



Glycerine Plants

Andreotti Impianti is an Italian Company active in the design, manufacture, erection and start-up of oilseeds and edible oils processing plants. Born in 1955 on the initiative of Mr. Argentino Andreotti, ANDREOTTI IMPIANTI S.p.A. has through the years remained a totally private family Company, consolidating its position as Italian Leader, reaching up a notable reputation also on the international markets, where its growth factor has been on a continuous remarkable uptrend over the last few years.

This year we'll celebrate our 60th anniversary. Many things have been changed over these first 60 years of activity, apart from considering each of our Client as our greatest asset.

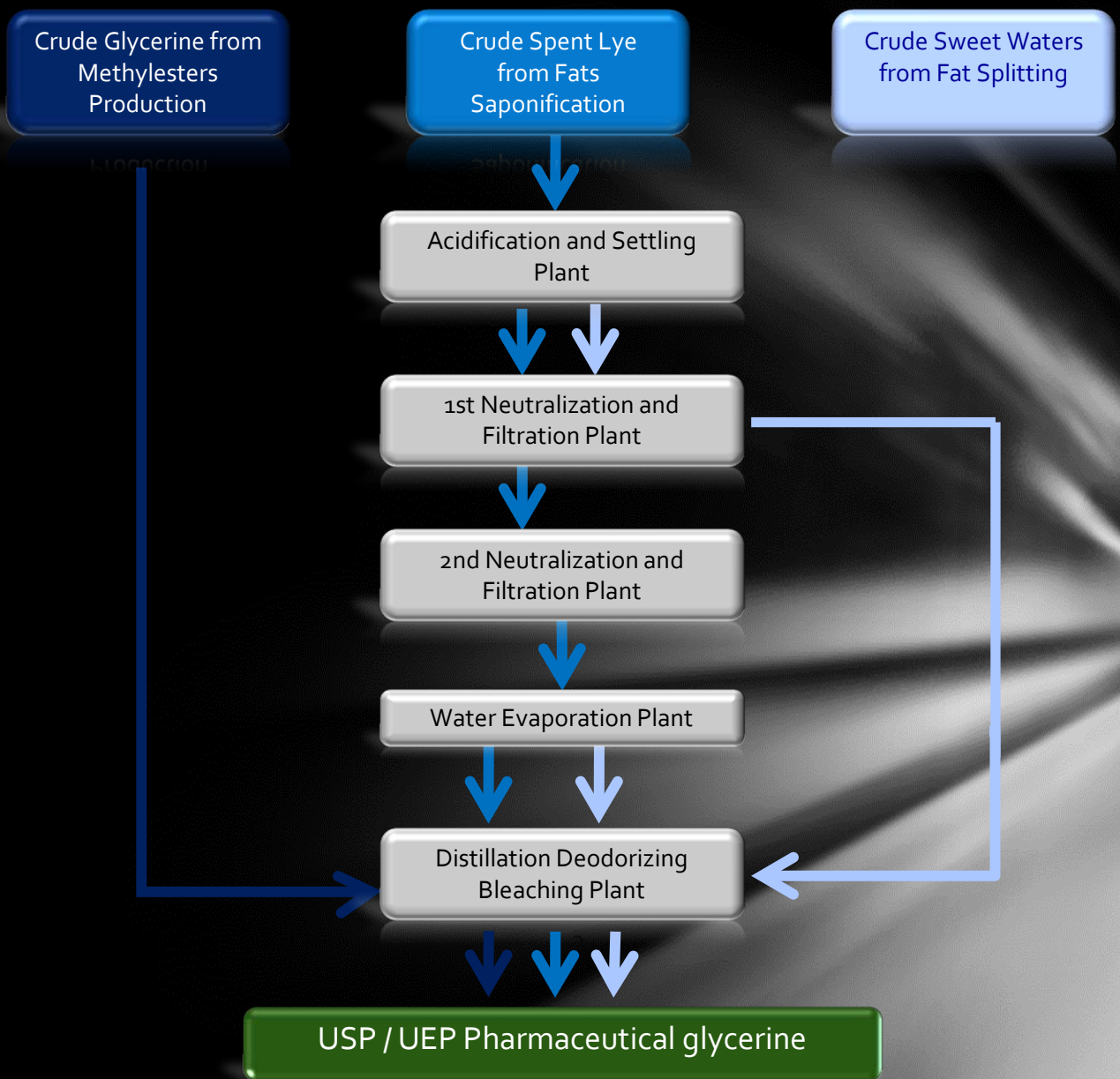


ANDREOTTI IMPIANTI, WORLDWIDE SUCCESSFUL
FOR OVER 60 YEARS, NOW



Technical & pharmaceutical grade glycerine can be produced starting from a wide range of natural feedstocks, mainly by-products of industrial processes for the production of soap (spentlyes), fatty acids (sweetwaters) or methylesters (biodiesel glycerine).

Andreotti Impianti Spa developed a **proprietary technology** for **pharmaceutical glycerine production**, with plants configurations best suited for each specific raw material.



Glycerine production plants for all natural sources



REFINED GLYCERINE PRODUCTION STEPS

Typically, refined glycerine to EUP/USP XXIII standards is obtained through the following technological steps:

- Sweetwaters or spent lyes purification
- Sweetwaters or spentlyes concentration to respectively 88 or 80% glycerol content.
- Crude glycerine distillation, bleaching and deodorizing.

Several purification steps can be combined in order to maximize process yields using lowest quantity of chemicals.

Special care is devoted to avoid ambient pollution, by providing those units with high efficiency air scrubbing system, and reducing to a minimum liquid and solid by-products sent to disposal or to treatment

In case of crude glycerine deriving from fat splitting or saponification, one unit of water evaporation, typically double effect with energy saving system, is provided to concentrate the distillation unit feed up to residual water content of 5–15%.

