

May 9, 2017

Panasonic Supplies Fluorocarbon-Free, CO₂ Refrigerant*1 Condensing Unit*2 to Jaya Grocer in Malaysia

Jaya Grocer is the first supermarket chain outside Japan to adopt Panasonic's environment conscious commercial condensing unit.

Osaka, Japan - Panasonic Corporation today announced it has supplied its CO₂ refrigerant-based condensing unit to the Mutiara Tropicana store of Malaysian supermarket chain Jaya Grocer as its first supermarket customer for such systems outside Japan. Panasonic Commercial Equipment Systems Co., Ltd., a subsidiary of Panasonic Corporation, developed the fluorocarbon-free condensing unit and supplied through its local sales agent Coolcare (M) Sdn. Bhd. It was assisted with the funding provided under the Multilateral Fund for the Implementation of the Montreal Protocol by the Department of Environment of the Ministry of Natural Resources and Environment of Malaysia (NRE).

Supermarket and convenience store operators are faced with the challenges of cutting power consumption of refrigeration and freezer systems in their stores as well as reducing environmental impact from the refrigerants used in such systems. Amid growing awareness of greenhouse effect of fluorocarbons, CO₂ refrigerant is drawing attention as a next-generation refrigerant. Compared to hydrochlorofluorocarbons (HCFC) and hydrofluorocarbons (HFC) currently used in most stores, natural CO₂ refrigerant has an ozone depletion potential (ODP) of zero and the extremely small global warming potential (GWP) of 1/1,430 to 1/3,920.

Panasonic started verification testing of fluorocarbon-free condensing units using CO₂ refrigerant in 2009. Since September 2010 to date, the company has supplied around 6,000 units to Japanese retail companies, while promoting its environmentally friendly condensing units in other countries.

Malaysia, which has ratified the Paris Agreement, is tackling the global warming problem at a national level, with the government and private sectors working together to phase out the use of fluorocarbon refrigerants. As part of these efforts, Panasonic's CO₂ condensing unit was recognized by the Malaysian government as a technology that helps mitigate climate change. Also taken into consideration in determining the subsidy eligibility included the company's track record in supplying natural refrigerant condensing units to supermarkets and convenience stores in Japan, its high share of supermarket display cases in Malaysia, and its active involvement in the promotion of natural refrigerants.

In Malaysia, Panasonic is also involved in activities to spread the use of natural refrigerants through fostering a better understanding of them. On March 23, the company held a seminar on fluorocarbon-free condensing units for local university faculty and construction personnel in cooperation with NRE. Panasonic will continue to support the country's efforts against global warming by offering its technology and experience in this area.

With its innovative CO₂ condensing units, Panasonic supports supermarket and convenience store operators and at the same time takes the lead in promoting natural refrigerants in the global food distribution industry to help preserve the environment.



OCU-CR2001MVF



Jaya Grocer Mutiara Tropicana store

Product specifications

Product name	Fluorocarbon-free condensing unit utilizing CO ₂ refrigerant	Refrigerant conveyor pressure	4-6 Mpa (megapascals)
Product number	OCU-CR2001MVF	Applications	freezing and refrigeration
Output	14.6kW 20 horsepower	Exterior dimensions Width x depth x height	1190 x 890 x 1856 (mm)
Waste heat emissions	Top flow ³	Weight	Approx. 465kg

Jaya Grocer

Company name	Trendcell Sdn.Bhd. (Operator of supermarket chain Jaya Grocer)	
Representative Director	Mr. Teng Yew Huat	
Type of industry	Supermarket	
Number of stores	19 stores in Malaysia (As of March 2017)	
Delivery store / location	Mutiara Tropicana store, Jaya Grocer No. 2G-6G, Jalan Mutiara Tropicana 3, Mutiara Tropicana PJU 3, 47410 Petaling Jaya, Selangor Darul Ehsan, Malaysia	
Store opening date	May 8, 2017	

<Reference>

Main refrigerants and their characteristics

Refrigerants		Ozone depletion potential (ODP)	Global warming Potential (GWP)	Inflammability	Toxicity	Principal application	
Natural refrigerants	CO ₂ (R744)	0	1	Non-flammable	No	Hot water heaters, fridge-freezers	
	Isobutane	0	3+	High flammability	No	Home refrigerators	
	Ammonia	0	0	Low flammability	Yes	Industrial freezers	
Alternatives to CFC	HFC refrigerants	R134a	0	1,430	Non-flammable	No	Car air conditioners
		R407C		1,770		Industrial air conditioning equipment	
		R410A		2,090		Air conditioners, industrial air conditioning equipment	
		R404A		3,920		Display cases	
Chloro-fluoro-carbons (CFC)	HCFC refrigerant	R22	0.055	1,810	Non-flammable	No	Industrial air conditioning equipment, display cases
	CFC refrigerant	R12	1	10,900		Turbo chiller unit, industrial dehumidifiers	

Notes:

1. Refrigerant: These are thermal catalysts (fluids) that exert pressure in freezers and other devices to absorb heat continually from low temperature areas and convey it, then discharge the heat to high temperature areas. They are used for cooling in air conditioners and display cases. There are various types of refrigerants made by manufacturers of such. Currently the most popular refrigerants used in freezers are hydrofluorocarbons [HFCs (R410A, R404A, etc.)], alternatives to CFCs that have high energy-saving properties and zero ODP. However, their high GWP has led to a shift to natural refrigerants in recent years.
2. Condensing unit: Heat source equipment for display cases. Like the outdoor unit of an air conditioner, these are often placed outdoors, and connected to the in-store display case or other device by a pipe. The pipes carry the refrigerants.
3. Top flow: Types that expel the waste heat from the top are called top flow types, those that expel the waste heat from the side are called side flow types.

About Panasonic

Panasonic Corporation is a worldwide leader in the development of diverse electronics technologies and solutions for customers in the consumer electronics, housing, automotive, enterprise solutions and device industries. Since its founding in 1918, the company has expanded globally and now operates 474 subsidiaries and 94 associated companies worldwide, recording consolidated net sales of 7.553 trillion yen for the year ended March 31, 2016. Committed to pursuing new value through innovation across divisional lines, the company uses its technologies to create a better life and a better world for its customers. To learn more about Panasonic:

<http://www.panasonic.com/global>

Media Contact:

Public Relations Department

Panasonic Corporation

Tel: +81-(0)3-3574-5664 Fax: +81-(0)3-3574-5699

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