

CHLORINATED METHANES
GENERAL RESOURCE INFORMATION

Department: CNP

Job Title: C-1540 General Resource Information

Scope: To provide the operator with the necessary information needed for the current IPT program

Liquid feed is pumped from D-1525. The feed consist of chlorine chloroform, and carbon tetrachloride. The purpose of C-1540 is to sepearate chlorine and chloroform from the carbon tet.

The feed enters the column at tray 33 and flows downward thru the column. As the level increases in the bottom of the column the steam valve will activate and start driving the lighter components (chlorine and chloroform) toward the top of the column. The overhead vapor exits the column and enters the overhead exchanger EC-1540.

EC-1540 are fin fan coolers which are used to control the pressure of the column by condensing the gases that are coming out of the overhead of C-1540. As the pressure on the column increases, the pressure transmitter located on the overhead line sends a signal to the MOD V controller. The MOD V in turn sends a signal to the controller on the variable speed motors to increase thier speed. This will allow for more condensing of the gas entering EC-1540, thus lowering the column pressure.

The liquid that is condensed in EC-1540 is accumulated in D-1541. D-1541 is also called the reflux drum. Liquid from the reflux drum is pump back to the column as reflux via P-1541 A/B. What is not used as reflux is then level controlled as feed to C-1550.

Under normal operating conditions, C-1540 bottoms which contains PPM M3 & percent M4, are level controlled (AO 332) to T-809 via P-1540 A/B and E-1540A/B. In the event the bottom of C-1540 is out of spec it can be routed back to D-1525 via (DO 304/314). Also, recirulation will be maintain on P-1540 A/B C-1540 bottoms pumps at all times.

The column uses 235# steam on the reboilers (RE-1540 A&B) to control the level or the temp. of the column depending on the step the MOD is in . it will open or close to maintain the temp setpoint/level that is inputted into the controller.

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To help determine how much load the column can handle it is equipped with a differential pressure transmitter which will indicate a differential pressure across the column which will help determine when the column has reach maximum capacity and also if flooding condition exist. The normal differential pressure is approx. 14 psig.

The column is equipped with several safety devices such as safety valve which are set at 150 psig and indep high level switches that are located on C-1540 bottoms and on D-1541. Transmitters are alarmed on MOD V with various set-points.

The normal concentrations of the bottoms product is from 10-90ppm M2. and 100ppm chloroform in the overheads normally less than 50 ppm.

DESIGN CRITERIA

Design temp	= -20/650 F
Design press	= 150 psig
Design full vacuum	= yes
Operating pres.(top/btm)	= 20/35
Operating temp (in/out)	= 168/253
Hydrostatic test	= 1.5 mawp
#trays	= 115
Tray matl. of Constr.	= 410SS
Height	= 175 ft
Diameter (in)	= 108 inches

DG 6/25/91

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