
Scheme-6 Reactor-1

Part-2, Case-2

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

$NB_t/NA_t = 1.12401$

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

$WA = 200$
 $WB = 56.2007$
 $NB_t = 2.99737$
 $V_t = 2.1281$
 $V_{at} = 1.0281$
 $Tot.Solv. = 2$
 $SolA/(SolR+SolA) = 0.5$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 256.201 kg
Total output = 256.201 kg

Chemical Balance Error = 0.000464004 kg (% 1.8111e-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

$NA \text{ (final)} = 0.0266124$
 $NB \text{ (final)} = 0.00714905$
 $NR \text{ (final)} = 2.28988$
 $NS \text{ (final)} = 0.350172$

Final Concentrations with Step Size limited to 0.1

$NA \text{ (final)} = 0.0266675$
 $NB \text{ (final)} = 0.00714392$
 $NR \text{ (final)} = 2.28988$
 $NS \text{ (final)} = 0.350121$



