

# WATER IN THE FOOD INDUSTRY

3



The BWT group:  
Turnover A. = 500M

Workforce = 2900

International presence

*Africa*

*Eastern Europe*

*Maghreb*

*French overseas departments and territories*

*North America*

*South America*

*Middle East*

*Western Europe excl. EU*

*Central and Southern Asia*

*European Union*



*Working through its export department coordinating a network of BWT subsidiaries and partner distributors, BWT France sets up custom engineered water systems in 5 continents and offers its customers:*

- *Engineering systems according to field of activity,*
- *Studies, « PID »*
- *Laboratory: 14000 analyses / month,*
- *Sales engineering training,*
- *After Sales,*
- *Local stock*

**EXPERIENCE, THE CORE OF INNOVATION...**



# PERMO, CUSTOM-ENGINEERED WATER SYSTEMS

## PERMO - BWT FRANCE

PERMO (BWT group), a leading point-of-use water treatment specialist for more than 80 years, has acquired Irreplaceable experience In the development of technical, equipment and product solutions in the following broad areas:

**Industry, local authority and service Industry.**

Innovation, technical optimisation, services... a three-prong target driven by the Increasing demands made by user Industries.

## ORGANIZATION

PERMO's wide-reaching operations and coverage and the quality of its specialists offer the best guarantee of service for PERMO product users. Special water treatments ( ultra pure water, circuit conditioning) demand a precise technical match between the offer and the problem together with strict supervision of the installed treatment system. Those conditions can only be challenged through the know-how of experienced professionals such as the personnel in PERMO's Project and Water conditioning departments.

## PERSONNEL

Our men and women, true professionals with specific technical product training guarantee their:

- skills,
- availability,
- regional presence.

## RESOURCES



More than 500 staff, an HQ and a factory in the Paris region and 16 regional offices in major centres enable us to cover effectively the whole country with a customized service. Our Export Department In partnership with local agents offer their support anywhere In the world.



**1922**

Launch of PERMO brand.

**1957**

PERMO, from being the «water» division of PHILLIPS et PAIN, becomes a subsidiary of DEGREMONT.

**1985**

PERMO joins the « WAS- SERTECHNIK » division of German firm BENCKISER.

**1990**

Foundation of the European group Best Water Technology through the MBO of BENCKISER BWT's « WASSER- TECHNIK » division whose HQ is located at Mondsee, Austria. BWT becomes the first European point-of-use water treatment group. The subsidiary companies are based in major European countries; PERMO S.A Is one of those subsidiaries.

**1992**

Founding of BWT France S.A.

**1995**

Acquisition de la société AQUAFRANCE.

**1997**

Intégration de l'activité CHRIST.

**1999**

Fusion entre PERMO / AQUAFRANCE.

**CURRENTLY...**

even more innovative.

