
Scheme-2 Reactor-1

Part-1, Case-1

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

$NB_t/NA_t = 1.00539$

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

$WA = 200$
 $WB = 50.2693$
 $NB_t = 2.68103$
 $V_t = 2.12513$
 $V_{at} = 1.02513$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.5$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 250.269 kg
Total output = 250.27 kg

Chemical Balance Error = 0.000715123 kg (% 2.85741e-06)

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

Final Concentrations with Step Size limited to 0.01

$NA \text{ (final)} = 0.0271131$
 $NB \text{ (final)} = 1.97626e-322$
 $NR \text{ (final)} = 2.59804$
 $NS \text{ (final)} = 0.0415105$

Final Concentrations with Step Size limited to 0.1

$NA \text{ (final)} = 0.0266714$
 $NB \text{ (final)} = 1.92686e-322$
 $NR \text{ (final)} = 2.59819$
 $NS \text{ (final)} = 0.0418017$



