



Opteon™

Moving Forward in HVAC with Opteon™ XL41 (R-454B)



Chemours™

Feb 2023

Cooling 2023 Award Winner – Opteon™ XL41 (R-454B)

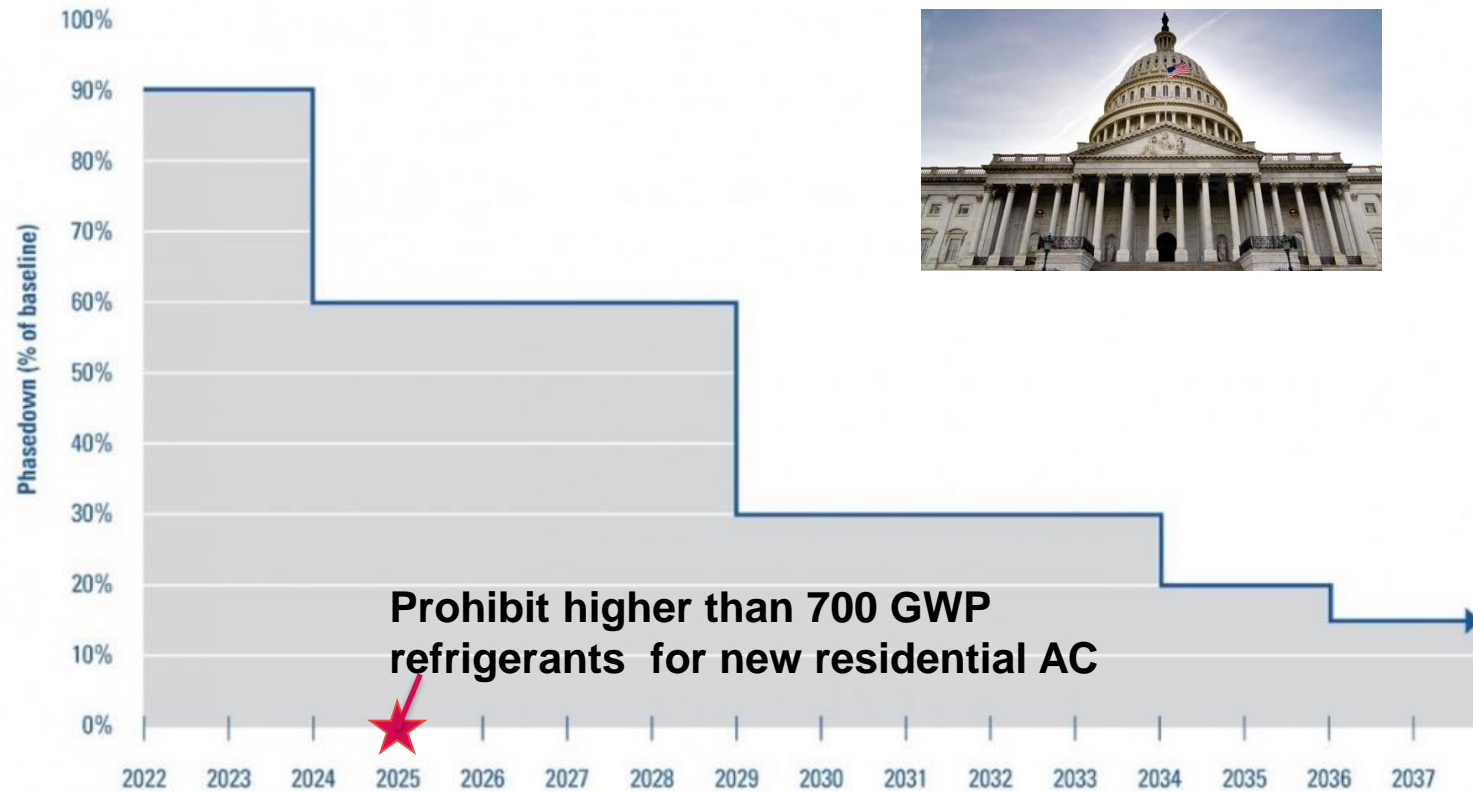
- It has the lowest Global Warming Potential (GWP) for R-410A like alternatives in new systems.
- It has very similar operating pressures and temperatures compared to R-410A.
- It has been selected by many leading air conditioning OEMs.



