

Pilot project at Hamburger Hafen Logistik AG (HHLA):

Successful conversion of cold storage house for bananas to more sustainable refrigerants from DuPont



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Photo: DuPont

DuPont's Joachim Gerstel (middle) and Bernd Wedemann from DKA (right) check refrigeration performance data for the four cool storage houses at Hamburger Hafenlogistik following their conversion to the non-ozone-depleting DuPont™ ISCEON® refrigerant.

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The four similar-sized banana stores, with a total volume of 2100 cubic metres, need to be cooled to exactly +13.5°C.

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Nuremberg, October 2006. According to EU regulation 2037/2000 and future decrees relating to chemicals and, specifically, ozone depleting substances, the recharge of refrigeration and air-conditioning systems with virgin HCFC refrigerants (predominantly R-22) will be banned from 31st December 2009 onwards. At first glance such a deadline may seem a long time away. However, bearing in mind that the majority of the more than one million cooling systems in Germany operating on R-22 are within the food chain – including those used in agriculture – the time to act is now. Otherwise, as the deadline nears, or indeed passes, there is a genuine risk of supply shortages, refrigeration unit outages, product losses and, in the worst case, administrative penalties. The German harbour logistics company, Hamburger Hafen Logistik AG (HHLA), acting on the advice of its refrigeration contractor Dresdner Kühlanlagenbau (DKA) and DuPont Refrigerants, has reacted promptly by initiating a pilot project to convert several refrigerated warehouses to the non-ozone-depleting DuPont™ ISCEON® refrigerant. It is the first company at the harbour in Hamburg to do so.

There are a further ten refrigeration systems at HHLA, used for the storage of bananas and pineapples, which still operate with R-22 or R402A. However, the managers of these cold storage houses, Bernhard Albiser and Horst Stroh, do not want to run the risk of exposure to over-booked contracting firms or potential fines, and are proactively tackling the conversion issue in advance of the deadline.

A smaller refrigerated warehouse for bananas was selected by the company for a pilot project. The company's decision to take this initial step was prompted by consultation from Andreas Borst, service manager at DKA's sales and services office in Hamburg, who is responsible for servicing the refrigeration systems at HHLA, and Joachim Gerstel, market development manager for ISCEON® refrigerants at DuPont.

The interconnected system, using R-22, has been used in the warehouse since 1993 to cool four similar-sized banana stores with a total volume of 2100 cubic metres. The storage temperature for such items needs to be maintained as close to +13.5°C as possible. The conversion to ISCEON®, decided upon at the end of August

2006, was carried out just a few weeks later by Bernd Wedemann, refrigeration unit engineer at DKA, who was greatly impressed by its simplicity: “Virtually no technical modifications to the unit were required.” The principle advantage for the end-user was expressed by Bernhard Albiser, technical manager at HHLA: “Operations were not disrupted by the conversion, saving us both precious time and money.”

As part of its ISCEON[®] refrigerant series, DuPont offers three easy-to-use HFC replacements for R-22 which have been developed especially for use in medium- and low-temperature applications as well as in air conditioning. All three products offer the decisive benefit of compatibility with MO and AB lubricants in existing units, thus a change of oil type to more expensive POE oil is not required. This saves material costs, time and manpower. Energy consumption can also fall as a direct result of the conversion, as has been documented through numerous previous conversions.

DuPont Fluorochemicals is a leading global supplier of refrigerants, using 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. For more information, please visit www.refrigerants.dupont.com.

DuPont is a science company. Founded in 1802, DuPont puts science to work by creating sustainable solutions essential to a better, safer, healthier life for people everywhere. Operating in more than 70 countries, DuPont offers a wide range of innovative products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel.

Dresdner Kühlanlagenbau GmbH is Germany's largest independent manufacturer of refrigeration and air-conditioning systems. The company was founded in 1953 and currently has more than 500 employees in Germany, Russia and Poland. Dresdner Kühlanlagenbau is an industry partner for the planning, delivery and installation of refrigerating and air-conditioning equipment as well as their maintenance and repair.

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