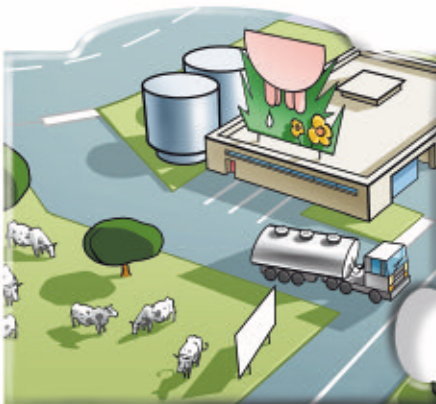


RESPONSABLE CARE  
ENGAGEMENT DE PROGRES



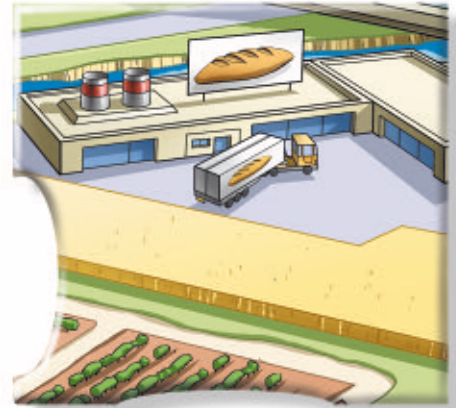
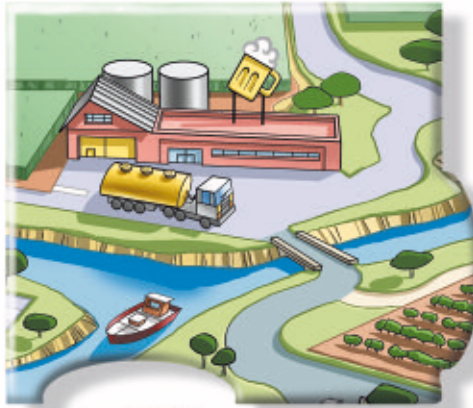
# PERMO WATER QUALITIES IN THE FOOD INDUSTRY

Water, an essential raw material for food production, has become a major concern as much for the quantities available as for the quality required for its use in the production of the following products:





Yoghurt, Beer, Bread, Cheese, Soft drinks, Vegetables,  
Pasta, Wine, Flour, Meat, Alcohol, Spring water, ,  
Tinned food, Biscuits, Fish, Mineral water, Sugar,  
Milk, Fruit, Pre-prepared food, Fruit drinks ...



**Boiler water, reheating water, cleaning water,  
sanitizing water, cooling water, condensation  
water, ...**

# PERMO AND INDUSTRIAL WATER

Industrial water is untreated water (underground or surface water) used for industrial facilities. Possible qualitative conditions are imposed by the conditions of operation of your equipment (maker specifications: heat exchangers, boilers, cooling towers,...).

**FLOW RATE - COST - FLEXIBILITY - EFFICACY -  
STABILITY - CONSISTENCY**





Tap water, drinking water, flushing water,  
disinfection water, water for food preservation,  
water as raw material, ...

# PERMO AND

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## DRINKING WATER

Drinking water for human beings must comply  
with precise regulatory specifications.  
The said water is intended for drinking, cooking,  
preparing food or for other domestic uses.  
The said water is used for the production,  
processing and preservation of your food products.

**POTABILITY - TESTING - INNOCUOUSNESS**  
**QUALITY - SERVICE - LEGISLATION**



Water as end product, water for alcohol reduction, dilution water, sanitizing water, water as ingredient, ...

## PERMO AND PROCESS WATER

Process water is water produced from water intended for human consumption...

The water is submitted to an additional physico-chemical or sanitary refining treatment imposed by the specific conditions of your process.

The process water treatment unit is an integral part of your **production tool**. For that reason, it requires special attention when the treatment is being finished (**3A, EHEDG, GMP,...**), can be integrated in your **CIP** cycles and can undergo an **HACCP** approach.

HYGIENE - KNOW-HOW - THROUGHPUT -  
PARTNERSHIP - TRACKING





**Water from cow wash systems, wash water, evaporation condensate, eluted regeneration water, dipping water ...**

## **PERMO AND RESIDUAL WATER**

Water used by Industry must comply with current legislation to allow their discharge into the natural environment or into a local community network.

PERMO's know-how in the Implementation of new membrane technologies allows you to control that waste by value adding and by reducing your water consumption.

That new approach to the recycling of Waste water clearly falls in line with new environmental conditions (EN 14001, zero waste target...).

**ENVIRONMENTAL REponsibility -  
RECYCLING - LEGISLATION - INNOVATION -  
BRAND IMAGE -  
CLEAN PROCESS**



# WATER TREATMENT

Food production, the industry using the most water, collects both underground water (spring or bore hole) and surface water (lake, river, stream) or obtains its supply from the local town network.

The design of water treatment units necessitates a good basic knowledge of the elements making up water resources:



## INSOLUBLE MATTER:

Insoluble matter causes turbidity, colouring and conditions the water's fouling index.

It can be of **suspended matter** such as sand, mud, clay, metallic hydroxides or plant debris.  
It can also be **colloidal matter** of mineral origin (silica, fine clay, silicates, ...) or of organic origin (humates, fulvates, tannins, ...).



