ARTECO
A Joint Venture Company

Cool Flash

OCTOBER 10, 2004, EDITION NR. **1**

Editorial

Welcome to the first edition of Arteco's Cool Flash. This newsletter, dedicated to the Heat Transfer Business, is intended to inform you on our products and services. But our Cool Flash will also inform you on successful projects, will bring you technical topics such as corrosion mechanism and even legislative items will not be forgotten : do you know how the Kyoto-agreement affects our business?... And of course updates on our product range and testimonials will not be forgotten. Further Cool Flash contains some fixed items such as 'Read in the press', a highlight on relevant articles or press-release during the last periods, 'Exhibitions coming-up', with a summarised overview of interesting exhibitions on refrigeration, and our 'Reader's corner' where you can leave your comments and input. ...So stay tuned also for next edition! And enjoy this first issue!

Arteco's HTF team

Do you wonder who at Arteco is the HTF person? That *person* is not a person, but a whole team. We are there for you, to help you out with questions, quotes, orders, deliveries …

Our sales team exists of 5 Sales Manager. Tom Lansbergen is one of them, and is dedicated to the heat transfer business. Tom will provide you the contact of the responsible sales manager for your region. Our sales people will not only be your contacts for price quotations, but also have an extensive technical knowledge and will be able to help you for many of your questions. Jurgen De Kimpe, Senior Developer is our technical specialist. For technical questions, Jurgen is your man. Nathalie Van de Walle**,** Customer Service Assistant at the Ghent office, is your contact for orders and deliveries. And Els Quintyn, Product Management Assistant, editor of this newsletter. She takes care of marketing and sales support.

But although these are the people you will be mostly in contact with, behind them are so much more colleagues: production, quality control, R&D, logistics… It's only by teamwork that the result you are looking for can be attained!

All details on phone numbers, e-mail addresses and fax numbers are available on www.zitrec.com

In this edition :

J. De Kimpe, T. Lansbergen, E. Quintyn & N. Vande Walle (from left to right)

zitrec.com goes LIVE!

As of October 8, the website www.zitrec.com is a fact. This site provides specific information and news on the heat transfer products from Arteco : Zitrec and Freezium are the key products. This is an extension of the existing site www.arteco-coolants.com, treating our automotive coolants. With www.zitrec.com, we put our focus on industrial HTF. All editions of this newsletter will also be available on this site.

What else do you find there : applications, testimonials, interesting links, ….

Check it out at www.zitrec.com

From Arteco to Zitrec

With each edition we will have some explanation on one specific word. Each edition a different letter will be treated.

Arteco was created in 1998 and is a 50/50 JV of Total and ChevronTexaco. The name Arteco stands for the 'Art of doing business with Texaco and Elf Coolants', which describes not only what we do but also how we do it.

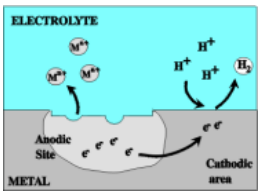
Zitrec Heat transfer fluids

FREEZIUM

Corrosion. What and how?!

A good definition of corrosion is *the degradation of a metal caused by an electrochemical reaction with its environment*. For corrosion to occur, 4 essential components need to be present : a metal, an oxidant, a spatial separation between the so-called anodic and cathodic location, and an electrical conducting environment to provide a closed electrical circuit.

During the electrochemical reaction, electrons are exchanged between an anodic site and a cathodic site on the metal. At the anode site, the metal degrades and sheds electrons at the benefit of the oxidant, the accepting compound. The electrolyte closes the electric circuit needed for conduction.



Corrosion mechanism

A typical example, and probably the most commonly known form of corrosion is the formation of rust or Ironoxide (haematite (red rust): Fe_2O_3) at the contact of iron with water. A drop of water on an iron surface, is not pure but contains dissolved oxygen, acidity and often corrosive ions. Water with ions is highly electrical conductive. Iron in water will form iron ions, meaning soluble iron. The electrons are taken up by the oxygen or protons (depending on composite and pH) and hydroxyle or hydrogen gas is formed. Depending on the pH the iron will dissolve or precipitate as hydroxide or complex salts depending on the contamination present in the water. The electrons liberated from the anode portion of the iron flow to the cathode, which may be a piece of material more resistant than iron, or another point on the piece of iron itself.


Corrosion attack on cast iron

Not al metals are equally sensitive to corrosion. For example magnesium will react very violently in contact with many environments, while copper may require years to develop only some superficial tarnish. A metal not ready to shed its electrons is called noble. The less noble a metal is, the more likely it is to get rid of his extra electrons. However, the relative nobility of the metals can vary widely with the environment they are in.

