



Cool Flash

JANUARY 18, 2006, EDITION NR. 6

Editorial

2005 has been a tough, yet successful year for Artec. We've been facing tough MEG-markets, additives prices went up, and also logistical cost continue to increase.

Nevertheless, we've been able to end 2005 with very positive news on HTF. Several challenging projects ended in favour of Zitrec FC, Zitrec S, ... Next edition we hope to share with you more details on these projects, mainly situated in the food-industry.

In the mean time, the complete Artec-team wishes our readers an interesting, fascinating and flourishing 2006!

Els Quintyn

HTF Training

By Tom Lansbergen

Artec offers the possibility to have a training on heat transfer fluids and system design, or even custom made trainings for your people. We have different trainings for schools, engineering companies, OEM suppliers and end customers.

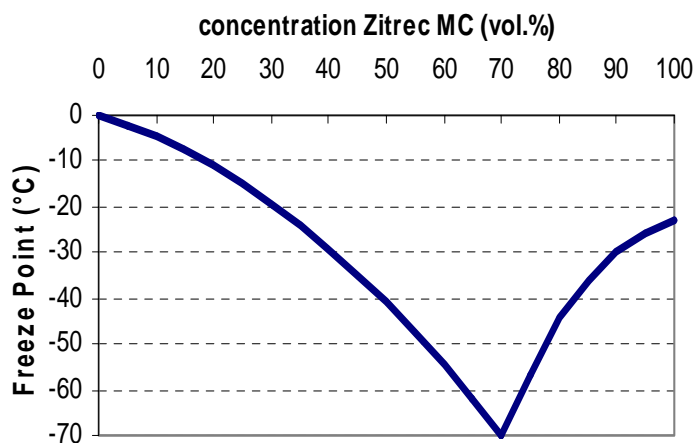
The training covers principally the differences in heat transfer fluids, points of attention, which of the physical properties are important to calculate systems and how to obtain them, engineering & installation tips and tricks... These trainings can be done either by your distributors technical people or by Artec experts.

Recently, we've trained Grundfos Technical staff in the Netherlands on the ins & outs of heat transfer fluids and had an open discussion on pump problems, their causes and solutions. Mr Pronk and Mr Alkema of Grundfos Nederland: "It was very interesting to combine the practical experience we have from the field with the knowledge coming from the fluid supplier. We learned new things, that keep our staff up to date, and our service and support to the leading edge position our customers are used to."

Call your distributor and find out how you can participate in a HTF class in your country!

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Freezing behaviour of Zitrec MC, based on MEG. Due to the water-content in Zitrec MC, freezing behaviour is slightly different than pure MEG.

From Artec to Zitrec

Freeze-protection. The base fluids of our HTF's (MEG, MPG or brines) are responsible for the frost-protection. Yet, each of these base fluids have a very different freezing behaviour :

MEG reaches an eutectical point, at 67%, which means freezing points decrease with increasing concentrations, but only up to 67%. This gives the lowest freezing point possible of ~-70°C (see picture). Higher concentrations give again higher freezing points, and 100% MEG has a freezing point of ~-13°C.

MPG behaviour is completely different: it supercools. With increasing PG-concentrations, freezing points further decrease, but a real freezepoint, where PG gets solid, is never obtained: the product gets so viscous and looks solid, as if it were frozen.

Brines, potassium formate and sodium propionate, also have increasing freezing points with increasing concentration.

Zitrec AC is the only product within our range which does not provide freeze-protection. It is based on water, with a concentrated inhibitor level.



The stories below inform you about a HTF as a working fluid, but also how Freezium gets from the North Finland to its final destination. They have been written from a different perspective than usually....

The story of a working fluid

By Tom Lansbergen

This is the story of a fluid circulating in a secondary cooling system and how it survives the stresses to which it is subject to – this story offers you an insight from another perspective than the external view.

On a ‘blue Monday’, the fluid is pumped into a system – violently it is pressed out of the bulk truck container, and in the process it mixes with air in a turbulent way. While being pumped into the system, it pushes out the air which is vented through a de-aeration valve on the top of the installation.

After the system is completely filled, the fluids’ real adventure starts! At a certain moment, the pumps are started and there we go – the fluid is pushed toward a heat exchanger (evaporator of the primary system) in the installation where it can be cooled by a refrigerant such as ammonia or any other refrigerant gas. At that point, while flowing through the tubes or plates of the heat exchanger, temperature decreases over the length of the path; its flow is kept turbulent to optimize heat transfer to all fluid particles., which goes within the fluids’ molecules by conduction.

