

**Low- and medium-temperature  
refrigeration with Solstice® L40X  
(R-455A)**

Long-term refrigerant solution for condensing units,  
waterloop and plug-in systems



## Applications

Solstice® L40X (R-455A) is an optimal long-term, refrigerant solution for applications such as:

- Condensing units
- Waterloop systems for discount stores and supermarkets
- Self-contained (low- and medium-temperature)
- Food service
- Low-temperature side of cascade systems

With a GWP of only 146, high efficiency, high critical temperature and low critical pressure, Solstice L40X is also a potential match for other applications such as chillers, heat pumps, or transport refrigeration.

Solstice L40X has been adopted by reputable equipment manufacturers and refrigeration contractors in these segments.

## Using Solstice L40X, retailers, equipment manufacturers and contractors are experiencing:

- Better efficiency and close capacity match when compared to R-404A
- Possibility to use Solstice L40X for all heat transfer applications in their store or production site (low- and medium-temperature, heat recovery, air-conditioning, heating and hot water), allowing the design of new, eco-efficient system architectures

## Key features of Solstice L40X

Solstice L40X (R-455A) is a zeotropic blend, mildly flammable refrigerant (A2L) designed to serve as an alternative for low, medium, and high-temperature applications in new systems. Its GWP of only 146 (IPCC AR5) makes it a long-term. It provides a close capacity match to R-404A, a similar operating envelope when compared to propane, and high energy efficiency.

- GWP of 146 (IPCC AR5) / 148 (IPCC AR4)
- A2L refrigerant with minimal flammability profile
- High efficiency, high critical temperature, and low critical pressure
- Low discharge temperature, similar to R-404A/R-507
- 30 % lower mass flow compared to R-404A/R-507 provides for more compact systems



## Safety and Flammability

According to ASHRAE 34 / ISO 817, Solstice L40X (R-455A) is classified in safety group A2L (mildly flammable).

## Charge Limitations and Risk Assessment

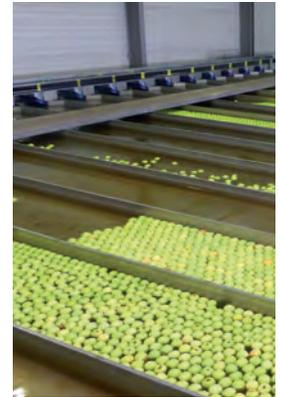
It is important to maintain compliance with the instructions of the equipment manufacturer, national safety standards and regulations, as well as the relevant building codes. See your Honeywell representative for details.

## Equipment safety standards

ASHRAE 15-2016 provides guidance for charge limits for A2 refrigerants. A2L guidance is forthcoming in an addendum. At this time A2 guidance can be used for A2Ls like Solstice L40X.

- ASHRAE 15-2016 states that listed equipment can contain not more than 6.6lb of refrigerant regardless of concentration limits stated in ASHRAE 34
- ASHRAE 15 also stipulates that higher flammability group A3 is limited to 0.331lb. Solstice L40X is allowed 20 times the charge of an A3 refrigerant.

- The 2018 version of the Uniform Mechanical Code mimics the ASHRAE 15 standards given above. This gives local Authorities Having Jurisdiction (AHJ) the incentive to approve Solstice L40X in charges up to 6.6 lbs.
- UL standard 471 lists class 2 refrigerants with a charge limit for 500g while class 3 refrigerants are limited to 150g
- A2L refrigerants have the potential to provide much safer operation and lower first costs due to the larger charge limits



## Guidance for use in new systems

Honeywell can provide detailed recommendations for the use of Solstice L40X (R-455A) in various types of systems, including charging of the refrigerant as well as setting optimization. As improving COP of any system is a common trend within the industry, we recommend to optimize systems by proper charge, minimizing running superheat and reduce leaks. The relevant component manufacturer can provide further application advice.



**For more information:**  
**[www.honeywell-refrigerants.com](http://www.honeywell-refrigerants.com)**

**Honeywell Refrigerants**  
115 Tabor Road  
Morris Plains, NJ 07950  
Phone: 1-800-631-8138

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