Lyondell chooses Zitrec L


Mr Olijve, Operations Superintendent, in front of the Lyondell plant

Last year Lyondell chose for Zitrec L as heat transfer fluid for its new plant near Rotterdam. In this plant propylene oxide and styrene monomers are produced. Mr. Olijve, Operations Superintendent, comments : "*... A reliability of 98% can only be achieved when carefully selecting each component, and maintenance costs is one of the important key indicators. It's our experience that water or uninhibited MPG as heat transfer fluid, in the long run results in higher maintenance costs and reduced reliability. The use of MPG-based product was critical to us because of its frost protection and non-toxic properties ...*". Zitrec L, Arteco's MPG-based heat transfer fluid with organic acid inhibitors, has given Lyondell the desired long lasting corrosion protection. Tests after 1 year showed that our product is still protecting the installation at the max.

Readers corner

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

Send your text to Els Quintyn via e-mail, fax or traditional mail, and you'll receive a reply in due time. Pass on your coordinates and you'll be informed in which edition your comment will be incorporated.

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Agenda

- **7 Oct '04**
  NVvK/NVKL Themadag 'Koeltechniek en Scheepsvaart
- **13-15 Oct '04**
  IKK Nurnberg
- **17-19 Nov '04**
  HVAC Poland
- **17-20 Nov '04**
  SHK Hamburg
- **23-25 Feb '05**
  Climatización Madrid

Arteco's product range

Arteco's heat transfer fluid range is probably unique to offer such a complete product range. Herewith an overview:

Zitrec A is our water based heat transfer fluid. Water itself is an extremely good heat transporter, but requires corrosion inhibitors to prevent it from causing corrosive. Zitrec A will protect your installation against corrosion, when no frost protection is required, thanks to the Organic Inhibitor Technology. Zitrec A is used in temperature ranges from 0°C to 80°C.

Zitrec M is based on mono ethylene glycol and also uses the Organic Inhibitor technology. This means a most efficient corrosion protection of metals like copper, brass, aluminium, steel, solder and cast iron. The mono ethylene glycol will provide the necessary frost protection. Zitrec M combines frost protection, a wide range of applications and relatively good thermophysical properties for the application temperature range of -40 to +120°C (if boiling is prevented by sufficient pressure).

Zitrec L is a Mono Propylene Glycol product, with the same inhibitor technology as Zitrec M. Zitrec L is mainly used in applications where the low toxicity of MPG is needed, in temperature ranges from –40°C to +120°C (if boiling is prevented by sufficient pressure). .

Freezium, based on potassium formate, maintains an extreme low viscosity also at low temperatures. This makes it extremely interesting to use in low temperature applications, ranging from -50°C to -10°C.

Arteco's 2 latest product developments are **Zitrec S**, based on potassium formate and sodium propionate, and organic inhibitor technology, and **Zitrec F**, based for 100% on FDA approved ingredients. *(see below: Launch of Zitrec S and Zitrec F on IKK2004*)

Zitrec S, Zitrec L, Zitrec A and Zitrec M

Arteco launches Zitrec S ánd Zitrec F at IKK 2004

With these 2 new products, Arteco further completes its extensive range of heat transfer fluids (*see above: Arteco's product range*). The strength of **Zitrec S** lays in the unique combination of optimized corrosion protection, low viscosities, and a good biodegradability. Thanks to its organic inhibition technology Zitrec S offers new possibilities in applications where temperature can range between -45° C and 20°C, or in many cases to substantial higher temperatures. Freeze protection is possible down to -55°C.

Zitrec F is the second product that will be launched. Zitrec F contains nothing else but FDA approved ingredients. Based on mono propylene glycol, Zitrec F has a low toxicity and therefore finds its application in industries where this is a requirement, typically in the food industry. Zitrec F will be launched at IKK 2004 and will be commercially available starting January 2005. Zitrec F is used in temperature ranges from -30°C to +90°C, but can offer freeze protection down to –60°C.

Heat pumps : TNO had developed in cooperation with Novem a software tool to quickly calculate whether a heat pump can be used cost-effectively. It is called Quick-ScanHeatPumps utility. It is mainly focused on applications in offices and hospitals

Source Installateurszaken,, edition May 2004

READ IN THE PRESS

Natural Refrigerant, a conference held on June 22nd, and organized by Unilever, Coca-cola and Mc Donalds took place. All 3 proposed their solution to fulfil their promise to Greenpeace in 2000, to do whatever possible to stop the use of HFC's in their sales points. Coca-cola and Mc Donalds are currently going for CO2.
Other expositions were done, CO2 compressors being one of them. However today cost is still an issue

Source Koude en Luchtbehandeling , edition 7

Gustav Lorenz 6th Natural Working Fluids Conference took place on 29/08/04. Carbondioxide has been a popular theme, together with abstracts on hydrocarbons, air/water/ice slurry and ammonia. Tom Lansbergen was present. More about it in next edition

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Zitrec Heat transfer fluids

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