



# Chemours™

**DuPont Refrigerants** is now **Chemours**  
Over 85 years of industry-leading innovation



The Freon™ brand has been trusted by the industry since the first fluorochemical refrigerants were introduced to the marketplace by our business over 85 years ago. Over this time, Freon™ has come to stand for the highest quality and performance across multiple applications within air conditioning and refrigeration.

As our business developed new HFC products they took on new tradenames, including Suva™ and ISCEON™. However, as we began to transition to Chemours, we recognized the value of the Freon™ brand and have since taken steps to amplify it. As a result, our full HFC portfolio will be represented by Freon™ going forward.



### Freon™ 22 (R-22)

Freon™ 22 is an HCFC refrigerant used for residential and commercial air conditioning and for medium and low temperature commercial refrigeration applications, including food service, supermarket display cases, food storage and processing, and transport refrigeration systems.

#### Applications

Residential and Commercial A/C, medium and low-temperature commercial refrigeration: food service, supermarket display cases, food storage and processing, ice machines, some transport.

#### ASHRAE

R-22; A1 Safety Classification

#### Lubricant Recommendation

AB or MO



### Freon™ 134a refrigerant

Freon™ 134a is an HFC retrofit refrigerant for R-12. It is used in medium- and high-temperature stationary commercial refrigeration, as well as chiller systems and home appliances. In addition, it can be used to retrofit existing R-12 refrigeration and air conditioning systems.

#### Applications

Medium & high-temperature: stationary commercial refrigeration, chiller equipment, home appliances; retrofit existing R-12 refrigeration and air conditioning equipment.

#### ASHRAE

R-134a; A1 Safety Classification

#### Lubricant Recommendation

POE for stationary/commercial applications.

#### Replaces

R-12

#### Benefits

Broadly used in commercial and stationary applications.



### Freon™ 404A

Freon™ 404A (HP62) has been the long-standing HFC replacement for R-502 and R-22 in applications. HFC-404A is included in the U.S. EPA SNAP de-listing of HFCs that will no longer be acceptable in certain end use applications in the U.S. market.

#### Applications

Commercial refrigeration equipment, new and existing R-502 equipment

#### ASHRAE

R-404A ; A1 Safety Classification

#### Lubricant Recommendation

POE

#### Replaces

R-502

#### Benefits

- Close Match for R-502, works over the entire R-502 operating range.
- OEM recommend POE oil for optimum reliability



## Freon™ 407C

Freon™ 407C is an HFC refrigerant replacement for R-22 in positive displacement systems such as new or existing residential and commercial air-conditioners and heat pumps. Freon™ 407C offers similar performance to R-22 and can be used to retrofit existing R-22 air-conditioning systems.

### Applications

Positive displacement equipment: new or existing residential and commercial air-conditioners, and new or existing residential and commercial heat pumps. Existing medium-temperature applications.

### ASHRAE

R-407C;  
A1 Safety Classification

### Lubricant Recommendation

POE

### Replaces

R-22

### Benefits

Similar to R-22 in capacity and energy efficiency.



## Freon™ 410A

Freon™ 410A is the leading HFC refrigerant for replacing R-22 in positive displacement residential and light commercial air-conditioning and heat pump systems. It has higher cooling capacity and significantly higher pressure than R-22 and should be used only in systems specifically designed for R-410A.

### Applications

New residential and commercial air conditioning and heat pumps.

### ASHRAE

R-410A;  
A1 Safety Classification

### Lubricant Recommendation

POE

### Replaces

R-22  
60% greater capacity than current R-22

### Benefits

Equipment designed for Freon™ 410A has up to 60% greater capacity than current R-22 equipment.



## Freon™ 507

Freon™ 507 is an HFC replacement option for R-22 and R-502 in commercial refrigeration systems. It provides very similar performance to R-502 over the entire operating range.

### Applications

Commercial refrigeration equipment.

### ASHRAE

R-507;  
A1 Safety Classification

### Lubricant Recommendation

POE

### Replaces

R-22 and R-502

### Benefits

- Close match for R-502, works over the entire R-502 operating range.
- OEM recommend POE oil for optimum reliability



## Freon™ MO59

Freon™ MO59 was one of the earliest R-22 replacement refrigerants on the market and continues to be used effectively in some applications, such as AC conversions. Freon™ MO59 (R-417A) is a non-ozone-depleting HFC retrofit refrigerant blend, typically used in AC conversions to replace R-22 in direct expansion stationary air conditioning and medium-temperature refrigeration systems.

