

# Standard Oil Company (Indiana)

## INFORMATION DIVISION TRANSLATION T47-18

API-TOM Reel 151, Frames 978-980

### Description of the Present Production Method of Palatinol AH

- 1) Raw materials: phthalic anhydride and ethylhexanol (octanol)
- 2) Final product: Palatinol AH
- 3) Source of supply: both starting materials are prepared in the works, and bought from the factory concerned
- 4) Production capacity: about 100-150 tonnes/mo.
- 5) Description of operation

Ethylhexanol is delivered from the producing operation in tank cars and held in storage tank (1)\*. From the tank, 11,200 liters = 9300 kg. ethylhexanol is pumped by pump (2) to the kettle (3). The measurement of quantity is done by meter (3a). Then 3200 kg. phthalic anhydride is poured into the kettle with stirring.

The two components are heated up with stirring. The heating is done by a coil which is fed with 15 atm. steam (220 psia). The temperature is raised first to 110°C and then again to 150°. A mixture of water and ethylhexanol distils over. The vapors are condensed in the two coolers (16). The condensate runs through the separating vessel (16a) and here separates into water and ethylhexanol. The ethylhexanol runs back to the kettle. The water is collected in the receiver (17) and measured. The amount of water comes to about 350-400 l.

When no more water distils over, then the separator is shut off and ethylhexanol distilled off. After condensation, it runs to the measuring vessel (24) and from here is pumped by pump (25) to the tank (11).

The kettle temperature during distillation is slowly raised further up to about 185°C. Simultaneously the apparatus is evacuated to a final vacuum of about 70 mm. Hg in the kettle.

When no more liquid components go over, the resulting crude ester is cooled to about 80°C. This cooling is accomplished by cooling water, which is conducted through the jacket of the kettle. After cooling, the ester is washed with soda lye. For this purpose, about 1500 liters of condensate water is run in from measuring vessel (7), and the 120 kg. of about 40% soda lye is run in with stirring from measuring vessel (6). The stirrer is shut down after one-half hour's stirring. Two layers form, from which, after separation, the lower aqueous layer is drawn out.

\* The numbers refer to diagram S-5995-2

It is after-washed with 1000 liters of water, and after shutting off the stirrer, the water likewise drawn out. Then it is again heated up until the kettle temperature is about 100°C. It is then evacuated and heated further up to 185°C.

The Palatinol AH so freed from all volatile components is cooled down to about 80°C, and pumped by pump (19) to the kettle (14) in two portions. Here 12 kg. carboraffin (Trans: probably an activated carbon) is mixed into each portion and stirred about 2 hours. The product is filtered through filterpress 18 to tank 20. About 7200 kg. Palatinol AH is obtained. The product can be filled out from the tank to tank cars or drums.

6) Energy requirements. The energy requirements cannot be stated, since corresponding bases are not forthcoming.

Requested by Information Division  
Translated Feb. 24-25, 1947 - CCMiller

"Betriebsbeschreibung der Palatinol AH -  
Fabrikation" (jetzige Fahrweise)  
Author: Klaproth  
Schkopau, Nov. 9, 1945  
Z. -Abt. Dr. Klp.  
2 pages, no illust.

(Continuation of 747-17)

Schkopau, Nov. 13, 1945

Supplement to  
Description of Operations of Manufacture of Palatinol AH of Nov. 9, 1945.

Concerns: Answer to questions which were asked of the undersigned by the Russian Commission.

- 1) Diagram and description of operations. Compare description of Nov. 9, 1945.
- 2) Maximum capacity: about 100-150 tonnes/month of Palatinol AH.
- 3) Designation of apparatus will be supplied by the Technical Division.
- 4) Palatinol AH is used as softener for Igelite PCU Mark G (Trans: balance of about 11 words illegible).

/s/ Dr. Klaproth