
Scheme-5 Reactor-1

Part-2, Case-2

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

$NB_t/NA_t = 1.66354$

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

$WA = 200$
 $WB = 83.177$
 $NB_t = 4.4361$
 $V_t = 2.14159$
 $V_{at} = 1.04159$
Tot.Solv. = 2
 $SolA/(SolR+SolA) = 0.5$

$NA_0 = 2.66667$
 $NB_0 = 0$

Total input = 283.177 kg
Total output = 283.179 kg

Chemical Balance Error = 0.00196461 kg (% 6.93773e-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

$NA \text{ (final)} = 0.0266869$
 $NB \text{ (final)} = 1.37426e-10$
 $NR \text{ (final)} = 0.843847$
 $NS \text{ (final)} = 1.79613$

Final Concentrations with Step Size limited to 0.1

$NA \text{ (final)} = 0.0266677$
 $NB \text{ (final)} = 8.23786e-09$
 $NR \text{ (final)} = 0.843525$
 $NS \text{ (final)} = 1.79647$



