
Scheme-8 Reactor-1

Part-2, Case-4

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

$NB_t/NA_t = 1.35892$

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

$WA = 200$
 $WB = 67.9459$
 $NB_t = 3.62378$
 $V_t = 2.13397$
 $V_{at} = 0.533973$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.25$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 267.946 kg
Total output = 267.947 kg

Chemical Balance Error = 0.000990661 kg (% 3.69724e-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

$NA \text{ (final)} = 0.0266708$
 $NB \text{ (final)} = 8.24123e-06$
 $NR \text{ (final)} = 1.65622$
 $NS \text{ (final)} = 0.98378$

Final Concentrations with Step Size limited to 0.01

$NA \text{ (final)} = 0.0266698$
 $NB \text{ (final)} = 8.24143e-06$
 $NR \text{ (final)} = 1.65621$
 $NS \text{ (final)} = 0.983782$



