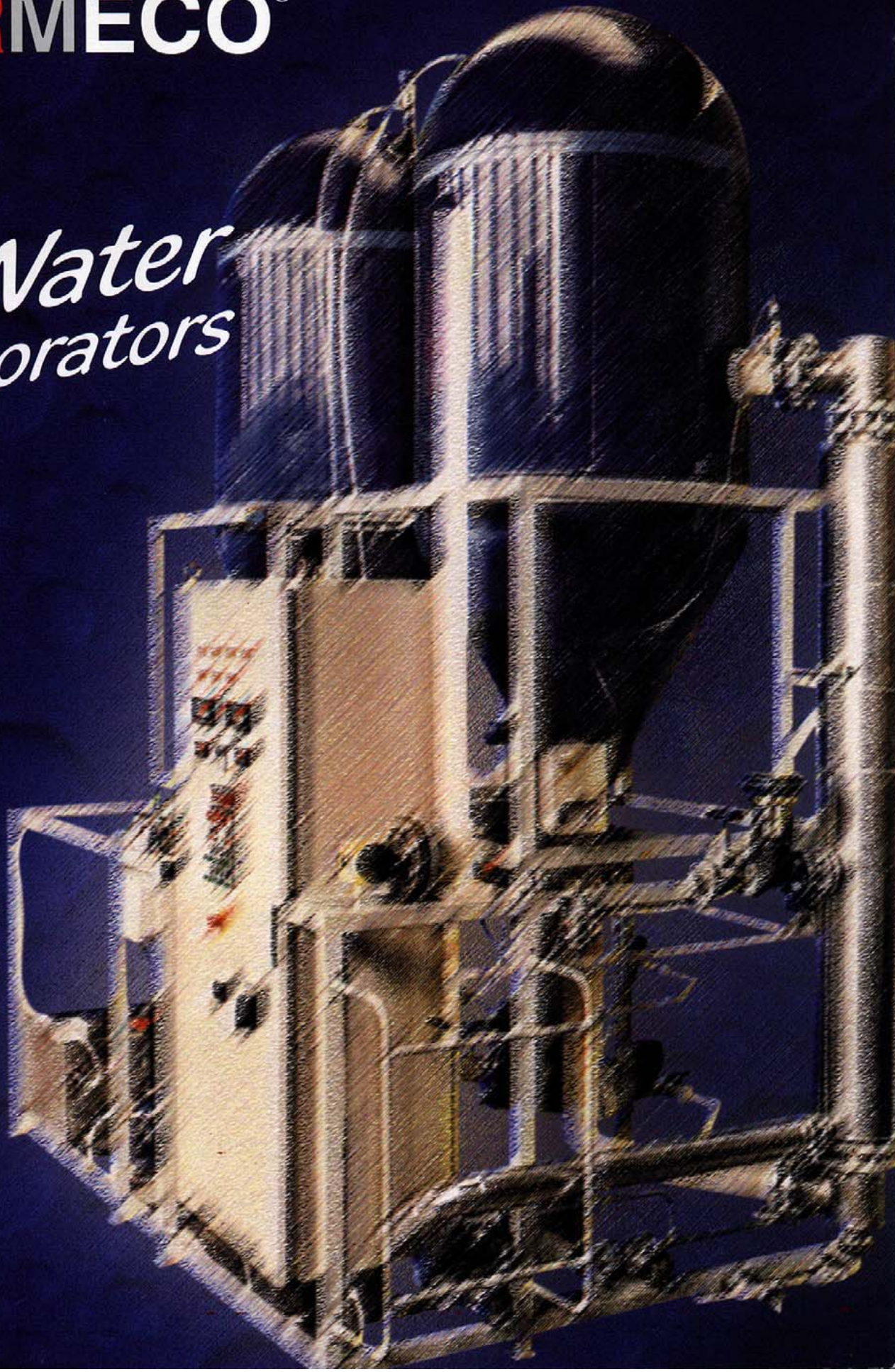




**FORMECO**<sup>®</sup>

*Water  
Evaporators*



# Formeco Evaporators

Resolving the problems of disposal for water-based process liquids: minimisation of the residues, recovery or waste minimization of process water.

The **FORMECO EVAPORATORS** enable the separation of water from the dissolved products. The process consists of boiling the solution and subsequent evaporation of the water contained in the product being processed. The condensed water vapour is extracted from the evaporator. The residue, being less volatile, remains inside the boiler and will be unloaded automatically.

