
Scheme-2 Reactor-1

Part-1, Case-2

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

$NB_t/NA_t = 0.995654$

Exponent $a = 1$
Exponent $b = 1$
Exponent $c = 1.5$
Exponent $d = 0.5$

$WA = 200$
 $WB = 49.7827$
 $NB_t = 2.65508$
 $V_t = 2.12489$
 $V_{at} = 1.02489$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.5$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 249.783 kg
Total output = 249.783 kg

Chemical Balance Error = -0.000173596 kg (% -6.9499e-07)

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

Final Concentrations with Step Size limited to 0.01

$NA \text{ (final)} = 0.0266875$
 $NB \text{ (final)} = 1.97626e-322$
 $NR \text{ (final)} = 2.62489$
 $NS \text{ (final)} = 0.0150872$

Final Concentrations with Step Size limited to 0.1

$NA \text{ (final)} = 0.0266765$
 $NB \text{ (final)} = 1.87745e-322$
 $NR \text{ (final)} = 2.6249$
 $NS \text{ (final)} = 0.0150903$



