
Scheme-6 Reactor-1

Part-1, Case-1

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

$NB_t/NA_t = 1.12124$

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

$WA = 200$
 $WB = 56.0621$
 $NB_t = 2.98998$
 $V_t = 2.12803$
 $V_{at} = 1.02803$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.5$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 256.062 kg
Total output = 256.062 kg

Chemical Balance Error = -0.000176656 kg (% -6.89894e-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

$NA \text{ (final)} = 0.026755$
 $NB \text{ (final)} = 5.05691e-08$
 $NR \text{ (final)} = 2.28987$
 $NS \text{ (final)} = 0.35004$

Final Concentrations with Step Size limited to 0.1

$NA \text{ (final)} = 0.0266675$
 $NB \text{ (final)} = 5.06564e-08$
 $NR \text{ (final)} = 2.28987$
 $NS \text{ (final)} = 0.350131$



