



# Cool Flash

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## Editorial

Despite we're in middle of holiday season, education and training of skilled people seems to be a hot item, not only in Belgium, but in many European countries. The profession of technical specialist in acclimatization, cooling and heating have been bottleneck-professions since more than a decade. Schools and universities are trying to find a way to counter this trend and are setting up new training programs. Because we will need these experts to design and install energy-economical buildings in our efforts to comply with the Kyoto protocol. Other hot topic for the moment is of course REACh. An update in this edition.

Enjoy reading this Coolflash.  
And enjoy this holiday period!

Els Quintyn

1 December, 2008

**Registration phase.** At the end of November, the pre-registration phase ends, and the registration phase begins. The complete registration phase is divided into volume bands : the highest volumes will be evaluated first, as well as those substances which are the more harmful ones. The volume bands start and respectively end at :

- 1 December, 2008 - 1 December, 2010
- 1 December, 2010 - 1 June, 2013
- 1 June, 2013 - 1 June, 2018

Here the importance of the pre-registration phase comes into play : if a substance was **not pre-registered**, and the manufacturer still wants to register and continue its use, the complete registration and all its test data will have to be finalized by 1 Dec. 2009, irrelevant of the volume band.

## REACh into force on June 1st

By Els Quintyn

In an earlier edition (see Coolflash 7 from April 2006), an overview was given on the new Reach regulation. This new European regulation has been finalized in the mean time, and came into force on June 1<sup>st</sup>. So it's time for an update!

### Timeline

On the next page you can find an overview of the timeline within REACh . Below some more information on the different steps within the REACh process .

1 June, 2007

REACh **enters into force**. The legislative text is final, although a lot of working documents are still in development. The real preparation work for registration starts.

1 June 2008 – 30 November 2008

**Pre-registration phase.** This phase is very important to get the necessary time to gather all required information needed for registration. In this pre-registration phase, only a limited amount of data is required, such as identification of the substance, coordinates of the contact person and the tonnage band. At this stage, no test data, nor use, nor risk or hazard assessment is required.

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## From Arteco to Zitrec

*Kelvin (K) is a unit-increment of temperature. The Kelvin scale is a thermodynamic (absolute) temperature scale where absolute zero — the coldest possible temperature — is defined as being equivalent to zero Kelvin (0 K = -273.15°C)*

## REACH into force on June 1st (cont'd)

### SIEF

Just after the pre-registration phase, there is a very short time of 1 month foreseen for the formation of SIEFs. These Substance Information Exchange Forums are 'processes' to facilitate data and cost sharing. In the SIEFs, stakeholders (manufacturers, downstream users ...) of a same substance will sit together and will make an inventory of available test data. Following, they will set a planning for extra testing, and agree on cost sharing. In the end, they will have to come to a common agreement on classification of the substance.

The benefits of these SIEFs are 3-fold :

- Increase efficiency of registration system
- Reduce costs of registration
- Reduce testing on vertebrate animals

### To conclude

Over the past year, a lot of issues have been solved, and the time-line is set. Nevertheless, there are still many more unclarities to be resolved....

How detailed will the downstream users have to report the use of the substance?

How will the SIEFs work? How will data sharing and costing sharing work in practice?

What will be the impact on the purchase-cost of the substances?

....

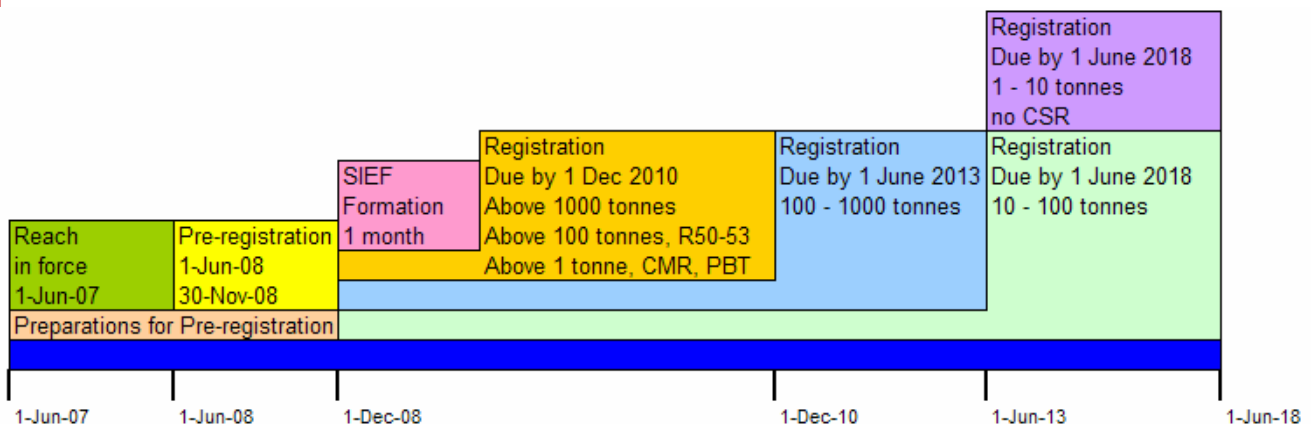
We will keep you informed via this newsletter.

