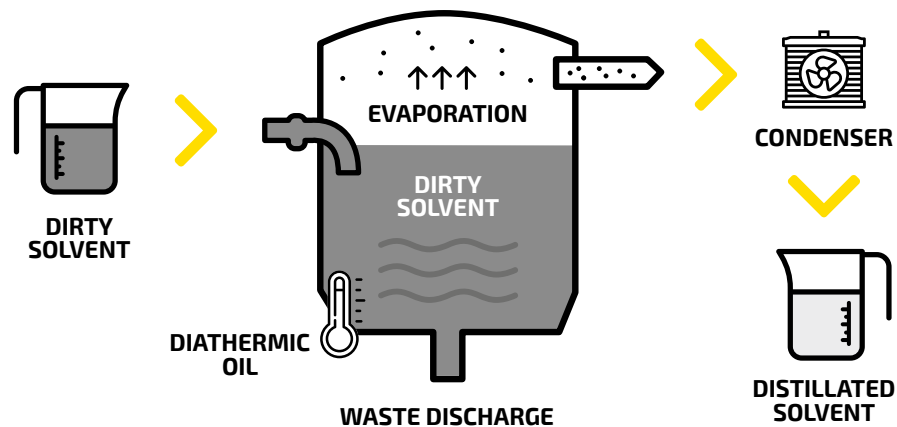


# SOLVENT DISTILLERS

## DISTILLATION: A PHYSICAL PROCESS

Handling pollutants properly is an essential requisite for any modern industry. Thanks to the wide range of its products and their robustness and efficiency, IST has **for more than 30 years been a byword for the proper handling of waste materials.**

Distillation purifies individual substances or separates out complex mixtures by exploiting the different boiling points of their various components. The change of state from liquid to gas is a purely physical phenomenon, which does not alter the chemical characteristics of the product. The liquid to be distilled is heated to boiling point inside a boiler. The more volatile compounds (such as solvents) change to the gas state sooner and are cooled in the condenser where they return to the liquid state; the pollutant, meanwhile, accumulates in the boiler, from which it is then removed with methods which vary with the type of distillation system.



## PROCESS CONTROL

Industrial distillation systems must be able to run continuously with minimal action from the operator. Each phase of the process is therefore monitored automatically, to assure the quality of the product and maintain its specifications.

A distillation system is controlled by measuring some of the process's significant parameters:

- the heating and cooling temperature
- the temperature of the output vapour
- the level of liquid in the boiler
- the volume of material in the storage tanks

These measurements enable us to modify some of the input parameters with a personalised control system.



CONTINUOUS  
DISTILLATION



BATCH  
DISTILLATION



VACUUM  
DISTILLATION

## DISTILLATION METHODS

Distillation can use a variety of methods which implement more or less complex processes (flash, reflux, fractioned and azeotropic distillation).

IST distilling systems use two different distillation methods:

### **Continuous and batch distillation:**

In the first case, the mixture being treated is continuously added into the boiler during the distillation process itself. This continuous charging of product allows us to maximise productivity and reduce energy consumption. In the second case, a set amount of mixture is loaded into the boiler and the distillation cycle is run up to sludge discharge. In general, batch distillation is preferable when the amount and composition of the mixture is quite variable.

Both methods can be used in modified atmospheres, enabling the distillation of products whose boiling point is so high that the compounds are broken up, as well as products which would be unstable if heated directly. Such substances can be treated by means of **vacuum distillation**.

## IST DISTILLATION SYSTEMS

Our solutions respond to a vast number of requirements: from recycling to solvent separation, to the drying and continuous evaporation of large volumes. IST products and accessories can be integrated into a complete system, supplemented with a service package to satisfy any specific requirement. All our distillation systems are designed with a user-friendly plug&play approach which means that the user can use them immediately. The control panel is always mounted to the machine, so that there is no need to install control units in non-classified areas, which does away with commissioning costs.