American Innovation and Manufacturing (AIM) Act

EPA administering 85% phasedown of HFCs (on a GWP weight-basis) by 2036

The following illustrates the HFC production and consumption phasedown schedule as outlined in the AIM Act.



1990s

R-410A

- HFC Blend
- No ODP
- GWP: 2088

Today & Tomorrow

Opteon™ XL41

- HFO Blend
- No ODP
- GWP: 466

Lowest GWP

(1) Ozone Depleting Potential
(2) Global Warming Potential (100-year, IPCC AR4)

Global Adoption of R-454B

ZENERAL HEATPUMP INDUSTRY CO., LTD.

Adopts Opteon™ XL41, low GWP refrigerant for their ZQS series heat pumps



Carrier Introduces Puron Advance™: The Next Generation Refrigerant for Ducted Residential, Light Commercial Products in North America

INDIANAPOLIS - Dec. 19, 2018

Carrier, in collaboration with The Chemours Company, will offer Puron Advance (R-454B) to meet UN Montreal Protocol Kigali Amendment regulations

Keeping with its long history of leading environmental responsibility, offering the refrigerant of the future. After extensive tests and evaluations,

Data Sheet YORK® ENERGY

YORK® YLAA Scroll Chiller with low-GWP R-454B



Leading the transition to the next generation of low-GWP refrigerants

York's scroll chiller platform is being redesigned to utilize low-GWP refrigerants. The global warming potential (GWP) is significantly lower than the high-GWP R-410A currently used in the HVAC scroll chiller platform, making it a more sustainable choice.

Rhoss chillers and heat pumps on R454B



Engie updates Pensum air-cooled chiller to R454B

20 NOV 2019




GI Industrial Holding adopts lower GWP refrigerant R454B

15 NOV 2019



MEHITS offers lower GWP refrigerants chillers

27 MAY 2019




Johnson Controls

PRODUCTS AND SOLUTIONS SERVICES AND SUPPORT INDUSTRIES INSIGHTS ABOUT US

Johnson Controls | Media Center | News | Johnson Controls Commits to R-454B as Future Environmentally Sustainable Refrigerant Solution in North America

Johnson Controls Commits to R-454B as Future Environmentally Sustainable Refrigerant Solution in North America

SHARE


- The next-generation, lowest Global Warming Potential (GWP) EPA SNAP approved refrigerant, produced by The Chemours Company, was chosen as the best solution to minimize environmental impact and energy use

MILWAUKEE, May 27, 2021 /PRNewswire/ -- Johnson Controls (NYSE: JCI), the global leader for smart, healthy and sustainable buildings, announced that R-454B will serve as the primary low Global Warming Potential (GWP) refrigerant in the company's ducted residential and commercial unitary products as well as air-cooled scroll chillers in North America and specific international markets where codes are in alignment. This transition away from the use of high-GWP refrigerants, such as R-410A, reinforces the company's commitment to addressing climate change and lowering customers' emissions for a healthier, more sustainable planet.

Trane Upgrades its Entire Scroll Compressor Portfolio with Low GWP R-454B Refrigerant

Date: 15 March 2021

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MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS

EUROPE: Chemours says that Mitsubishi Electric Hydronics & IT Cooling Systems has selected Opteon XL41 (R454B) for its multi-scroll chiller platform, and Opteon XL41 (R454B) for its screw and centrifugal oil free chiller platform, produced by MEHITS, which was formed in 2016 from the merger of the former businesses, has selected Opteon XL41 (R454B) for its multi-scroll chiller platform, and Opteon XL41 (R454B) for its screw and centrifugal oil free chiller platform, produced by MEHITS.