REACH : Registration, Evaluation and Authorization of Chemicals

More info can be found on :

site of the European Chemicals Bureau : <http://ecb.jrc.it/REACH/>

site of the European Chemical Agency : [http://ec.europa.eu/echa/home\\_en.html](http://ec.europa.eu/echa/home_en.html)



*R50-53 R-phrases related to harmful to the environment*  
*SIEF = Substance Information Exchange Forum*  
*CMR : Carcinogenic, Mutagenic, Reprotoxic*  
*PBT : Persistent, Bioaccumulative Toxic*  
*CSR : Chemical Safety Report*



## Danisco chooses Zitrec F

By Tom Lansbergen

**DANISCO**

First you add knowledge ...

### *Our Customer*

**Danisco** is one of the world's biggest producers of food ingredients such as sugar, industrial bioproducts, emulsifiers and stabilizers. At Danisco Grindsted (DK), production runs 7 days on 7, 24h a day. With about 620 employees on the site, Danisco produces a variety of products: emulsifiers, enzymes, food safety products (antioxidants), pharmaceutical base products...

### *The Application*

In 2003, Danisco started an R22 conversion project of a production facility that produces emulsifiers and stabilizers base products. This used to be a direct expansion system, but would be reconverted to an indirect system. By August 2006, the complete reconversion project was finished with success.

In several plants in this facility, a spray cooling tower installation is in place, cooling down incoming air by use of a stainless steel metal coil. This removes the humidity out of the air. The use of stainless steel is absolutely necessary for the simple reason that the incoming air has to be clean without any particles from corrosion that you be present if other materials were used in the cooling coils. The individual cooling towers are fed with Zitrec F at a 30% concentration at -7°C, which originates from a central 3MW cooling plant with NH<sub>3</sub> primary expansion system.

### *Choosing for safety and flexible control*

For the new plant, safety is an absolute priority. Mr Henning Tøstesen, one of the key responsables for this project, told us:

*"... We must consider any incident in operating these systems. Amongst various other things, we looked at a possible coil break and the consequent release of heat transfer fluid into the spray drying tower. Even a small leakage would be disastrous. Therefore we needed a safe product with highly performant corrosion inhibitors."*



To the left, Mr Tøstesen of Danisco and to the right, Jens Brandt of Brenntag Nordic - DK

On the use of indirect system, he argues:

*"We chose for an indirect system because it offered us the necessary flexibility and ease of control of the coil temperatures – which is important since it influences product quality quite directly."*

Coming to the reason why Zitrec F was chosen, Mr Tøstesen continues to say: *"... FDA approved ingredients, the NSF registration, all were important elements favouring Zitrec F as a solution. Further, the environmental responsibility of Danisco lead us to construct the installation such that the impact on environment is minimised. This also means the choice of the heat transfer fluid is secondly determined by its thermophysical properties, to reduce energy consumption. All this together soon lead us to choose for Zitrec F as a heat transfer fluid."*

### *Customer Satisfaction*

Dansico uses a diluted version of Zitrec FC, mixed by Brenntag Nordic and supplied just-in-time at the filling site. This solution, apart from being economically interesting, proved to deliver the necessary flexibility.

Mr Tøstesen comments: *"... I am very pleased with the service and technical support provided by Artec and Brenntag Nordic, and of the products' performance. The cooperation between us proved to be flexible and reliable and I am very pleased with my choice!"*

Looking back over the last year of use of Zitrec F, no problems caused by corrosion were found.

### *After sales support*

As after sales support, Artec has recently examined a sample of Zitrec F, and found that it was as good as new – no metal-ion contamination caused by corrosion of materials was found.

For more information: contact Tom Lansbergen Tel +32(0)474.864.644 [tom.lansbergen@chevron.com](mailto:tom.lansbergen@chevron.com)

