

DuPont™ ISCEON® 9 Series Refrigerants

PRODUCT INFORMATION GUIDE

DuPont Refrigerants. The Science of Cool.™

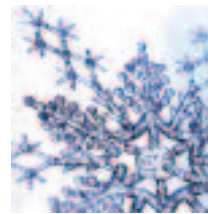
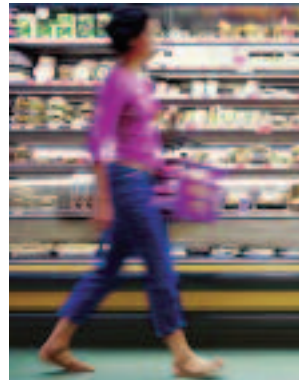
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The miracles of science™



DuPont Refrigerants



The miracles of science™



DuPont pioneered much of the science that makes air conditioning and refrigeration possible. With over 75 years of

proven leadership in refrigerants science and technology, we offer the broadest range of refrigerant solutions for new and existing equipment, and we are committed to leveraging The Science of Cool™ to lead the search for new cooling solutions that improve comfort and enhance the quality of life around the world.

This guide contains information on our full line of DuPont™ ISCEON® 9 Series Refrigerants to help you select the best DuPont refrigerant for your application. Additional product information is available on our website, or by contacting your local DuPont Refrigerants distributor.

www.refrigerants.dupont.com



We've worked hard to build a website that works as hard as you do with customized sections dedicated to OEMs, distributors, service technicians and end users for a better, more efficient way to explore cooling solutions. When you're looking for high-quality, high-performance cooling solutions from a trusted source, visit www.refrigerants.dupont.com

DuPont™ ISCEON® 9 Series Refrigerants

Easy-to-use, Non-ozone-depleting, HFC retrofit refrigerants

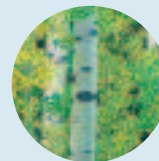
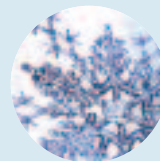
for CFC and HCFC equipment.

Replaces

ISCEON® M029	R-22 in direct expansion water chillers
ISCEON® 39TC®	R-12 in centrifugal chillers
ISCEON® M049	R-12 in automotive air conditioning and stationary air conditioning/refrigeration
ISCEON® M059	R-22 in stationary air conditioning and medium-temperature refrigeration
ISCEON® M079	R-22 in medium- and low-temperature refrigeration
ISCEON® M089	R-13B1 in very low-temperature refrigeration

Easy-to-use, efficient and cost-effective.
Compatible with traditional and new lubricants.
Avoid costly equipment replacement.
Available from a name you can trust.

DuPont Refrigerants. The Science of Cool.™



DuPont™ ISCEON® MO29

refrigerant

DuPont™ ISCEON® MO29 is an easy-to-use, non-ozone-depleting HFC refrigerant originally designed to replace R-22 in existing direct expansion water chiller systems. It can also be used in residential and commercial air conditioning and medium temperature refrigeration systems.

ASHRAE

The number R422D has been recommended by ASHRAE for this product pending public review and final publication.

Replaces

R-22

Applications

- Originally designed for direct expansion water chillers
- Can also be used in residential and commercial air conditioning and medium-temperature refrigeration systems

Benefits

- Provides easy, quick, 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 entire refrigerant charge

Performance

- Close match to R-22 capacity and efficiency in most systems
- Significantly lower discharge temperature and pressure vs. R-22—likely to prolong the life of the compressor

Lubricant Recommendation

ISCEON® MO29 is compatible with traditional and new lubricants, including mineral oil, alkylbenzene and polyol ester. In most cases, no change of lubricant type during retrofit is needed. See Product Information Bulletin for additional information.

DuPont™ ISCEON® 39TC®

refrigerant

ISCEON® 39TC® is an easy-to-use, non-ozone-depleting HFC retrofit refrigerant for R-12 in centrifugal chillers.

ASHRAE

R-423A

Replaces

R-12

Applications

Centrifugal chillers designed for R-12

Benefits

- Provides easy, quick, cost-effective retrofits
- Non-ozone-depleting HFC
- Retrofit typically requires a single lubricant change to polyol ester without additional flushing
- Avoids expensive engineering changes to existing chiller equipment
- Enables cost-effective, continued use of existing chiller equipment
- Can be topped off during service without removing the entire refrigerant charge

Performance

- Provides required cooling capacity and comparable energy efficiency vs. R-12
- Similar discharge temperature and pressure vs. R-12

Lubricant Recommendation

For most systems, only one lubricant change to polyol ester during retrofit is required. ISCEON® 39TC® tolerates high residual levels of mineral oil in polyol ester; therefore, no system flushing is generally required after changing the original lubricant to polyol ester. See ISCEON® 39TC® Retrofit Guidelines for more details.

DuPont™ ISCEON® MO49

refrigerant

ISCEON® MO49 is an easy-to-use, non-ozone-depleting HFC retrofit refrigerant for R-12 automotive and stationary air conditioning and in direct expansion medium-temperature stationary refrigeration systems.