## SOLUBLE ELEMENTS:

Elements that are dissolved in the water and invisible to the naked eye. They are the cause of many phenomena including corrosion, scaling and condition the water's potability.

The matter can be mineral **salts or ions** contained in the water.  
It can also be dissolved gas and dissolved **organic matter**.



## MICRO-ORGANISMS:

Living organisms invisible to the naked eye.

They are present in all types of water resources and adapt themselves to develop and contaminate all types of industrial waters.  
They can also be **bacteria, thrus fungus, moulds, viruses, algae** or **protozoa**.



## INDUCED IMBALANCES:

The presence of certain soluble elements or micro-organisms in water leads to significant and costly disorders:  
**scaling, corrosion** or **biofouling** (fouling by biocontamination).

# IN THE FOOD INDUSTRY

**PERMO, Europe's water treatment leader, will help you choose the installation most suited to your operations and application.**

## **TREATMENT OF INSOLUBLE MATTER:**

Insoluble matter treatments are defined as «pre-treatments» for they are a preliminary to any other complementary finishing treatment. The care to be taken for such treatments is fundamental to the perennality of complementary treatments. The stage is that of **Water CLARIFICATION.**



## **TREATMENT OF SOLUBLE ELEMENTS:**

For some food industry applications, even if potability criteria are vital, they are not always sufficient. The treatment of the soluble elements is then necessary to obtain a quality totally matching up to your type of production or process application. The stage is that of **Water PURIFICATION.**



## **TREATMENT OF MICRO-ORGANISMS:**

Reduction or elimination treatments of micro-organisms in the water meet legislative conditions by controlling the bio-contamination of food products. The stage is that of **Water DISINFECTION.**



## **TREATMENT OF INDUCED IMBALANCES:**

Induced imbalance treatments are based on scaling or corrosion inhibitors, on biocides, algicides and on coagulation or flocculation agents. Such treatments enable an enhanced operational life span and reliability of your equipment and manufacturing process. The stage is that of **Water CONDITIONING.**





# PERMO-BWT DESIGNS, DEVELOPS AND INTEGRATES ALL TECHNOLOGIES...



## TREATMENT OF INSOLUBLE MATTER

### PHYSICO-CHEMICAL TECHNIQUES:

- Removal of iron and manganese
- Sand or active carbon filtration
- Anti-fouling filtration
- Settlement or flotation



### MICRO-FILTRATION TECHNIQUES:

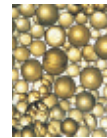
- Cartridge microfiltration
- Tangential microfiltration
- Ultrafiltration



## TREATMENT OF SOLUBLE ELEMENTS

### ION EXCHANGE RESINS:

- Softening
- Decarbonatation
- Cation / anion demineralisation



### MEMBRANOUS TECHNIQUES:

- Nanofiltration
- Reverse osmosis
- Electrodionisation



# ...SUITABLE FOR THE NEEDS OF THE **FOOD INDUSTRY.**



## TREATMENT OF MICRO-ORGANISMS:

### PHYSICOCHEMICAL DISINFECTION:

- Chlorination
- Sterilization by microfiltration ( 0.2  $\mu$ m)
- Photooxidation by UV irradiation
- Ozonation



### THERMAL DISINFECTION:

- Pasteurisation
- CIP at 85°C
- Steam sterilization



## TREATMENT OF INDUCED IMBALANCES:

### WATER CONDITIONING:

- Analysis
- Audit and Diagnostics
- Full range of formulations
- Validation of programs
- Verification and supervision

Analysis, diagnostics, prescription, advice, economic evaluation, treatment program monitoring, testing serviceability of equipment and circuits, corrosion monitoring, bacteriological testing, operational personnel training, ... PERMO's conditioning department offers industry a global strategic approach.





## FROM DESIGN THROUGH TO COMMISSIONING...



The diversity of water treatment systems used by the food industry demands very advanced multi-purpose techniques.