Single step distillation units have been developed by us over the years by a continuous updating of proprietary technology. Today ANDREOTTI IMPIANTI offers plants that combine best specific utilities consumptions and maximum flexibility on process parameters adjustment referred to variation of feed composition.

As disposal of various by-products and air / water pollution is the biggest problem to be solved today in industrial plants, ANDREOTTI IMPIANTI has included in its plants special pitches stripping units, that help minimize the environmental impact.

REFINED GLYCERINE PRODUCTION STEPS

It is to be noted that crude glycerine coming from our transesterification plants for biodiesel production (with average glycerol content of 80 – 85%) can be sent directly to distillation making away with any prior dilution, purification and concentration steps.

PLANT TYPE

Consumption per Ton of feedstock	Sweet Waters Purification	Spent Lyes purification	Evaporation	Glycerine Distillation
Steam (kg)	70	80	450	≤ 1000
Electric Power (kwh)	3	5	15	30
Cooling water (m ³ in circulation)			25	60

TYPICAL CONSUMPTION VALUES

- Multi-feedstock plant, fully continuous
- Ease of operation thanks to completely automated control
- Low consumption due to high recovery rate
- Highest environment compatibility thanks to extremely reduced effluent emissions
- Low installation and operational costs
- Liquid-liquid glycerine distillation
- Single-column glycerine distillation
- Peculiar continuous residues stripping system, with possibility to obtain liquid or dry residues
- Continuous bleaching / purification by activated carbon
- Extremely low esters content in refined glycerine
- Increased refined glycerine yield thanks to the use of self generated low pressure steam

ANDREOTTI IMPIANTI'S GLYCERINE TECHNOLOGY HIGHLIGHTS



Automation and Supervision system

Typical screenshot of supervising control system thanks to which it's assured an easy and automatic system for plant control of all its productive phases. All actions are easy to be carried out and the ergonomics of the graphic pages, helps the operators understand how to proceed with the operation sequence.



Made In Italy

ANDREOTTI IMPIANTI S.p.A. manufactures the core pieces of equipment of all designed process plant in highly qualified workshops in Italy for assuring an unexceeded construction quality control.



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