Why OEMs Select Opteon™ XL41 (R-454B)

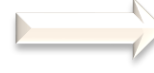
Key Characteristics

Lowest GWP of all approved R-410A-like alternatives

Similar operating conditions to R-410A and compatible with POE lubricants

Near-performance match to R-410A with improved efficiency

Broader operating maps at lower ambient temperatures



Benefits

Enables **equipment production longevity** as HFC refrigerants phase down

Minimum design changes and fast “learning curve”

Can leverage many **existing R-410A components**

Enables **heat pump adoptions** to drive electrification and reduce fossil fuels dependency

Opteon™ XL41 Applications – New Equipment



Positive displacement, DX air conditioning & heat pumps and chillers

- Residential, light commercial, commercial

Replacement for new equipment types designed for R-410A

- Ducted splits, multi-splits, mini-splits, DX chillers, VRF Systems, Window units, PTACs, and other

Chemours Resources to Help you the Safe Transition

The screenshot displays the Chemours Opteon website. At the top, there is a navigation bar with links for 'Products', 'Industries & Applications', 'Sales & Support', 'News & Events', and 'Opteon'. Below the navigation bar is a large image of two technicians in blue uniforms and hard hats working on a large industrial unit. The main content area features a section titled 'Opteon™ Products Sales and Support' with a sub-headline 'RELY ON OUR DEPTH OF KNOWLEDGE TO HELP YOU SELECT THE RIGHT OPTeon™ PRODUCT'. Below this, there are several columns of text and links, including 'OPTeon™ WHERE TO BUY', 'OPTeon™ NORTH AMERICAN CYLINDER RETURNS', and 'REGULATIONS'. A prominent blue banner in the foreground reads 'Opteon™ XL41 (R-454B) Matching R-410A with the Lowest GWP'. Below the banner is a section for the 'ACHR News Podcast' with a microphone icon. To the right, there is a section for 'A2L Refrigerant News' with the tagline 'Sustainability. Performance. Efficiency. Safety.' and 'ISSUE 13'. Below this, there is a section titled 'More states to allow A2L in A/C systems' with a map of the United States and a list of states. At the bottom, there is a section for 'Chemours Refrigerant' and 'Opteon™'.

- Quarterly A2L Refrigerant News
- Podcasts
 - *ACHR News with Carrier, Emerson, Danfoss*
 - *HVAC School (hvacschool.com)*
- Webinars Appeared on
 - *ACHR News with Carrier*
 - *ACHR News with Rheem*
 - *ACCA with JCI*
- [Opteon.com/en/support](https://www.opteon.com/en/support)

We Are Here To Help!

The AIM Act is still in progress; Stay up to date and ask for help!



Product Quality



Global Availability



Technical Support



Engineering Support



Training



Regulatory & Technology Insights

A row of white HVAC condenser coils is shown against a blue sky with scattered white clouds. The coils are arranged in a line, receding into the distance. A large, semi-transparent blue graphic element is overlaid on the bottom left of the image, containing white text.

Thank you!

For more information, go to
www.opteon.com/GoBeyond

Opteon™ XL41 Properties

*GWP = 100-year Global Warming Potential, IPCC AR4

	R-410A	Opteon™ XL41 (R-454B)
Composition Weight %	R-32/R-125 (50/50)	R-32/R-1234yf (68.9/31.1)
GWP*	2088	466
Capacity vs. R-410A	100%	97%
COP vs. R-410A	100%	103%
P Discharge (psia)	406	379
T Discharge (°F)	180	189
Evaporator Glide (°F)	< 0.5	1.8
ASHRAE 34 Classification	A1	A2L

-Thermodynamic cycle model results for Tavg Cond = 46.1°C [115°F], Tavg Evap = 10.0°C [50°F], Subcool = 8.3 K [15°F], Superheat = 11.1 K [20°F], Compressor efficiency = 0.70