## FORMECO EVAPORATORS High-tech technology

- Heating  
Condensation: Heat pump  The maximum yield at minimum operating costs
- Working pressure: High vacuum  Evaporation at reduced temperature, saving energy and reducing corrosion and acidification
- Process: Single or Multiple Effect  The technology for small and large production
- Programming: Microprocessor-controlled  365 operating days per year without operator intervention with original software Formeco

**FORMECO** Over 20 years of experience in the recycling sector, guaranteeing units with a high reliability and lifetime expectancy.

## IDENTIFICAZIONE ABBREVIATION

Series	Hourly Production	Heating	Typology	Effects
<b>WT</b>	.....	Heat pump	HP - Immersed serpentine	S - 1E*
		Warm water	HW - Scraped Boiler	R - 2E
		Vapour	HS - Forced circulation	Cf - 3E
		-	- - Natural circulation	Cn - -

\*Not indicated

## **Application fields**

### **Food and Confectionery Industry:**

*Recovery and concentration of sugar solutions*

### **Graphic Arts and photographic labs:**

*Concentration of developing and fixing baths*

*Concentration of roller rinsing water*

*Recovery of inks from the washing water*

### **Dump sites:**

*Treatment of percolation water*

### **Oenology:**

*Concentration of must*

*Elimination of sulphate*

### **Preparation of medical herbs:**

*Recovery of solvents utilised for extraction*

*process*

### **Pharmaceutical, Chemical, Cosmetic Industry:**

*Concentration washing liquids*

### **Galvanic Industry:**

*Recovery of metals from washing process*

*(Chromium, Nickel, Copper)*

*Concentration of polluted baths (degreasing, pickling)*

### **Rubber Industry:**

*Recovery of vulcanisation salts*

*Purification of washing water*

### **Dairy Industry:**

*Recovery of proteins from milk whey*

### **Mechanical Industry:**

*Concentration of oily emulsions*

*Concentration of liquids from finishing processes*

*Concentration of washing baths*

### **Oil mills:**

*Treatment of water from oil presses*

### **Goldsmith's Industry:**

*Concentration of washing and picking process*

*Recovery of gold from the residue of the treatment process*

### **Pressure die-casting:**

*Concentration of working liquids (detaching*

*product, glycol, lubricants)*

### **Food Industry:**

*Recovery of food additives from different*

*industrial process liquids*

### **Cold meats and salami industry:**

*Concentration of process broth*

*Recovery of greases and gelatine*

### **Dry cleaner's Plant:**

*Recovery and concentration dyes and washing*

*liquids*

### **Thermal Treatment:**

*Recovery of tempering salts*

*Purification of washing water*

### **Painting Plant:**

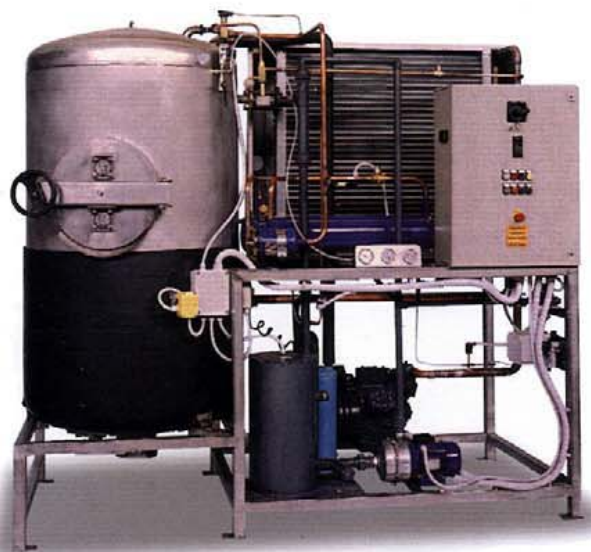
*Concentration of oily emulsions*

*Recovery of solvents*

*Concentration of phosphoric degreasing baths*

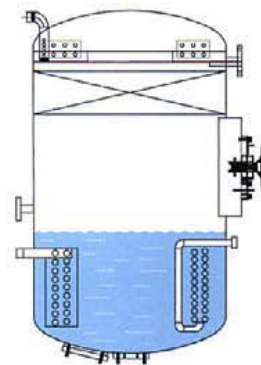
# Heat pump evaporators

WT...HP



## WT... HP-S Mono-block units Heating with immersed serpentine

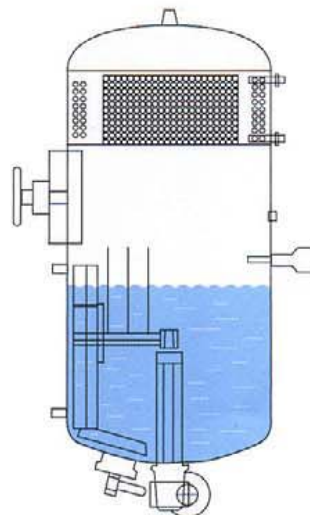
- For the treatment of non-encrusting liquids
- For oil-water emulsions with concentrations < 20%
- For waste streams from die-casting and industrial degreasing