ASHRAE

R-413A

Replaces

R-12

Applications

- Automotive AC systems designed for R-12
- Stationary AC designed for R-12
- Stationary medium temperature refrigeration systems, designed for R-12 including:
 - food service
 - supermarket display cases
 - food storage and processing
 - domestic refrigerators/freezers

Benefits

- Provides easy, quick, 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 entire refrigerant charge

Performance

- Provides equal or better cooling capacity vs. R-12
- Provides similar energy efficiency vs. R-12
- Lower discharge temperature vs. R-12

Lubricant Recommendation

For R-12 automotive air conditioning systems, ISCEON® MO49 is compatible with mineral oil in existing R-12 systems. In most cases, no change of lubricant type during retrofit is needed.

For R-12 stationary medium-temperature refrigeration and air conditioning systems, ISCEON® MO49 is compatible with traditional and new lubricants—mineral oil, alkylbenzene and polyol ester. In most cases, no change of lubricant type during retrofit is needed. See the ISCEON® MO49 Retrofit Guidelines for more details.

DuPont™ ISCEON® MO59

refrigerant

ISCEON® MO59 is an easy-to-use, non-ozone-depleting HFC retrofit refrigerant for R-22 in direct expansion stationary air conditioning and medium-temperature commercial refrigeration systems.

ASHRAE

R-417A

Replaces

R-22

Applications

- Residential and commercial air conditioning systems
- Note: for water chillers ISCEON® MO29 is recommended
- Medium temperature commercial refrigeration, including:
 - food service
 - supermarket display cases
 - food storage and processing

Benefits

- Provides easy, quick, 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 the continued use of existing equipment
- Can be topped off during service without removing entire refrigerant charge

Performance

- Significantly lower discharge temperature and pressure vs. R-22—likely to prolong the life of the compressor
- In most systems provides required cooling capacity
- Has been shown to offer energy savings in some systems

Lubricant Recommendation

ISCEON® MO59 is compatible with traditional and new lubricants, including mineral oil, alkylbenzene and polyol ester. In most cases, no change of lubricant type during retrofit is needed. See the ISCEON® MO59 Retrofit Guidelines for more details.

DuPont™ ISCEON® M079

refrigerant

ISCEON® M079 is an easy-to-use, non-ozone-depleting HFC refrigerant for replacing R-22, R-502 and HCFC-containing refrigerant blends in medium- and low-temperature commercial and industrial direct expansion refrigeration systems.

ASHRAE

R-422A

Replaces

R-22, R-502, HCFC-containing blends

Applications

- Medium- and low-temperature commercial and industrial direct expansion refrigeration, including, food service, supermarket display cases, food storage and processing and ice machines.

Benefits

- Provides easy, quick, cost-effective retrofits—easier retrofit than R-404A and R-507
- 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
- 20% lower Global Warming Potential (GWP) vs. R-404A and R-507
- Can be topped off during service without removing the entire refrigerant charge

Performance

- Provides improved cooling capacity over R-22 at many operating conditions with up to +15% at low-temperature conditions
- Provides comparable cooling capacity to R-404A
- Field testing shows it can provide improved energy efficiency vs. R-22
- Significantly lower discharge temperature vs. R-22—likely to prolong the life of the compressor

Lubricant Recommendation

ISCEON® M079 is compatible with traditional and new lubricants, including mineral oil, alkylbenzene and polyol ester. In most cases, no change of lubricant type during retrofit is needed. See the ISCEON® M079 Retrofit Guidelines for details.

DuPont™ ISCEON® M089

refrigerant

ISCEON® M089 is a non-ozone-depleting HFC retrofit refrigerant for R-13B1 in very low-temperature direct expansion refrigeration systems.

ASHRAE

None assigned

Replaces

R-13B1

Applications

- Very low-temperature refrigeration (below -40°F to -100°F [-40°C to -70°C]), including:
 - freeze driers
 - medical freezers
 - environmental chambers

Benefits

- Provides easy, quick, cost-effective retrofits
- Non-ozone-depleting HFC
- In most cases, no change of lubricant type during retrofit is needed—compatible with traditional and new lubricants
- Can be topped off during service without removing the entire refrigerant charge

Performance

Provides cooling capabilities similar to R-13B1

Lubricant Recommendation

ISCEON® M089 is compatible with traditional and new lubricants—mineral oil, alkylbenzene and polyol ester. In most cases, no change of lubricant type during retrofit is needed. See the ISCEON® M089 Retrofit Guidelines for details.



Safe Handling

Like the refrigerants they replace, DuPont™ ISCEON® 9 Series Refrigerants are safe to use when handled properly. Because any refrigerant can be hazardous when improperly handled, refer to the Material Safety Data Sheet (MSDS) for proper handling procedures.

For additional safety information on ISCEON® 9 Series Refrigerants, refer to DuPont bulletin *Safety of DuPont™ Refrigerants (AS-1)*.

For detailed information on the Properties, Uses, Storage and Handling (PUSH) of DuPont™ ISCEON® 9 Series Refrigerants, refer to the appropriate DuPont PUSH bulletin.

Product Availability

DuPont™ ISCEON® 9 Series Refrigerants are available from our global network of DuPont Refrigerant distributors. To find the local DuPont Refrigerant distributor nearest to you, visit

www.refrigerants.dupont.com

or call us at +41 22 717 5111
or fax at +41 22 717 6169

The Science of Cool™

DuPont Refrigerants Vision: The Science of Cool™

We will use our science and technology, market knowledge and global reach to provide sustainable materials and solutions to enhance personal comfort, enable food preservation, improve industrial processing and reduce environmental footprints.