

## Lower charge requirements

Because the molecular structure of HC Refrigerants is considerably larger than that of existing synthetic alternatives, less of the refrigerant is required to charge a system. This not only reduces system pressures, but also helps prevent refrigerant leakage over time.

### For example:

- HC-12a<sup>®</sup> requires 40% of the CFC R12 charge by weight
- HC-12a<sup>®</sup> requires 42% of the HFC R134a charge by weight
- HC-22a<sup>®</sup> requires 42% of the HCFC R22 charge by weight
- HC-502a<sup>®</sup> requires 42% of the CFC R502 charge by weight

#### HC-12a<sup>®</sup>

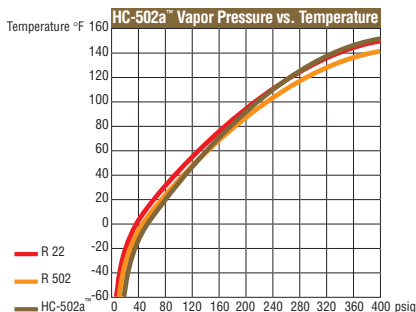
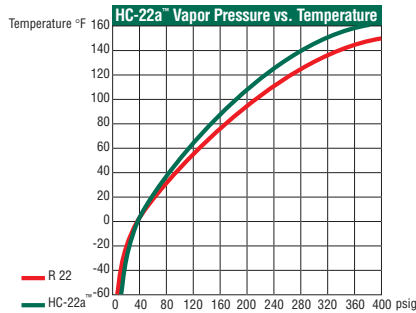
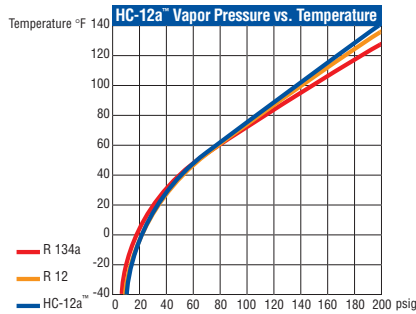
6 oz can = 15 oz of CFC R12 and 14 oz of HFC R134a  
30 lb cylinder contains 12 lb of HC-12a<sup>®</sup> = 30 lbs CFC R12 and 28 lbs HFC R134a

#### HC-22a<sup>®</sup>

30 lb cylinder contains 11 lb of HC-22a<sup>®</sup> = 27 lbs HCFC R22

#### HC-502a<sup>®</sup>

30 lb cylinder contains 11 lb of HC-502a<sup>®</sup> = 28 lbs of CFC R502.



## HC-12a<sup>®</sup> Charging Instructions

1. Existing refrigerant may need to be reclaimed by qualified personnel. The weight of the recovered refrigerant should be recorded. Local regulations may vary by region and the technician should be aware of all applicable requirements.
2. Pull a system vacuum and leak test.
3. Using the weight of the recovered refrigerant, or the system label information, the weight of HC-12a<sup>®</sup> required will be approximately 40% of the weight of the recovered CFC, or approximately 42% of the weight of the recovered HFC refrigerant.
4. Connect gauges and hoses, then with the compressor off, install HC-12a<sup>®</sup> on the low-pressure side of the compressor. After a minimum charge is achieved, start the compressor and set system to high.
5. Add additional HC-12a<sup>®</sup> as needed. Do not overcharge the system.
6. After verifying that pressures and temperatures are correct, remove the charging hose and place the HC-12a<sup>®</sup> label (supplied) on the air conditioning system. Ensure all labels are visible and clearly displayed.
7. If additional technical assistance is needed, please call your nearest HC Refrigerant distributor or Northcutt, Inc. directly.
8. The air conditioning system will now operate at cooler inside temperatures and a much lower head pressure, improving energy efficiency.

**IMPORTANT:** HC-12a<sup>®</sup> is designed to be charged as a liquid.

**DO NOT OVERCHARGE.** Exceeding 60 psig (414 kPa) on low side may damage compressor. In some cases, clearing the site glass overcharges the unit. Also, overcharging may cause loss of cooling efficiency.