## WT... HP-R Mono-block units - Heating with external serpentine- Scraped boiler

- Versatile units for the treatment of a wide variety of liquids and particularly for encrusting liquids
- The scraper favours the heat exchange and the concentration of high particulate residues, avoiding the encrusting of the heating surface
- Low energy consumption
- Compact dimensions design

These units can be assemble with optional concentrators on the residue outlet for maximum concentration of the process residue.



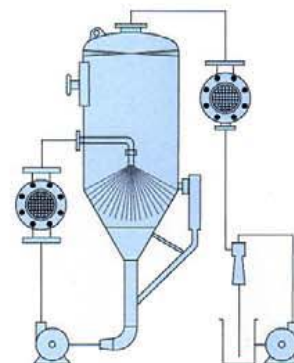
## WT... HP-Cf Modular machines with Forced Circulation

Units with Modular design: Evaporator Heating Condensation

Constant circulation of the product to be treated in high-efficiency expansion chamber

- For high hourly throughput
- For waste streams with a density < 1,25 kg/litre and suspended solids concentrations < 20%
- Reduced sensitivity to foam formation
- Optimal accessibility for maintenance
- Low energy consumption

When higher residue concentrations have to be achieved, these units can be combined with units of the HP-R series.



# Warm-water and vapour heated evaporators

**WT...HW**      **WT...HS**

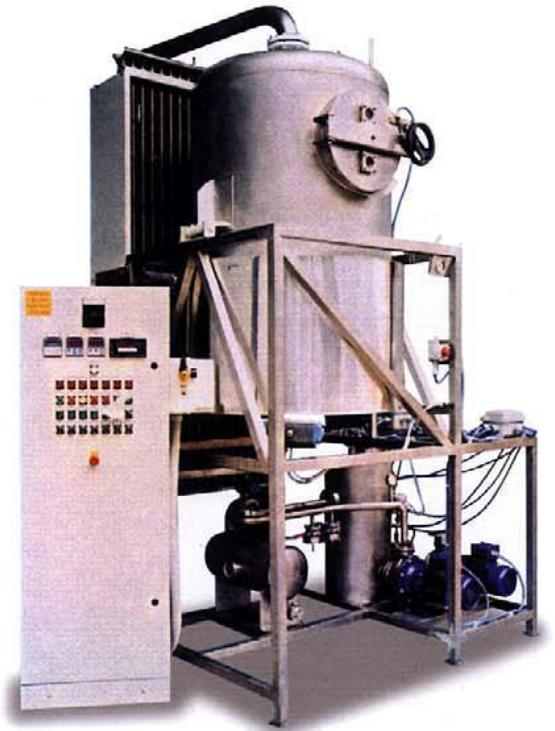
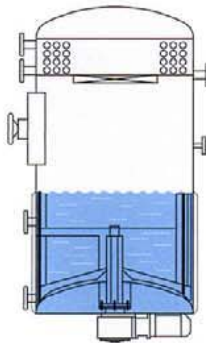
Using warm water or steam sources already available at the customers' site, energy savings can be considerable with reduced investment costs.

The units are of simple construction and deliver a guaranteed high production rate due to the high heat exchange coefficient of water and steam.

## **WT...HW-R      WT...HS-R** **Mono-block units - Heating with external serpentine - Scraped boiler**

- Versatile units for the treatment of a wide variety of liquids and particularly for encrusting liquids
- The internal scraper / mixer favours the heat exchange and the concentration of the residue, avoiding the encrusting of the heating surface
- Compact design

These units can be combined with optional concentrators on the residue outlet for maximum concentration of the process residue.

