

## ➤ PERIODICAL CHECKS ON GLYCOL MIXTURE

Since the anticorrosive characteristic of the antifreeze mixture in the cooling plants are destined to decrease physiologically, it is advisable to **check periodically its state, at least every two years.**

Two types of analysis are recommended:

- a) **PH DETERMINATION** (not lower than 7,5)
- b) **ALKALINITY OF RESERVE** (not lower than 5)

Remember that it is necessary to check if the concentration of the mixture is correct (55% of water and 45% of antifreeze propylene glycol) through the measurement of the **refractive index.**

### **Why periodical checks?**

To safeguard the integrity of pipelines in the cooling plant, maintaining constant the anticorrosive properties of the antifreeze mixture.

When the mixture, that should be colourless, becomes **yellowish/amber**, means that the glycol has already exhausted its properties and that it is corroding parts of the circuit.

### **Why propylene glycol?**

The choice is mainly dictated by two reasons:

- 1) A **lower toxicity** in comparison with the ethylene glycol; a little percentage of contamination due to accidental spillages can be tolerated (remember that can be noticed influences on the food taste from levels of 0,5% and up);
- 2) The **lower cost of a future possible disposal** (the product is not labelled with some phase of risk for which it is classified as special waste and not toxic harmful as for the ethylene glycol).

### **Why to use the antifreeze mixture?**

**... Also when the chiller has to produce water at positive temperature (2°C and up)?**

Contrary to what you might think, the correct antifreeze mixture (55% water + 45% propylene glycol) always have to be used, also when the chiller is programmed only to produce water at positive temperatures (>2°C).

In fact, already when water is produced at **10°C** (noticed by the glycol mixture thermostat) inside of the evaporator, where happens the thermal exchange between mixture and refrigerant gas R-404A, the temperature is approximately **-1 °C**.

If glycol is not used, the ice formation between the evaporator plates causes the decreasing of the thermal exchange and, most important, with the increase of volume causes damages and the break-up of the plates.

