

# Introduction of Propylene Refrigerant-Based System

Effort toward a Low-Environmental-Load Chemical Plant

*New-generation chemical plant freezing unit using a non-fluorinated refrigerant.*

At a polypropylene production plant of the Oita office of SunAllomer Ltd., a 30-year-old absorption freezing unit was replaced with a new freezing unit that uses propylene as the refrigerant on the opportunity of the production plant expansion.

Energy efficiency has increased by removing the steamer-based refrigerant recycling process that existed in the old absorption freezing unit. In addition, a system that uses a non-fluorinated refrigerant was introduced, achieving a low environmental load from the freezing unit.

The introduction of this system is part of the on-going efforts of SunAllomer Ltd. to be a chemical company that gives consideration to the natural environment and local people. It will continue the conversion of facilities for greater energy-efficiency and lower environmental load.



Place: SunAllomer Ltd. Oita office.

Location: 2 Nakanosu, Oita City, Japan

Cooling capacity: 612 kW

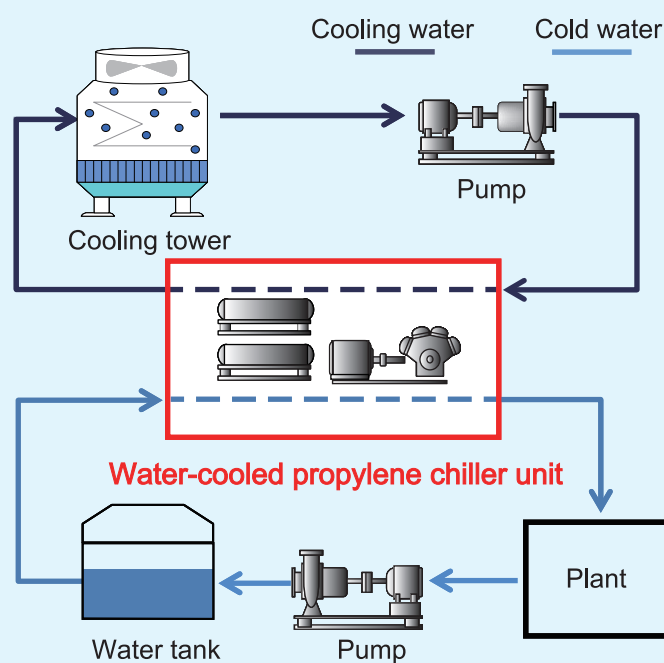
Facility: Propylene-based freezer

Equipment: Cooling tower, cooling water pump, water-cooled propylene chiller unit, cold water tank, etc.



## «CO2 emission reduction»

- CO2 emission reduction (related to refrigerant leakage)  
17.1 tCO2/year
- CO2 emission reduction (related to energy-source CO2)  
312 tCO2/year (0.472 kgCO2/kWh electricity)
- \* As compared with an R-407C-based cooling facility.



Schematic Figure of Propylene-Based Freezer

This project was MOEJ's model project in FY 2009 for the promotion of the introduction of energy-efficient equipment using natural refrigerants and other alternative refrigerants.