18/SCI03/008

The total time for a second order reaction is:

1/At=1/Ao+Kt -------------------(1)

For the half life, t=t1/2 and A=Ao/2

Substituting the values into equation (1),

1/Ao/2=1/Ao+Kt1/2

2/Ao=1/Ao+Kt1/2

Kt1/2=2/Ao-1/Ao

Kt1/2=1/Ao

t1/2 =1/K[1/Ao]

t1/2 =1/K[Ao]---------------(2)

From the above equation, it can be concluded that the half life of a second order reaction is concentration dependent.