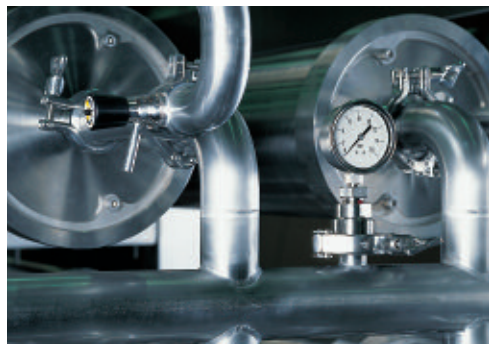
PERMO is currently the only water treatment market supplier whose offering, from the design of equipment through to the maintenance of installations, integrates an uninterrupted chain of excellence in a single comprehensive structure to embrace: engineering, design of systems and components, manufacture of finished equipment for chaining systems, implementation and occasional or contractual technical monitoring of said chaining systems. The coverage of regional PERMO agencies, their proximity and team excellence are additional advantages making for a fast and efficient service.

Those particular points offer PERMO water treatment systems users exceptionally safe and secure operating conditions.





**FROM DESIGN THROUGH TO COMMISSIONING...**



**BWT**  
BEST WATER TECHNOLOGY

**permo**  
TRAITEMENT DES EAUX

*Permo, leader in Europe for water treatment, is a member of the International Office for Water, SYPRODEAU and WOA federations.*

# PROXIMITY.

## **38320 EYBENS LES RUIRES (Grenoble)**

3c, rue Irène Joliot Curie  
Tél.: 04 76 14 77 20 - Fax : 04 76 14 77 29  
e-mail : permo.grenoble@permo.tm.fr

## **33187 LE HAILLAN (Bordeaux)**

Z.A. Toussaint Catros - Rue Ariane  
Tél.: 05 56 13 02 18 - Fax : 05 56 55 94 92  
e-mail : permo.bordeaux@permo.tm.fr

## **59175 TEMPLEMARS (Lille)**

Z.I. - 15 A, rue du Plouvier  
Tél.: 03 20 16 03 80 - Fax : 03 20 16 03 89  
e-mail : permo.lille@permo.tm.fr

## **69007 LYON**

213, rue de Gerland  
Les Jardins d'Entreprise  
Tél.: 04 78 72 99 17 - Fax : 04 78 72 88 07  
e-mail : permo.lyon@permo.tm.fr

## **13011 MARSEILLE**

112, Traverse de la Serviane  
Tél.: 04 91 44 87 86 - Fax : 04 91 45 25 62  
e-mail : permo.marseille@permo.tm.fr  
**Agent à Montpellier :** Tél.: 04 91 44 87 86

## **54500 VANDOEUVRE (Nancy)**

Technopôle Nancy-Brabois  
2, allée d'Auteuil  
Tél.: 03 83 67 61 89 - Fax : 03 83 44 65 81  
e-mail : permo.nancy@permo.tm.fr

## **68126 BENNWHIR GARE (Colmar)**

Zone Industrielle  
3, rue du canal  
Tél.: 03 89 27 46 71 - Fax : 03 89 27 35 07  
e-mail : permo.wintzenheim@permo.tm.fr

## **27100 VAL DE REUIL (Rouen)**

Parc d'affaires "Les Portes de Val de Reuil"  
9, voie des Clouets  
Tél.: 02 32 63 32 32 - Fax : 02 32 63 32 30  
e-mail : permo.rouen@permo.tm.fr

## **37170 CHAMBRAY-LES-TOURS (Tours)**

10, rue des frères Lumière  
Tél.: 02 47 74 74 48 - Fax : 02 47 74 74 49  
e-mail : permo.tours@permo.tm.fr

## **44700 ORVAULT (Nantes)**

79, av. Claude Antoine Peccot  
Tél.: 02 51 77 84 00 - Fax : 02 51 77 84 09  
e-mail : permo.nantes@permo.tm.fr