The fluid flows further until it reaches another heat exchanger, like a cooler that cools air, or another liquid that needs cooling, such as beer or wine. As the fluid passes through the plate or tube heat exchanger, it takes up heat of the air or liquid that needs cooling. Also here the fluid passes through in a turbulent flow, thus increasing the cooling capacity. During its passage through the heat exchanger, pressure drops and temperature increases. When it flows out, pressure should still be above atmospheric pressure. The pump then draws the fluid into its impeller and lets it flow to the evaporator. The fluid also passes through an automated de-aeration valve, and some of the fluid then goes to the expansion vessel. Then the fluid passes on to the evaporator, ... and then the process starts all over again.

The journey of a Freezium drum

By Nathalie Van de Walle

The journey of a Freezium drum from the perspective of the drum itself :

“Today I’m traveling from Kemira Oulu (Finland) to the Arteco plant in Schoten (Belgium)..

A customer has sent in an order for Freezium drums to Arteco’s Ghent office or, Arteco Schoten needs to replenish their warehouse to secure the min stock level in case an emergency will take place... So I have to move.

The Ghent office sends a purchase order to Kemira’s customer service responsible in Helsinki. The material manager in the Oulu plant, in charge of arranging planning and production, will prepare the goods, or plan production if needed. A transport company, specialised in Scandinavia, is then picking me up and here I go. Together with a delivery note, certificate of analysis and in certain cases export documents, I’m leaving Oulu, knowing that somewhere a customer is waiting for me. I go on the ship in Oulu, and will only have solid ground unther me again when arriving in the harbour of Antwerp. This trip will take me about 5 days. Luckily I never travel alone; 3 other drums are stacked on the same pallet - full pallets is really a must to be safe on the road!

When arriving in Schoten, the quantity on the purchase order is being checked versus the loaded quantity. Then a sample is taken, and product quality is being checked. After this quality inspection, I’m put in the warehouse from Schoten, waiting for my final destination... directly to the end-customer, or maybe to the warehouse of a local distributor.





Zitrec FC— positive recommendation in France

Already in Coolflash 4 from last year, we informed you that Zitrec FC is registered by NSF, which is a US-organisation.

Today, we have received, following our request to CSHPF (Conseil supérieur d'hygiène publique de France), an additional favorable recommendation for Zitrec FC : Zitrec FC has received, in France, an 'avis favorable' by the Health Ministry and AFSSA.

This recommendation states '*un avis favorable à la demande d'inscription du Zitrec FC en liste A pour le traitement thermique en simple échange des eaux destinées à la consommation humaine, sous réserve que la concentration maximale de Zitrec FC dans le circuit primaire ne soit pas supérieure à 47%en volume*'.

Freely translated : *a favorable recommendation to include Zitrec FC in the A-list for the thermal treatment, in simple exchange of water destined for human consumption, provided a max. concentration of Zitrec FC in the primary circuit of 47 vol%.*

This advise was based on the non-toxic nature of the ingredients. The fact that a maximum of 47% vol% is recommended has to do with the concentration of monopropylene glycol, at which toxicological information is available.

This advise supports once more, from an independent source, the value of Zitrec FC!

Readers corner

Do you have comments or feedback? Want to share experiences with other readers ... this is where you can do this. This is your corner! A selection of comments will be published here.

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What is CSHPF?

CSHPF stands for 'Conseil supérieur d'hygiène publique de France', and is an institution with scientific and technical expertise. CSHPF was created in 1848, and has its role in the evaluation and management of human health risks. CSHPF can also be consulted in cases of sanitary issues with water quality. The advice and recommendation made by CSHPF are an essential base in the decision making of public health.

CSHPF originally contained 5 sections : 'water', 'life-environment', 'food and nutrition', 'transmittable diseases', and 'radioprotection'. The 'food and nutrition' has been suppressed at the creation of the AFSSA in 1999.

Further, the water-section of CSHPF works in close relation with AFSSA : they complete the actions provided by the AFSSA, which mission is to assure sanitary safety in the domain of food. Therefore monthly meetings are held with the 'Comité d'Experts Spécialisés Eau de l'AFSSA'

<http://www.sante.gouv.fr/>

What is AFSSA?

