
Scheme-9 Reactor-1

Part-2, Case-4

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

$NB_t/NA_t = 1.25406$

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

$WA = 200$
 $WB = 62.7032$
 $NB_t = 3.34417$
 $V_t = 2.13135$
 $V_{at} = 0.531352$
Tot.Solv. = 2
 $SolA/(SolR+SolA) = 0.25$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 262.703 kg
Total output = 262.704 kg

Chemical Balance Error = 0.000710546 kg (% 2.70475e-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

$NA \text{ (final)} = 0.0266914$
 $NB \text{ (final)} = 3.93538e-15$
 $NR \text{ (final)} = 1.93578$
 $NS \text{ (final)} = 0.704196$

Final Concentrations with Step Size limited to 0.01

$NA \text{ (final)} = 0.0266912$
 $NB \text{ (final)} = 3.93586e-13$
 $NR \text{ (final)} = 1.93578$
 $NS \text{ (final)} = 0.704199$



