Appendix 'A'

METHYL ESTER & GLYCERINE MANUFACTURING PROCESS EQUIPMENT

A/C 22270

THE PROCTER & GAMBLE MANUFACTURING CO.

METHYL ESTER & GLYCERINE MANUFACTURING PROCESS

A/C NO.	EQUIPMENT DESCRIPTION
22270	METHYL ESTER AND GLYCERINE PROCESSING CONSISTING OF THE FOLLOWING:

1. SODIUM METHOXIDE CATALYST MAKING PROCESS
   - A. METHANOL ANALYSIS TANK
   - B. SODIUM METHOXIDE INTERCHANGE
   - C. SODIUM METHOXIDE ANALYSIS TANKS
   - D. SODIUM METHOXIDE PUMP
   - E. SODIUM METHOXIDE COLUMN
   - F. SODIUM METHOXIDE REBOILER
   - G. DRY METHANOL FINAL CONDENSER
2. ESTER MAKING, FLASHING, WASHING AND DRYING PROCESS
   - A. ESTERFICATION 1ST, 2ND AND 3RD SETTLER MIXERS
   - B. ESTERFICATION REACTOR
   - C. ESTERFICATION 1ST, 2ND AND 3RD SETTLERS
   - D. ESTER PUMP
   - E. ESTER FLASH INTERCHANGER
   - F. ESTER FLASH PREHEATER
   - G. ESTER FLASH TANK
   - H. ESTER FLASH COOLER
   - I. ESTER FLASH PUMP
   - J. ESTER WASH WATER COOLER
   - K. FOUR (4) ESTER WASH COLUMNS
   - L. ESTER DRYER
   - M. ESTER DRYER PUMP
   - N. ESTER DRYER CONDENSER
   - O. ESTER DRYER VACUUM SYSTEM
   - P. ESTER DRYER METHANOL CONDENSER
   - Q. ESTER DRYER CONDENSATE PUMP
3. LIGHT CUT ESTER FRACTIONATION PROCESS
   - A. LIGHT CUT ESTER PREHEATER
   - B. LIGHT CUT ESTER STILL
   - C. LIGHT CUT ESTER CONDENSER
   - D. LIGHT CUT ESTER VENT CONDENSER
   - E. SINGLE STAGE EJECTOR
   - F. LIGHT CUT ESTER PUMPS
   - G. LIGHT CUT ESTER PRODUCT COOLER
   - H. LIGHT CUT ESTER REBOILER
   - I. LIGHT CUT ESTER POT PUMPS
4. INTERMEDIATE ESTER FRACTIONATION PROCESS
   - A. INTERMEDIATE ESTER STILL
   - B. INTERMEDIATE ESTER CONDENSER
   - C. INTERMEDIATE ESTER VENT CONDENSER
   - D. HEAVY CUT ESTER DISTILLATE RECEIVER
   - E. INTERMEDIATE ESTER DISTILLATE PUMP
   - F. INTERMEDIATE ESTER COOLER
   - G. INTERMEDIATE ESTER REBOILER
   - H. INTERMEDIATE ESTER POT PUMPS
   - I. THREE (3) ESTER BOTTOMS TANKS
   - J. ESTER BOTTOMS TO REFINERY TANKS

METHYL ESTER & GLYCERINE MANUFACTURING PROCESS

A/C NO.	EQUIPMENT DESCRIPTION

K. TWO (2) ESTER FEED TO REFINERY TANKS
L. ESTER SCALE TANK
M. TWO (2) ESTER SWING TANKS
N. WCE BOTTOMS TANKS

5. ESTER FRACTIONATION PROCESS
   A. ESTER STILL
   B. ESTER CONDENSER
   C. ESTER VENT CONDENSER
   D. ESTER DISTILLATE RECEIVER
   E. ESTER DISTILLATE PUMP
   F. ESTER COOLER
   G. ESTER REBOILER
   H. ESTER POT PUMPS
   I. FIVE (5) ESTERS TO SCALES TANKS
   J. THREE (3) ESTERS TO HFA
   K. ESTER TO HFA TANK
   L. TWO (2) ESTERS LCFA TANKS
   M. FOUR (4) ESTERS TO LCFA/SCALES TANKS
6. METHANOL CONCENTRATOR PROCESS
   A. METHANOL CONCENTRATOR FEE/BOTTOMS INTERCHANGER
   B. METHANOL CONCENTRATOR
   C. METHANOL CONCENTRATOR BOTTOM PUMP
   D. METHANOL CONCENTRATOR REBOILER
7. METHANOL RECOVERY/DRYING PROCESS
   A. ESTER VENT SEAL TANK
   B. METHANOL DRYER FEED TANK
   C. METHANOL DRYER FEED PUMP
   D. METHANOL DRYER INTERCHANGE
   E. METHANOL DRYER PUMP
   F. METHANOL DRYER
   G. WEST VENT CONDENSER
   H. WEST VENT FINAL CONDENSER
   I. METHANOL STORAGE TANK
   J. METHANOL CONDENSER
   K. METHANOL DISTILLATE TANK
   L. METHANOL DISTILLATE PUMP
8. GLYCERINE COLUMN PROCESS
   A. DRY GLYCERINE TANK
   B. DRY GLYCERINE FEED PUMP
   C. GLYCERINE COLUMN
   D. GLYCERINE COLUMN PUMP
   E. GLYCERINE COLUMN REBOILER
   F. GLYCERINE INTERCHANGER
   G. GLYCERINE BOTTOMS COOLER
9. GLYCERINE ACIDULATION AND NEUTRALIZATION PROCESS
   A. GLYCERINE ACIDULATION MIXER
   B. GLYCERINE ACIDULATION REACTOR/SETTLER

METHYL ESTER & GLYCERINE MANUFACTURING PROCESS

A/C NO.	EQUIPMENT DESCRIPTION
	C. ACIDULATED GLYCERINE PUMP
	D. DILUTE CAUSTIC PUMP
	E. GLYCERINE NEUTRALIZATION MIXER
	F. ACIDULATED SOAPSTONE SURGE TANK
	G. ACIDULATED SOAPSTONE SURGE PUMP
10.	GLYCERINE CONCENTRATION FEED TANK
	A. GLYCERINE EVAPORATOR FEED TANK
	B. GLYCERINE EVAPORATOR
	C. GLYCERINE EVAPORATOR REBOILER
	D. GLYCERINE EVAPORATOR PUMP
	E. GLYCERINE PRODUCT PUMP
	F. GLYCERINE EVAPORATOR CONDENSER
	G. GLYCERINE EVAPORATOR CONDENSER PUMP
	H. 3-STAGE EJECTOR
	I. GLYCERINE TO SHIPMENT TANK