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### PROCESS SYSTEM

**The desulfitation unit includes a decontamination system of the evaporated water.**

**Zero Liquid Discharge.**

Depending on the utility of the products, the desulfitation requirements are very wide. Our equipments satisfy the most demanding requirements.

The basic design consists on a desulfitation unit working with double evaporation effect, under vacuum and working in counter-flow between the feeding and vapor.

The evaporated water released in the desulfitation system is driven to a condenser where it becomes liquid. Part of the SO<sub>2</sub> remains in gas state during the condensation, so we have a washing column to avoid the SO<sub>2</sub> to arrive to the vacuum pump.

The desulfited juice goes across an efficient heat exchanger, that heats the inlet juice and cools the outlet juice.

The evaporated water from the juice contains SO<sub>2</sub>, and it is an important source of environmental pollution. The equipment includes a desulfitation unit that concentrates the SO<sub>2</sub> gas to 98%. This gas is led to a neutralizer equipment, in order to prevent its emission to the atmosphere, obtaining a sulfite concentrated solution that can be used in the chemical industry.

The desulfited and evaporated water goes across a double heat exchanger that decreases the energetic consumption. In this heat exchanger the evaporated

Content of SO<sub>2</sub> in the outlet under 20 ppm.

The same degree Brix in the inlet and in the outlet of the must.

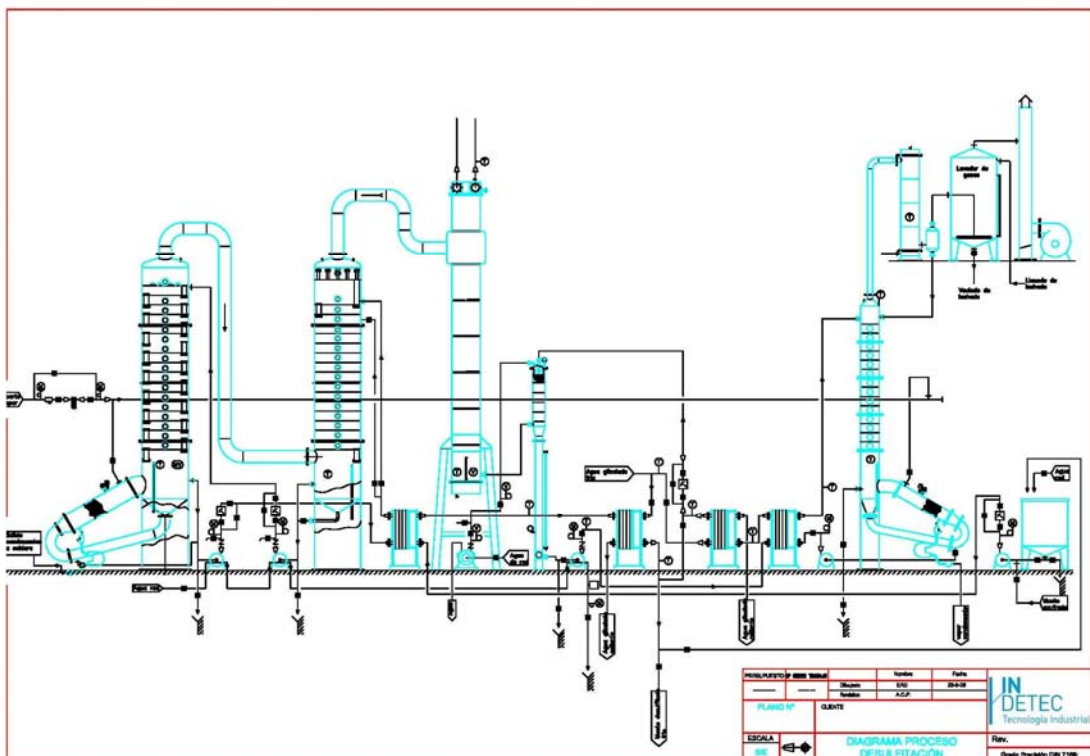
water is cooled and added to the outlet of desulfited juice, in this way the outlet of desulfited juice has the same degree Brix than the inlet of sulfited juice.

The most important parameters of the system are as follows:

- Content of total SO<sub>2</sub> in the outlet juice under 20 ppm.
- Content of total SO<sub>2</sub> in the desulfited evaporated water under 5 ppm.
- Content of SO<sub>2</sub> in the atmospheric emissions under 0,002 gr/m<sup>3</sup>
- Steam consumption of 0,2 kg vapor/kg treated juice.
- Water consumption of 0,15 Kg water/Kg treated juice.

If the desulfited evaporated water isn't added to the outlet juice, it can be used in many parts of the process: replenishment of the cooling tower, replenishment of the vacuum pump, cooling of the mechanical seals of the pumps, in this case no additional water is required.

## PROCESS DIAGRAM



## INSTALLATION EXAMPLES

| Desulfitation equipment (grape must) for BODEGAS LOPEZ MORENAS in Fuente del Maestre (Badajoz) with a treatment capacity of 5.000 Kg/h

| Desulfitation equipment (grape must) for AVELINO VEGAS en San Tiuste (Segovia) with a treatment capacity of 4.000 Kg/h

| Desulfitation and concentration equipment (grape must, fruit juice) for J. GARCIA CARRIÓN in Jumilla (Murcia) with a treatment capacity of 10.000 Kg/h

| Desulfitation and concentration equipment (grape must) for MOSTINSA in Valdepeñas (Ciudad Real) with a treatment capacity of 8.000 Kg/h

| Desulfitation and concentration equipment (grape must) for VIÑAOLIVA in Almendralejo (Badajoz) with a treatment capacity of 8.000 Kg/h

| Desulfitation and concentration equipment (grape must) for SECNA in Benifaio (Valencia) with a treatment capacity of 8.000 Kg/h

| Desulfitation and concentration equipment (grape must) for MOSTOS DEL PACIFICO in Curicó (Chile) with a treatment capacity of 10.000 Kg/h

