
Scheme-5 Reactor-1

Part-1, Case-1

$t_a = 60 \text{ sec}$, $t_m = 600 \text{ sec}$
 $k_1 = 100$, $k_2 = 10$

$NB_t/NA_t = 1.66371$

Exponent $a = 1.5$
Exponent $b = 0.5$
Exponent $c = 0.5$
Exponent $d = 1.5$

$WA = 200$
 $WB = 83.1856$
 $NB_t = 4.43657$
 $V_t = 2.14159$
 $V_{at} = 1.04159$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.5$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 283.186 kg
Total output = 283.187 kg

Chemical Balance Error = 0.00104603 kg (% 3.6938e-06)

Solver: Explicit Runge-Kutta (4,5) Variable step (Dormand-Prince Pair)
Error tolerance: 0.1%

Final Concentrations with Step Size limited to 0.01

$NA \text{ (final)} = 0.0266659$
 $NB \text{ (final)} = 1.33943e-06$
 $NR \text{ (final)} = 0.843477$
 $NS \text{ (final)} = 1.79652$

Final Concentrations with Step Size limited to 0.1

$NA \text{ (final)} = 0.0266633$
 $NB \text{ (final)} = 2.06829e-06$
 $NR \text{ (final)} = 0.843434$
 $NS \text{ (final)} = 1.79657$



