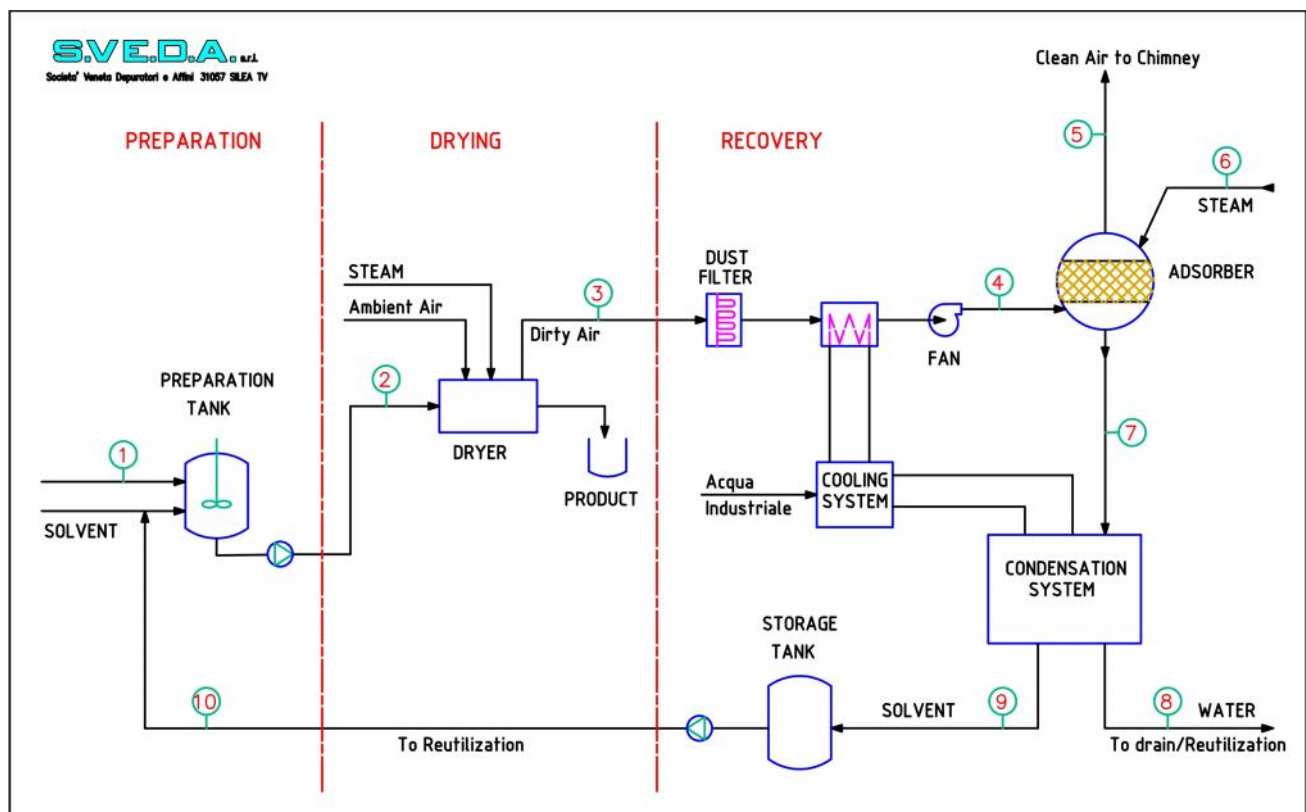


ISODODECANE RECOVERY PLANT

Isododecane is widely used in the cosmetic industry as a solvent for its emollient properties and because it evaporates quickly without leaving residues in the product. For these reasons it is utilized to prepare the mixtures that, once dried, generate the finished product (face powders, eye shadows, etc. ..)

S.V.E.D.A. has developed a system which allows not only to prepare and dry the mixture, but especially to treat the polluted air containing isododecane in order to obtain clean emissions at the chimney, in accordance with the law, and **to recover the solvent for reuse it** in the production process. This results in a **closed loop** process that brings benefits both in environmental terms and in economic terms (saving on solvent purchase).



Typical Scheme

The preparation of the mixture takes place inside special mixing tanks [1]; then the mixture is loaded into the dryer [2] where heating produces the evaporation of the solvent. The finished product is collected outside the dryer while the polluted air containing isododecane is sucked-in through a dedicated fan; this is then filtered by any powders, cooled, and sent [4] to the adsorbers (one or more than one), where the **ACTIVATED CARBON beds** retain the isododecane, while clean air is expelled from the chimney [5].

Once saturated, the activated carbon is regenerated by sending a water vapor stream [6] in the Adsorber; the steam strips isododecane from carbon and drags it away, restoring the adsorbing capacity of the beds.

Through a system of vapor condensation and separation [7], isododecane is recovered with a purity greater than 99% [9] and so it can be **reused as raw material** in the process [10].

The plant is supplied key in hand, complete with electrical panel, electric system, PLC and operator interface terminal, assembled, calibrated and ready for production. Depending on requirements, it can be provided in its entirety (Preparation + Drying + Recovery), or even just in a single section.

ADVANTAGES OF S.VE.D.A. TECHNOLOGY :

- Very high efficiency of the solvent removal (96 ÷ 99.5%)
- Totally GREEN system (Zero Emissions)
- Solvent Recovery with its reuse in the production process = economic saving + no environmental impact in the manufacturing process
- Low power consumption and reduced system management costs
- Modular plant design which allows successive enlargements according to the flow to be treated

Technical features of “DRYING” section:

- | | |
|------------------------------------|--|
| - Type of solvent to be evaporated | Isododecane (or other similar solvents) |
| - Operating temperature | 80÷100 °C |
| - Reference standard | UNI EN 1539, Direttiva Macchine 2006/42/CE |
| - Electricity consumption | negligible |
| - Steam consumption | about 20÷25 kg/h |

Technical features of “RECOVERY” section:

- | | |
|---------------------------------|--|
| - Air flowrate to be treated | from 1.000 to 50.000 Nmc/h |
| - Type of solvent to be removed | Isododecane (or other similar solvents) |
| - Electricity consumption | about 10 kW (for every 10.000 Nmc/h of treated air) |
| - Industrial Water consumption | about 0,5 mc/h (for every 10.000 Nmc/h of treated air) |
| - Steam consumption | about 100 kg/h (for every 10.000 Nmc/h of treated air) |

Services offered by S.VE.D.A. :

- Training sessions for staff for the proper use of the system
- Remote assistance and remote monitoring system
- Continuous monitoring of stack emissions
- Study and optimization of existing suction lines



1500 mc/h plant



5000 mc/h plant