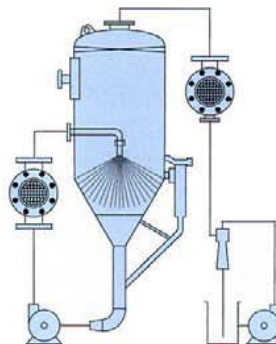
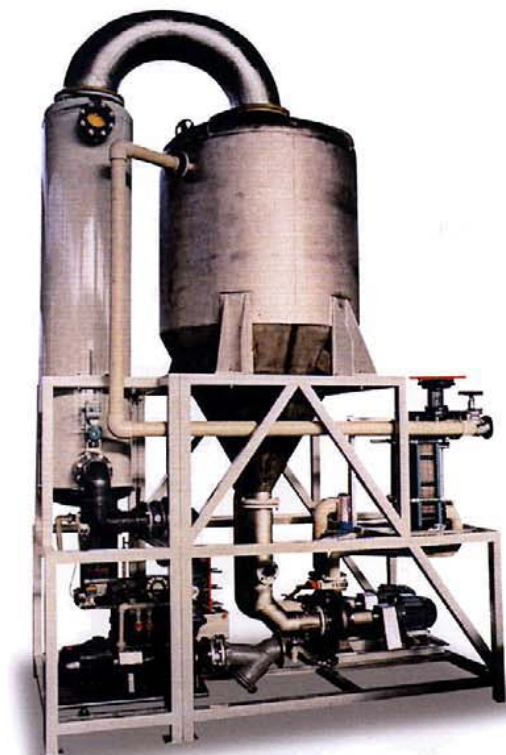


## **WT...HW-Cf      WT...HS-Cf** **Modular machines with Forced Circulation**

Units with separate groups: Evaporator Heating Condensation

Constant circulation of the product to be treated in high-efficiency expansion chamber

- For high hourly throughput
- For waste streams with a density < 1,25 kg/litre and suspended solids concentrations < 20%
- Reduced sensitivity to foam formation
- Optimal accessibility for maintenance



# Warm-water and vapour heated evaporators

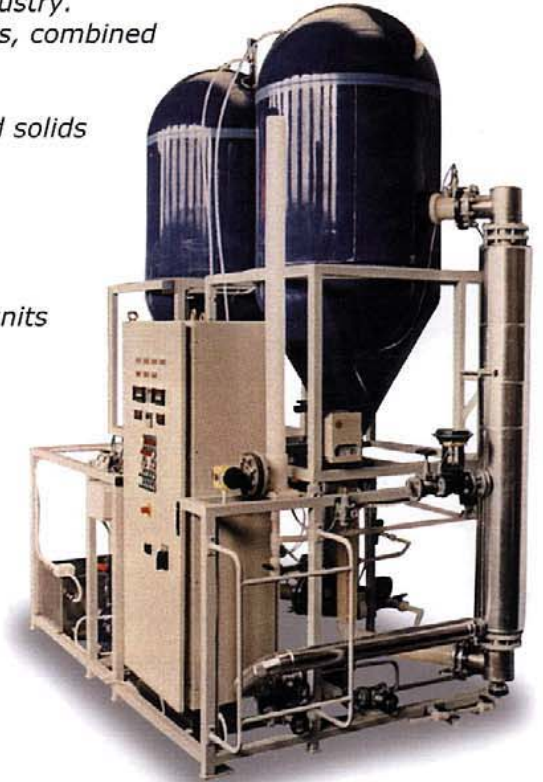
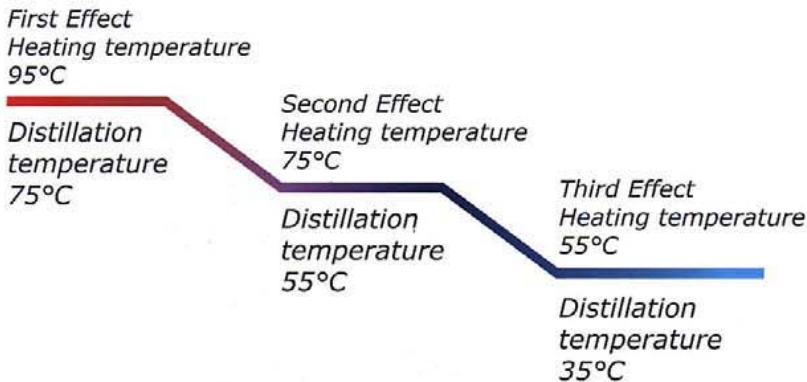
## Modular units with Multiple Effects

WT... HW-2/3E WT... HS-2/3E

Units equipped with two or three boilers (called two or three effects) operating in series. A different vacuum rate in each individual boiler allows for different evaporation temperatures. Another advantage is the automatic sterilisation of the product in the third effect, making the units highly recommended for use in both pharmaceutical and food industry. This technology allows the reduction of energy costs by two-thirds, combined with minimal investment costs.

