in Maine by replacing them with climate-friendly alternatives where available
- The 2019 version of this bill, LD 2112, was amended by the Committee and unanimously voted ought to pass. This year’s amendment brings LD 226 into alignment with the amended version of last year’s bill with a few updates
- Sets a reasonable and orderly timetable for the transition to climate-friendly alternatives beginning in 2022
- Primary end-uses affected are air conditioning, refrigeration, foams, and aerosol propellants



one tank R-404A = annual fuel for 14 cars

## Economic Impacts

- As amended, LD 226 will align Maine with rules being developed by other US Climate Alliance states, creating consistency for manufacturers and businesses
- The bipartisan American Manufacturing and Innovation Act was signed into law in late 2020, directing the US Environmental Protection Agency to phase down HFCs
- HFC phase-downs and replacements with US technology are predicted to produce 33,000 new jobs in the US and \$12.5 billion in positive economic impacts

*HFC R-404A, a common refrigerant, has a global warming potential of 3,900, or nearly 4,000 times that of CO<sub>2</sub>. The warming potential from the release of one 30-lb. tank of R-404A is equivalent to driving more than 14 additional cars each year. LD 226 would prohibit the use of this climate super-pollutant in all but spacecraft uses (Image modified from California Air Resources Board.)*

Read the text of the LD 226, An Act To Limit the Use of Hydrofluorocarbons to Fight Climate Change, as amended [here \(link\)](#) or on the Committee On Environment and Natural Resources webpage.

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## LD 226 Timeline for End Use Prohibitions

Date	End Use (see legislation for HFCs prohibited by end use)
January 1, 2022	Aerosol propellants in new products New compact household refrigerators and freezers New household refrigerators and freezers New and retrofitted supermarket systems New and retrofitted remote condensing units Retrofitted stand-alone units New low- and medium-temperature units New refrigerated food processing and dispensing equipment New and retrofitted vending machines New rigid polyurethane and polyisocyanurate laminated boardstock New flexible polyurethane New integral skin polyurethane New polystyrene extruded sheet New phenolic insulation board and new phenolic insulation bunstock New rigid polyurethane slabstock and other new rigid polyurethane New rigid polyurethane appliance foam New rigid polyurethane in commercial refrigeration and new rigid polyurethane sandwich panels New polyolefin New rigid polyurethane marine floatation foam New polystyrene extruded boardstock and billet New rigid polyurethane low- and high-pressure 2-component spray foam New rigid polyurethane one-component foam sealants
January 1, 2023	New cold storage warehouses New built-in household refrigerators and freezers
January 1, 2024	New centrifugal chillers New positive displacement chillers
January 1, 2025	New foams, excluding rigid polyurethane one-component foam sealants, when used in space-related and aeronautics-related applications New rigid polyurethane high-pressure 2-component spray foams and new rigid polyurethane low-pressure 2-component spray foams, when used in military or space-related and aeronautics-related applications

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