### Applications

- Residential and commercial AC systems
- Medium-temperature commercial refrigeration, including: food service, supermarket display cases, and food storage and processing

### ASHRAE

R-417A ;  
A1 Safety Classification

### Replaces

R-22

### Lubricant Recommendation

ISCEON® MO59 is compatible with traditional and new lubricants--mineral oil (MO), alkylbenzene (AB), and polyol ester (POE)--in most cases, no change of lubricant type during retrofit is required.

### Benefits

- Provides efficient, cost-effective retrofits
- Non-ozone-depleting HFC
- In most cases no change of lubricant type during retrofit is required compatible with traditional and new lubricants
- Enables continued use of existing equipment
- Can be topped off during service without removing the entire refrigerant charge equipment



## Freon™ MO99

Freon™ MO99 refrigerant (R-438A) combines R-22 pressure-enthalpy characteristics with mineral oil compatibility in a unique HFC refrigerant that can be used to replace R-22 over a wide range of evaporator temperatures.

### Applications

- Commercial Air Conditioning: Roof Top Units, Indoor Packaged Units, DX Chillers, Split Systems and Residential Air Conditioning
- Refrigeration (Low and Medium Temperature): Self Contained Systems, Condensing Units, Rack Systems

### ASHRAE

R-438A;  
A1 Safety Classification

### Replaces

R-22

### Lubricant Recommendation

AB, MO, and POE new lubricants

### Benefits

- No expansion valve or line set changes
- Eliminates disruptive oil changes, because compatible with AB, MO, and POE lubricants
- Minimizes time spent on control set point adjustment and subsequent service calls
- Not subjects to phaseout under the Montreal Protocol and U.S Clean Air Act



Chemours has applied its leadership in science and technology to introduce its newest innovation in more environmentally sustainable refrigerants.

The Opteon™ portfolio of low GWP refrigerants.

The Opteon™ advantages

- Performance without compromise
- A lasting solution for both efficiency and the environment

Current	GWP	Low GWP Leading Options			
		Non Flammable Class 1		Mildly Flammable Class 2L	
		Product	GWP	Product	GWP
HFC-134a	1300 (1430)	XP10 (R-513A)	573 (631)	XL10 (R-1234yf)	<1 (4)
HFC-404A	3943 (3922)	XP40 (R-449A)	1282 (1397)	XL40 (R-454A)	238 (239)
		XP44 (R-452A)	1945 (2140)		
HFC-410A	1924 (2088)			XL41 (R-454B)	467 (466)
				XL55 (R-452B)	676 (698)
HCFC-22	1760 (1810)	XP20 (R-449C)	1146 (1251)	XL20 (R-454C)	146 (148)
HCFC-123	79 (77)	XP30 (R-514A)	2 (7)		
		MZ (R-1366mzz(Z))	2 (9)		

Note: GWP values AR5 (AR4)



# Chemours Inherits 85 Years of Refrigeration Legacy and Leadership from DuPont.



Chemours brings over 85 years of refrigerants leadership and innovation from DuPont, which invented the fluorochemicals category when it discovered the original fluorine-based refrigerant, Freon™.

As the leading supplier of low global warming potential fluorochemicals we believe that Chemours is expertly positioned to provide customers with products that offer both better performance for the environment, and their business. Optimized Portfolio Includes Opteon™ Family of Very Low GWP Refrigerants and Freon™ for its established hydrochlorofluorocarbon (HCFC) and HFC portfolio.

In the past, the company's base business was represented by three separate brands including Suva® and ISCEON®, but these products will now be slowly transitioned to Freon™ as the packaging changes from DuPont to Chemours throughout the 2016 cooling season.



Established in 2003 with Head Office in Jakarta. As member of group of companies primarily engaged in cool-solution and fire solution (system, parts, chemicals, engineering design and system integratory) more than 20 years, KLIMA has been developing and improving to be a green-solution company by committing to provide the excellent products and support to customers.

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