- For waste streams with a density < 1,25 kg/litre and suspended solids concentrations < 20%
- Maximized hourly production
- High distillate quality
- Minimal operating costs

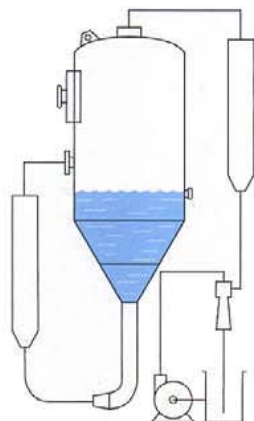
When higher residue concentrations have to be achieved, these units can be combined with units of the HW-R series.



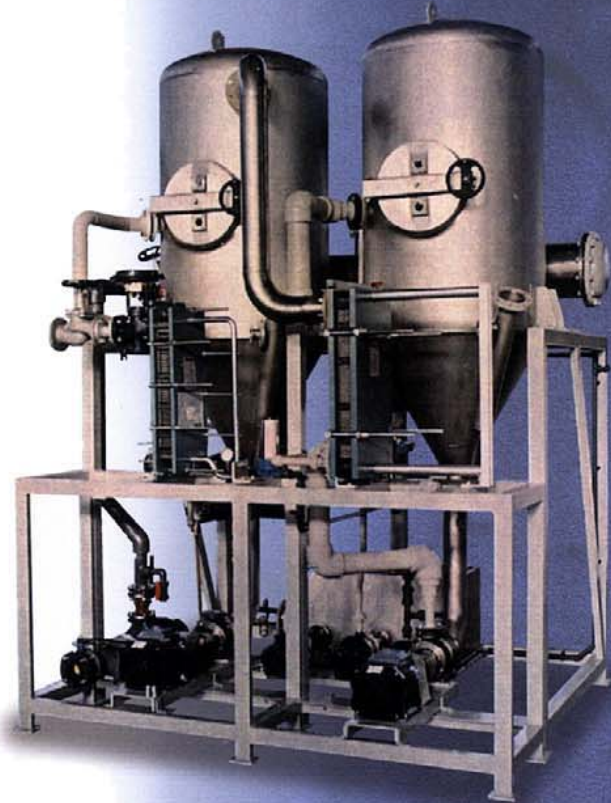
## Modular units with Natural Circulation

WT... HW-Cn WT... HS-Cn

These units are designed to treat highly aggressive products. During treatment of sulphuric acid, hydrochloric acid, hydrofluoric acid, etc. the movement of the process liquid with pumps is always a critical application. Formeco technology allows for the treatment of these liquids in a safe and simple circuit using natural circulation. The use of highly resistant plastic materials and alloys guarantees corrosion resistance.



# Formeco



*Solvent Recovery Systems*



*Water Evaporators*



*Acid Recycling Units*



*Formeco has been producing solvent recovery systems, water evaporators and acid recycling units since 1977, manufacturing in Northern Italy in the production factory of Noventa Padovana (4000 m2 indoor - 10000 m2 outdoor). Installing more than 28.000 machines, Formeco keeps the world-wide leadership position on this field.*



*Common in all Formeco units is quality, workmanship and dedication to total customer satisfaction. Each Formeco machine is tested and tuned at the factory to give customers the ultimate in performance and trouble-free operation.*



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*Formeco is a Company certified ISO 9001*



*Formeco facilities: an R. & D.:*

- *design and project technical department,*
- *a chemical laboratory for analysis,*
- *a complete range of pilot units for industrial tests.*



*Foreign languages spoken: English, German, Spanish, French, Dutch, Portuguese, Russian, Turkish, Ukrainian*

*Producing systems for the treatment of solvents, water and acid, Formeco offers a complete solution to the industry pollution problems, contributing to the environmental protection.*



# Our services, our products

## Services

Design of treatment systems for liquid waste streams

Turn-key project management

Post-sales service and maintenance

## Products

- Water evaporators
- Reverse osmosis plant
- Crystallizers
- Ionic exchange units
- Solvent distillers
- Inorganic acid recycling units
- Azeotropic vacuum distillers
- Filtration systems

## Where we are located

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Certificato n° 50 100 0245



ISO 9001



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[www.distillation.cc](http://www.distillation.cc)

[sales@distillation.cc](mailto:sales@distillation.cc)

March 1, 2010

Contact information update:

We have begun the long arduous process of moving our office.  
Please continue to direct mail to:

Sawyer and Smith Corporation  
5412 Homegardner Road  
Castalia, Ohio 44824

All phone contact to:  
423.289.6894

All other email and website information remains the same. You can contact us at any of the existing web addresses. Email is received remotely and responded to more quickly and efficiently than a phone message. If you call the office, please leave a thorough message INCLUDING your email address so that we can send you the required information as soon as possible.

Thank You.