```matlab
function [dydt] = F1_cstr(t,y,p)


    cA = y(1);
    cR = y(2);
    cS = y(3);


    r1 = cA * p.k1;
    r2 = cR * p.k2;
    r3 = cA * p.k3;


    % Annahme Fin = Fout
    dcAdt = p.F1_in/p.V * (p.cA_in - cA) - r1 + r2 - r3;
    dcRdt = -p.F1_in/p.V * cR + r1 - r2;
    dcSdt = -p.F1_in/p.V * cS + 2 * r3;


    %disp(['Zeit: ', num2str(t), ' cA: ', num2str(cA)]);


    dydt = [dcAdt; dcRdt; dcSdt];
end
```