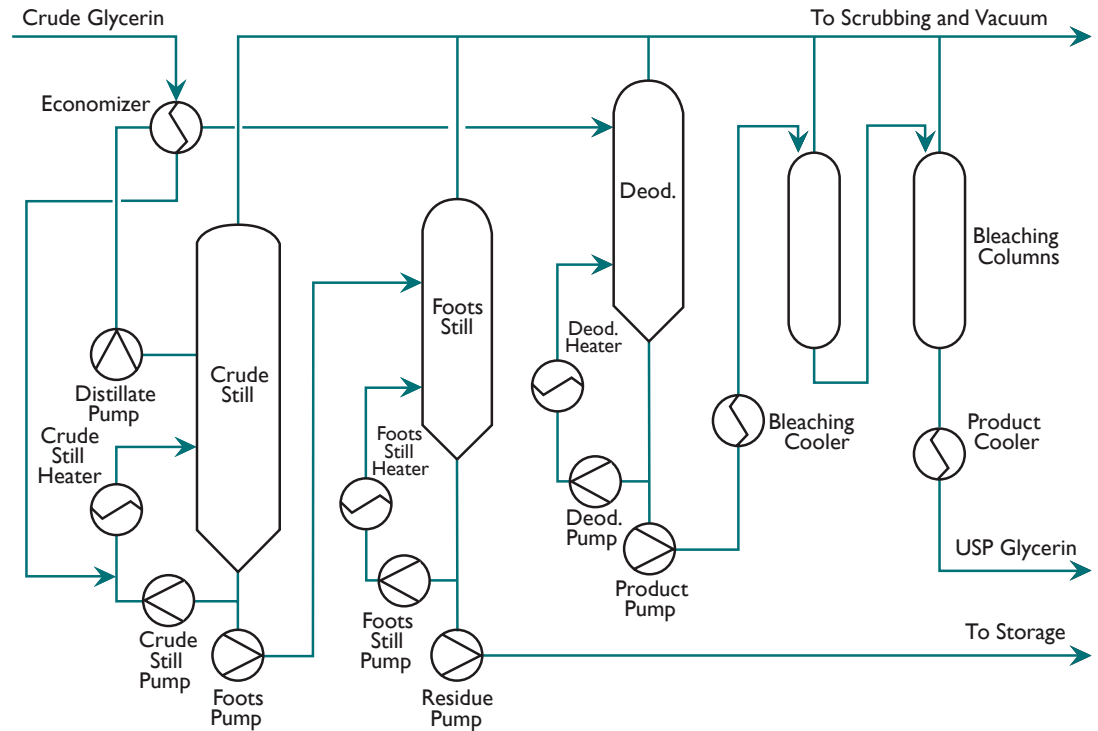




CPM Crown's Glycerin Refining

CPM Crown's Glycerin Refining Flow Diagram



ABOUT CROWN'S GLYCERIN REFINING SYSTEM

Suitably treated crude glycerin is heated before entering the crude still. If needed, a small amount of caustic can be added to help neutralize the feed. The recirculated liquor in the lower portion is partially vaporized with the aid of vacuum and sparging steam in the flashing chamber. The vapor passes through the bubble cap rectifying tray and then enters the condensing section. In this area, glycerin vapors are condensed in a layer of packing wetted by recirculated cooled glycerin. The condensed glycerin is collected in a sump and is removed while the vapors passing through the packing flow to the vapor scrubber where they are condensed and sent to storage as substandard glycerin. Any non-condensable vapors are discharged from the process through the vacuum system. The substandard product is typically reprocessed separately once a month for 2-3 days in the same processing equipment.

A unique feature in the crude still design is the vapor scrubber, which is designed to eliminate the possibility of the substandard glycerin from returning to the still where it could potentially mix with the CP/USP product. The glycerin-laden residue from the still is continually discharged to the footh still.

In the footh still, the feed stream is vaporized under vacuum with stripping steam. The vapors pass through a demister pad to the footh still condenser where the bulk of the glycerin is recovered and recycled to the crude still. Any light ends driven off in the footh still are recovered in the vapor scrubber. The material remaining in the foot still is recirculated, heated and concentrated to flash volatile material with the remaining residue and discharged at a controlled rate from the bottom of the footh still.

Features and advantages

The deodorizer acts as a stripper to remove trace odoriferous materials and residual moisture from the distilled glycerin. In the deodorizer, glycerin is recirculated and heated, driving off any lower boiling compounds. Glycerin from the crude still is delivered to the top section of the deodorizer where it condenses glycerin vapors passing upward through the packed section. The vaporized light ends pass through the packed section and then through the demister pad, where any entrained product is removed, and continue on to the vapor scrubber. In the scrubber, the light fractions are recovered with the substandard product. Any non-condensables continue on to the vacuum system.



The temperature is reduced and the deodorized glycerin is then bleached in the bleaching columns with activated carbon to remove trace odoriferous materials and color bodies. Normally the glycerin passes through two of the columns in series with the third column in a standby mode.

The glycerin then passes through a bag polishing filter to remove any fine particulates and is cooled before storage.

For ongoing innovation, Crown's technology and team are second to none.

CPM Crown's Global Innovation Center is a facility unlike any other. A fully functional 15,000 sq. ft. pilot plant, analytical lab and training facility, the GIC offers piloting capabilities from benchtop lab scale to multiple tons per day of continuous production, simulating real life and enabling customers to develop and test new product concepts in a confidential, controlled environment. The GIC has capabilities in preparation, extraction, desolventizing, drying, deodorizing, refining, fat splitting, renewable diesel and specialty extraction (including Hemp CBD Oil). Crown's technical expertise, R&D and full lifecycle process provide guidance and support at every step from feasibility, trials and custom processing to commercial-sized operations and aftermarket.



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