



Dirty Solvent Distillation Process

Industrial processes produce contaminated solvents, which consist of a single solvent or a mixture of solvents combined with pollutants/contaminants. These need to be recovered using the solvent distillation unit.



Industrial process

Generate



Dirty Solvent

The produced contaminated solvent is typically collected and stored in containers like IBC (1.000 liters) or drums (200 liters).



Dirty Solvent



IBC tank



Drum



As soon the tanks are full, they can be positioned near the distillation unit to start the distillation process and recover the contaminated solvent.



IBC tank



Drum



Once the unit is set with the correct working parameters, all that's needed is to connect the suction pipe to the dirty solvent tank to load the boiling vessel.



After pressing the start cycle button, the PLC automatically manages the loading of the boiling vessel and stops once the high-level sensor is activated.



High loading level



Once the boiling vessel is full, the PLC automatically start the heating of the diathermic oil to reach the solvent's boiling temperature.



The contaminated solvent in the boiling vessel begins to boil, separating the solvent vapors from the pollutants. These vapors are then conveyed to the condenser to be condensed back into a liquid state.



Dirty solvent star
boiling



Solvent vapour
generated



Stainless steel
Condenser



The condenser is linked to the vacuum generator, where the distilled and condensed clean solvent is collected.



The vacuum generator continuously discharges the distilled and clean solvent into an accumulation tank using an integrated pneumatic pump.



At the end of the cycle, once all the solvent in the boiling vessel has been recovered, the unit will stop heating and begin cooling the diathermic oil. This regulates the temperature of the residue before it is discharged.



Cooling system of the
oil



Discharge of residual inside
IBC tank



The residue consists of all the contaminants that were previously dissolved in the solvent. As soon the tank is full of this residue, it must be disposed of by a specialized external company.



Discharged
residual



The entire distillation cycle is fully automated, managed by the PLC. From dirty solvent loading, heating the diathermic oil, condensing the solvent vapors, and discharging the distilled solvent, to finally cooling the oil and discharging the residue.



The solvent distillation unit is a high-efficiency system. Its rapid return on investment enables a reduction of up to 90% in the amount of contaminated solvent that needs to be disposed of and repurchased. The efficiency of the process depends on the quantity and type of contaminants in the solvents, as well as the mixture of solvents being treated.

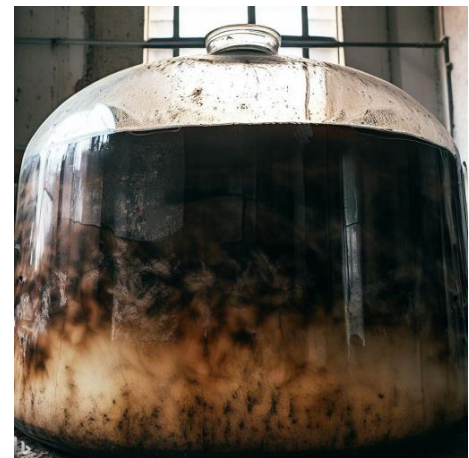
100% Dirty solvent
to be treated



90% distilled solvent
to be reused



10% residual to be
disposed





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