
Scheme-4 Reactor-1

Part-2, Case-4

$t_a = 900 \text{ sec}$, $t_m = 1200 \text{ sec}$
 $k_1 = 0.1$, $k_2 = 0.01$

$NB_t/NA_t = 1.64629$

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

$WA = 200$
 $WB = 82.3145$
 $NB_t = 4.39011$
 $V_t = 2.14116$
 $V_{at} = 0.541157$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.25$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 282.314 kg
Total output = 282.316 kg

Chemical Balance Error = 0.00175844 kg (% 6.22867e-06)

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

Final Concentrations with Step Size limited to 0.001

$NA \text{ (final)} = 0.0266666$
 $NB \text{ (final)} = 1.4451e-12$
 $NR \text{ (final)} = 0.889893$
 $NS \text{ (final)} = 1.75011$

Final Concentrations with Step Size limited to 0.01

$NA \text{ (final)} = 0.0266655$
 $NB \text{ (final)} = 1.44524e-10$
 $NR \text{ (final)} = 0.889892$
 $NS \text{ (final)} = 1.75011$