## **51370 LES MESNEUX (Reims)**

Parc d'activités lieu-dit Les Vianneries  
Tél.: 03 26 84 00 52 - Fax : 03 26 84 05 04  
e-mail : permo.reims@permo.tm.fr

## **06580 PEGOMAS (Cannes)**

Le Triangle du Bateau  
138, chemin de l'Hôpital  
Tél.: 04 93 40 59 00 - Fax : 04 93 40 59 09  
e-mail : permo.cannes@permo.tm.fr

## **PARIS 1 (28-78-91-94)**

### **78190 TRAPPES**

Parc d'Activités de Pissaloup  
1, rue Blaise Pascal  
Tél.: 01 30 68 50 80 - Fax : 01 30 68 20 60  
e-mail : permo.paris1@permo.tm.fr

## **PARIS 2 (92-95)**

### **92000 NANTERRE**

191, rue du 1<sup>er</sup> Mai - Hall N°3  
Tél.: 01 46 49 01 01 - Fax : 01 46 49 50 69  
e-mail : permo.paris2@permo.tm.fr

## **PARIS 3 (75-77-89-93)**

### **92000 NANTERRE**

Les Jardins de la Défense  
126, avenue Georges Clémenceau  
Tél.: 01 47 29 21 00 - Fax : 01 47 29 21 22  
e-mail : permo.paris3@permo.tm.fr

## **C.A.R. ROISSY**

### **Centre d'Appui Régional Ile de France**

Technoparc de Paris Nord 2  
69, rue de la Belle Étoile - B.P. 50110  
Tél.: 01 48 17 40 04 - Fax : 01 48 17 40 00  
e-mail : permo.roissy@permo.tm.fr

## **SERVICE EXPORT**

103, rue Charles Michels  
93206 Saint-Denis Cedex - FRANCE  
Tél.: +33 1 49 22 46 51 - Fax : +33 1 49 22 45 30  
e-mail : permo.export@permo.tm.fr

- **Commissioning**
- **Technical support**
- **Spare parts**
- **Contracts**

The excellent coverage of the Permo network has led to the development of a true guaranteed accessible service, on a regional basis, with fast, often very selective interventions where the maintenance of water quality cannot wait (food industry, pharmaceuticals, hospitals, ...). Our engineers and technicians on call locally under those emergency conditions offer their skills and availability to meet customer conditions, whatever the field of activity. From diagnostics to prescription, from commissioning to the supervision and maintenance contract, our major concern is to make the service our most comprehensive.

**C.A.R.:** Centre d'Appui Régional

# DOMESTIC AND INTERNATIONAL OPERATIONS



*At the service of its customers...*

*SIDEL - FINDUS - PANZANI - CANDIA - NESTLE WATERS - COGNAC REMY MARTIN - SOPAD NESTLE - HAAGEN DAZS DANO-  
NE - COCA COLA - COGNAC COURVOISIER - COINTREAU - MOËT ET CHANDON - BOCUSE - CEDILAC - ENTREMONT CARGILL  
FOODS - ADELSHOFFEN - SENOBLE - BOLS WESSANEN - PERRIER VITTEL - BACARDI MARTINI - MC CAIN  
FRANCE BOISSONS - LSDH - MARNIER LAPOSTOLE - LA PIE QUI CHANTE - VIRGIN COLA - HEINEKEN - LVMH - CADBURY  
SCHWEPPES - MADRANGE - DELIFRUIITS - EUROSERUM - CHAMBOURCY - LACTALIS - ABCD - BEL - BENEDICTINE  
BOULANGERIE DE L'EUROPE - FERRERO - VICO - ITM - IGRECA - PAINDOR - PERNOD RICARD - ORANGINA - UNISOURCE  
DAUNAT - TROPICANA LOOZA - PEPSI COLA - HARRY'S - PASQUIER - CHARAL - BONDUELLE - JOKER - NEPTUNE ...*

*EXPERIENCE, THE CORE OF INNOVATION...*





103, rue Charles-Michels 93206 Saint Denis cedex

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