AFSSA stands for 'Agence française de sécurité sanitaire des aliments' (freely translated 'French agency for sanitary safety of foodstuffs'), and was created April 1st 1999. Their mission is to evaluate sanitary and nutritional risks for foodstuffs, both for human for animal consumption, in France. This includes the complete process-chain starting from production of the raw material up to the distribution to the end-consumer. The role of the AFSSA is one of 'wakening' and being alert. The agency gives out opinions and advises, formulates recommendations, and makes studies. Principally they don't have a direct controlling power. However, they can make recommendation to the appropriate authorities to take measures, or to investigate unfit situations. Recommendations, advise and studies are always made available for the public.

<http://www.afssa.fr>



Agenda

- 17 Jan - 20 Jan '06. Interclima
Paris - France
Come and visit the Dehon stand!
- 30 Jan - 3 Feb '06. VSK
Utrecht - Netherlands
Come and visit the Gasco stand!
- 28 Feb - 4 Mar '06. Mostra
Convegno. Milano—Italy
Come and visit the Carini stand!

IKK 2005 - a short overview

IKK 2005 was the 26th edition of the German “Internationale Fachmesse

für Kälte und Klima” and took place on 1 – 4 November in Hannover, Germany. From the number of visitors, it is clear that this year’s IKK did not fulfill its expectations. Pressure therefore has increased on the organizers – Nürnberg Messe and the German union of AC & Refrigeration companies, VDKF, to make IKK a 2 year event. The exhibition had two main themes: air conditioning and refrigeration, split in to two halls. In total 610 exhibitors from 41 countries, of which almost half came from Germany, put their products and solutions on display. The biggest group of foreign exhibitors were from China, closely followed by Italy.

Arteco was represented by A-GAS, our UK distributor of Zitrec and Freezium products.

Zitrec on the road in Sweden

By Mats Feltwall, Brenntag Nordic

For 3 days, Brenntag Nordic went on a Scandinavian Tour, promoting Zitrec and Freezium heat transfer fluids. This mini-exhibition visited 3 cities : Gothenburg, Växjö, Skövde, approximately 200km between each. Only 9 companies were represented, of which Brenntag the only one promoting HTF. Other companies were presenting equipments, such as heating pumps and spareparts for refrigerators.

These were succesful exhibitions and very well arranged : all invited companies were really focused on refrigeration; no other visitors were allowed.

March 2006, another tour will be organised, focussing this time on ventilation, where our glycol-based heat transfer fluids will also find applications in climate-control and energy-recycling.



Cool & Comfort Happening in Belgium

Gasco Belgium and Arteco went jointly on a local Belgian exhibition called ‘Cool & Comfort’. The event is known to be the country’s main event for the industry. It offers a platform on which information is shared in seminars on interesting and new developments, and at the same time showing all main suppliers in R & AC.

The theme of our joint stand was “Long Life Technology” – in fact, all Zitrec products offer extended installation life thanks to its innovative inhibitor technology. Interested customers could subscribe to our newsletter.

From the number of visitors on our stand as well as the quality of contacts we had during the exhibition, we can say that we are very satisfied! It became very clear that also in Belgium people see corrosion in A/C and refrigeration systems; sometimes causing total standstill of their systems. The large number of quality information resources that are offered by Arteco through Gasco was also very much appreciated. Amongst which are the engineering guidelines and ProZit, a tool that allows the user to find all thermophysical data related to heat transfer fluids of Arteco.





READ IN THE PRESS

IKK Hannover 2005— Hangover?

The organizer's prediction of 18.000 visitors was not reached. Only 13.700 visitors attended IKK, which is a far from the days when IKK was regularly hitting 20.000 visitors. Many important big companies were absent. The organization is still in discussion with some of these which seem to be 'boycotting' IKK Hannover. Nevertheless, the organizer insists on keeping the exhibition annually, and promises that future IKK will take place mid October.

Source ACR News, December 2005 + Koude en Luchtbehandeling, November 2005

Kee it cool in production

Different projects are explained briefly. One of them is a German factory of sweets, build by Dresen + Bremen. The cooling installation uses ammonia as primary cooling fluid. For the production cooling, water is used, while propylene glycol is used for the air conditioning. The excessive heat from the rotating screwcompressors is used to heat up the processwater via a closed glycolsystem.

Source Cool & Comfort, December 2005

Multi-temperature, secondary loop

Transport refrigeration systems are a vital link in the food supply chain, and have strict regulation on food safety. The article describes the advantages and disadvantages of using a DX system versus a secondary system. For secondary systems, potassium formate based products is considered the best compromise of the available secondary fluid.

Source Refrigeration World, October 2005

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Zitrec is a registered trademark of Artec. Freezium is a registered trademark of Kemira

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