

# DuPont™ ISCEON® MO99™

## CASE HISTORY

### DuPont™ ISCEON® MO99™ Delivers Unprecedented Versatility in Replacement of R-22 at Pacific Tomato Growers



#### Background

Pacific Tomato Growers, Ltd., is based in Palmetto, Florida, and operates tomato ripening and packing facilities in Florida, California, Virginia and Mexico.

In their operations, Pacific Tomato Growers helps to facilitate the tomato ripening process. In this process, tomatoes are harvested from the fields and ripened before distribution. During the ripening process heat is generated from the tomatoes. This heat is removed with a direct expansion refrigeration system using R-22 refrigerant. The refrigeration system keeps the air in the tomato ripening room in the 52–72°F range.

When Pacific Tomato Growers began looking for R-22 retrofit options, they contacted Stuart Drymon, Vice President of Drymon Refrigeration, Inc. Stuart has many years of industry experience and in-depth knowledge of service requirements for refrigeration systems like those in use at Pacific Tomato Growers. Stuart began looking for a zero ozone-depleting replacement refrigerant to meet Pacific Tomato Growers requirements, and proceeded to consult Baker Distributing for assistance.

Bob Murry, Baker Distributing, works with refrigeration contractors like Stuart on new projects and on servicing existing equipment. Bob stays informed on the latest R-22 replacement options with help from DuPont. Bob set up a meeting between DuPont, Baker, and Drymon to discuss a new R-22 retrofit refrigerant, DuPont™ ISCEON® MO99™, which was developed and patented by DuPont. ISCEON® MO99™ 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. In a retrofit using ISCEON® MO99™ the steps taken include recovering the R-22; replacing critical seals; charging the refrigerant; restarting and monitoring the system for potential leaks.

Stuart wanted a low-cost retrofit option with no oil changes, no thermostatic expansion valve changes, and no set-point changes. The product attributes convinced Stuart and his team to move forward and retrofit a tomato ripening room operated by Pacific using ISCEON® MO99™.

#### Project Details

The refrigeration system at Pacific Tomato Growers is a specialized twin refrigeration system with two Copeland® brand compressors. The system cools 12 truckloads of tomatoes at a time, and each refrigeration system can be operated independently. Stuart chose to run ISCEON® MO99™ side-by-side with a system operating with R-22. This side-by-side comparison enabled him to obtain immediate feedback on the performance of ISCEON® MO99™ relative to R-22.

#### Results

In the retrofit, 150 pounds of R-22 was removed from the refrigeration system. Next a vacuum was pulled and the filter drier was changed. Another vacuum was pulled and held for 3 hours.

ISCEON® MO99™ was added and the system was re-started. A significant amount of labor and travel time was avoided because an oil change was not required. The room temperature quickly came down, without superheat setting adjustments. Stuart experienced similar amp draws, evaporator and condenser pressures, and set points as with R-22.

#### Conclusion

Stuart described ISCEON® MO99™ refrigerant as “basically a drop in.” He added, “Once the system was up and running it was as if we didn’t change a thing.”



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For more information on DuPont™ ISCEON®, or other DuPont Refrigerants, please contact your local representative.

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