
Scheme-2 Reactor-1

Part-2, Case-1

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

$NB_t/NA_t = 1.05948$

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

$WA = 200$
 $WB = 52.9738$
 $NB_t = 2.82527$
 $V_t = 2.12649$
 $V_{at} = 1.02649$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.5$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 252.974 kg
Total output = 252.974 kg

Chemical Balance Error = 0.000234491 kg (% 9.26939e-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

$NA \text{ (final)} = 0.0266786$
 $NB \text{ (final)} = 0.00444165$
 $NR \text{ (final)} = 2.45914$
 $NS \text{ (final)} = 0.180843$

Final Concentrations with Step Size limited to 0.1

$NA \text{ (final)} = 0.0266617$
 $NB \text{ (final)} = 0.00444543$
 $NR \text{ (final)} = 2.45913$
 $NS \text{ (final)} = 0.180876$