**Cylinders must be returned undamaged and in a vacuum state with all valves closed and caps in place to be eligible for credit.**

## HC-22a<sup>®</sup>, HC-502a<sup>®</sup> Charging Instructions

1. Operate the system for 24 hours and record temperature and pressures of unit operation. Inspect the system, make any required repairs and perform routine maintenance before charging with HC Refrigerant.
2. Existing refrigerants may need to be removed and reclaimed by qualified personnel. The weight of the recovered refrigerant should be recorded. Local regulations may vary by region and the technician should be aware of all applicable requirements.
3. Perform a system vacuum and confirm that system does not leak.
4. Connect liquid valve from cylinder to gauge manifold. Make sure the charging lines are clean and purged.
5. Connect manifold equipment to the low-pressure side of system. Ensure all components have been properly grounded. When charging a large system, the charging equipment, hoses and system must be grounded to stop a buildup of static electricity.
6. When all connections have been made, insure there are no leaks before continuing.
7. Partially closing the suction service valve will reduce the flow from the regular evaporators and speed the transfer of refrigerant from the charging cylinder to the system.
8. Using the weight of the recovered refrigerant, or the system specifications, the weight of HC-22a<sup>®</sup> or HC-502a<sup>®</sup> required will be approximately 42% of the weight of the recovered HCFC or CFC refrigerant.
9. After verifying that pressures and temperatures are correct, remove the charging equipment and attach the HC System label (provided) to the system in a prominent area.

For a distributor near you, call:  
**1-800-279-3540**

DISTRIBUTED BY:

**NORTHCUTT**

Northcutt, Inc.  
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Wichita, KS 67219

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DISTRIBUTOR

# HC Refrigerants

## HC-12a<sup>®</sup>

## HC-22a<sup>®</sup>

## HC-502a<sup>®</sup>

*The Environmental Alternative*

**NORTHCUTT**

The Recognized Leader in  
Hydrocarbon Refrigerant Technology

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

## Environmentally friendly hydrocarbon refrigerant\*

Designed to replace ozone-depleting, global-warming refrigerants, HC Refrigerants are made of natural, organic compounds — not a blend of pre-existing, chemically based synthetic refrigerants, making them:

- Highly efficient
- Non-toxic
- Non-ozone depleting
- Non-global warming
- Non-corrosive
- Safe to use

In fact, HC Refrigerants can actually enhance the life and performance of air-conditioning and refrigeration equipment. Thanks to an anti-friction additive and their excellent thermal and chemical stability, HC Refrigerants can help to improve the performance and extend the service life of air conditioning and refrigeration systems and components. This reduces energy requirements and prevents system leakage. After more than 12 years of extensive testing, it's clear that HC Refrigerants provide more efficient performance than the man-made, synthetic refrigerants they replace!

### Easily replaces harmful refrigerants

HC Refrigerants are designed to replace many environmentally harmful refrigerants currently in use.

- HC-12a® is designed as a drop-in replacement for ozone-depleting CFC R12 and global-warming HFC R134a refrigerant.
- HC-22a® is designed as a drop-in replacement for ozone-depleting HCFC R22 refrigerant.
- HC-502a® is designed as a drop-in replacement for ozone-depleting CFC R502 refrigerant.



### A natural solution to a global dilemma

A growing awareness of the environmental issues facing our planet has motivated many world leaders and governments to embrace hydrocarbon technology as a long-term solution to environmental concerns. The European Common has adopted a new Standard, EN 378, which provides guidelines for the use and installation of hydrocarbon refrigerants in over 14 European countries. In the past five years alone, more than 8 million refrigerators and freezers were manufactured in Germany and Denmark utilizing hydrocarbon technology.

In the U.S., ASHRAE has rewritten Standard 15 to provide a framework for greater use of hydrocarbon refrigerants. In the past ten years, more than one million gallons of our HC Refrigerant has been used to cool between 3 million and 5 million motor vehicles throughout North America. During that period, there have been no reported accidents or injuries attributed to the use of our products.

### A safe alternative to traditional refrigerants

Like all hydrocarbons, HC Refrigerants are flammable. But in terms of safety issues, HC Refrigerants pose no greater threat than other flammable products such as hair spray, aerosol cleaners and insect repellents. Common sense, and adherence to the manufacturer's labeling and directions, has virtually eliminated the inherent risks associated with the use of such products.

Used as directed, HC Refrigerants are completely safe, and, unlike many new alternative refrigerants, are also non-toxic and environmentally friendly. Risk Assessment studies, carried out worldwide by scientists and institutions, have recognized the safety of hydrocarbon refrigerants, often in preference to established CFC replacements.

### From the recognized leader in hydrocarbon refrigerant technology

With a management staff boasting more than 30 years of experience in the hydrocarbon industry, Northcutt offers unsurpassed quality control and unparalleled technical, sales and shipping support. We use only superior packaging, and our products comply with all applicable regulations. Northcutt proudly manufactures, blends and packages its complete line of quality refrigerants under the auspices of the patent holder, Mr. Gary Lindgren. HC-12a® Refrigerant is the only hydrocarbon refrigerant whose use is protected by international patents issued in the United States, Mexico and the UK\*.

#### HC REFRIGERANT PRODUCTS

HC-12a\*    HC-22a\*    HC-502a\*

\* Use of this product protected under the following patents:

USA	6,336,333 B1	
UK	2,286,194	
MEXICO	194530	PRODUCT OF USA