**Zitrec**  
Heat transfer fluids

**FREEZIUM**



## Detecting ammonia leakage with an NH<sub>3</sub> Inline detector

By Tom Lansbergen

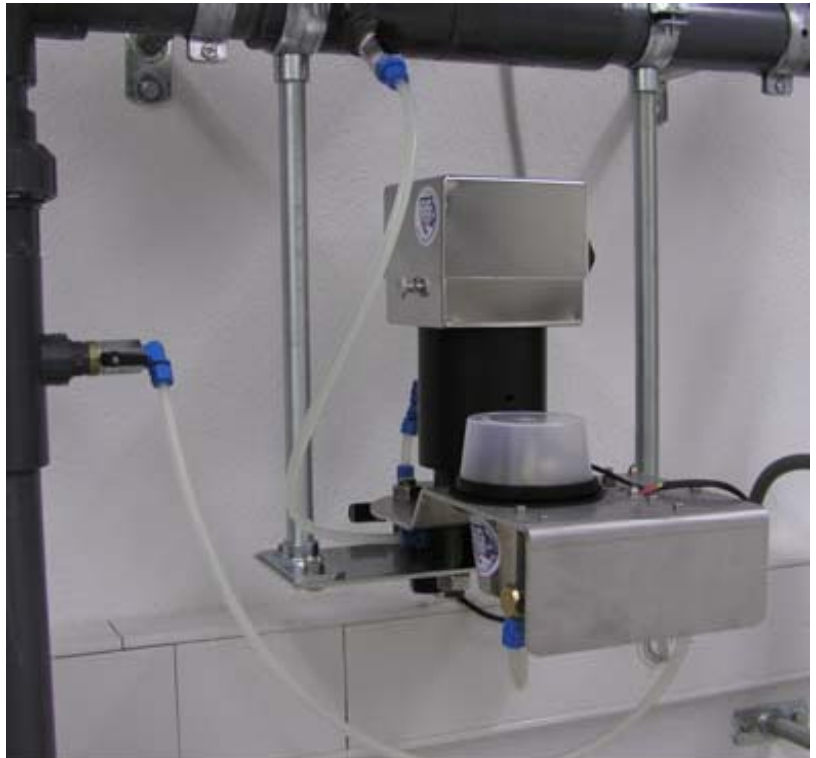
More and more secondary systems using glycol have a primary system containing the natural gas NH<sub>3</sub> (ammonia).

One of the risks in operating systems having ammonia as the primary fluid, is the danger of having a small ammonia leak in the heat exchanger. This will sometimes result in NH<sub>3</sub> contamination of the glycol contained in the system. Since copper is not compatible with ammonia, the result of this is leakage in the glycol coolers which often contain that material. Also blockages may occur as ammonia binds itself with copper forming an insoluble compound.

For safety reasons and to increase reliability of the secondary

systems, it is desirable to have a so called “early warning system”, which is especially important for critical systems.

Ammonia detectors can detect the presence of even small quantities by having it installed in a bypass or even straight in to the pipework just after the heat exchanger. The electronics of this detector can be coupled to a PLC which can then safely turn off the cooling system or which can simply give an alarm to the operators.



### Approval from Geberit Mapress

By Tom Lansbergen

After extensive testing, Geberit Mapress has recently granted the approval to use the following Zitrec products with all their seal and piping materials (Butyl/EPDM/FPMred/FPMgreen/FEPMgreen):

- Zitrec S -10°C
- Zitrec AC
- Zitrec FC
- Zitrec MC
- Zitrec LC

### 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.*

Contact

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# Agenda

- 09 Oct — 11 Oct '07.  
WTT-expo  
Karlsruhe — Germany
- 10 Oct — 12 Oct '07. IKK  
Hannover — Germany
- 22 Nov — 23 Nov '07.  
Cool & Comfort  
Leuven — Belgium
- 28 Nov — 1 Dec '07.  
Termoclima  
Rome—Italy

## Visit to Climatización By Alexandre Moireau

Madrid. From 28th of February until March 3rd, the Climatización exhibition took place. 2000 participating companies and 800 exhibitors made a lot of efforts to turn this gathering into a huge event and with success... More than 55000 people visited the exhibition which has over its last editions become one of the largest in its field. Also Gas-Servei, s.a., our Spanish distributor was there to represent the Zitrec brand.



### **Indirect ammonia-cooling system with water/glycol for fruit and vegetable distribution centre in Osnabrück**

An ammonia refrigeration plant with a secondary water/monopropyleneglycol system generates cooling and heating for a packing station for vegetables and fruits. The complex consists of 12 banana ripening rooms, 2 chilled rooms for storage of vegetables and fruits and a distribution area. Nijssen Koeling designed and delivered.

Source : Koude en Luchtbehandeling, Spring 2007.  
Nijssen Koeling is one of Arteco's customers

### **Prof C. De Jager : 'Heating of the Earth, not just by man'**

According to Prof De Jager, heating of the Earth is also caused by less clouds. CME's (Coronal Mass Ejections) are loaded clouds, containing electrons, protons, helium and oxygen, that are emitted by the sun. This CME forms a natural shield against cosmic radiation. This radiation however is responsible for the development of clouds. Less white clouds, means less reflection of the energy of the sun, which means that higher temperatures are obtained.

Source : Koude en Luchtbehandeling, february 2007

### **READ IN THE PRESS**

### **Brewery with tradition chooses for Cool-Fit**

The article describes the brewing process, and the use of ABS pipes (Acrylnitril-Butadiene-Styrene). It also briefly describes the use of glycol in the brewing process : after the boiling of the wort, this needs to be cooled. Delirium Tremens is cooled to -1°C, which is exceptional. For this glycol of -5°C is used.

Source : Cool & Comfort, June 2007  
Zitrec products are approved by Georg Fischer/ Durapipe for use in secondary cooling systems using their ABS pipes (See Coolflash 8, August 2006)



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Freezium is a registered trademark of Kemira

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