Table 5.4
GHG SAMPLE PAGE

LOCATION : US ETHYLENE/VA COPOLYMER

ETHYLENE/VINYL ACETATE COPOLYMER USING A TUBULAR REACTOR

DIRECT EMISSIONS – PROCESS

	MT/ MT	MT CO_2/ MT
Carbon Dioxide	0.061	0.061

DIRECT EMISSIONS – UTILITIES

	GJ/ MT	MT CO_2/ MT
Fuel	-0.100	-0.006
TOTAL DIRECT EMISSIONS		**0.055**

INDIRECT EMISSIONS

	MWH/ MT	MT CO_2/ MT
Electricity	1.103	0.644
TOTAL EMISSIONS		**0.699**

PROCESS DESCRIPTION

The continuous process described below is based on patents assigned to BASF.

Fresh and recycled ethylene along with vinyl acetate are compressed, cooled, and fed to a jacketed tubular preheater and reactor together with oxygen as the initiator. Reactor pressure is 2350 kg/cm2. Part of the feed is preheated to 180°C. The remaining cool feed is injected at various points along the reactor tube to control temperature and reaction rate. Some reaction heat is removed by the cooling jacket to limit peak temperatures to 302°C. Conversion is 25%, based on ethylene and vinyl acetate. The reactor effluent is let down in 2 stages to 280 kg/cm2 and 0.5 kg/cm2. Unreacted ethylene and vinyl acetate are separated for recycle. The polymer melt is extruded and pelletized.

Copolymer composition is 87.2% ethylene and 12.8% vinyl acetate, suitable for film. Product yields on ethylene and vinyl acetate are 98%.

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REFERENCE: PEP REPORT 155A SEC 7 (WSF)