
Scheme-7 Reactor-1

Part-2, Case-2

$t_a = 450 \text{ sec}$, $t_m = 1200 \text{ sec}$
 $k_1 = 0.1$, $k_2 = 0.01$

$NB_t/NA_t = 1.03718$

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

$WA = 200$
 $WB = 51.8591$
 $NB_t = 2.76582$
 $V_t = 2.12593$
 $V_{at} = 1.02593$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.5$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 251.859 kg
Total output = 251.859 kg

Chemical Balance Error = 0.000230362 kg (% 9.14646e-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

$NA \text{ (final)} = 0.0266367$
 $NB \text{ (final)} = 0.000473081$
 $NR \text{ (final)} = 2.51471$
 $NS \text{ (final)} = 0.125323$

Final Concentrations with Step Size limited to 0.1

$NA \text{ (final)} = 0.0266736$
 $NB \text{ (final)} = 0.000464129$
 $NR \text{ (final)} = 2.51478$
 $NS \text{ (final)} = 0.125211$



