|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S.No. | **Source** | **Model Equation** | **Dimension** | **Required Parameters** | **State** | **Source Dimension** | **Domain Dimension** | | | **Processes** | | **Additional Information** |
| **Length** | **Width** | **Thickness** | **Chemical** | **Biological** |
| 1 | Van genuchten (1985) |  | 1D | 1 | Transient | Point Source | Semi-Infinite | NA | NA | Linear Equilibrium Sorption | Sequential 1st Order Decay |  |
| 2 | Latinopoulos et al. (1988) |  | 2D | 2 | Transient | Line Source | Semi-Infifnite | Infinite | NA | Linear Adsorption | 1st-Order Decay |  |
| 3 | Domenico (1987) |  | 3D | 11 | Transient | Patch Source | Semi-Infinite | Infinite | Infinite | - | 1st Order-Decay |  |
| 4 | Batu and Van genuchten (1990) |  | 2D | 7 | Transient | Line Source | Semi-Infinite | Infinite | NA | Linear Equilibrium Sorption | 1st Order-Decay |  |
| 5 | F.J.Leij et al. (2000) |  | 3D | 8 | Transient | Planar | Infinite | Infinite | Semi-Infinite |  | First-Order Degradation | First type condition |
|  | 9 |  | Second type condition |
|  | 8 |  | Third type condition (Film diffusion) |
|  | 8 |  | Third type condition(vertical flow) |
| 6 | Cirpka et al. (2006) |  | 2D | 4 | Steady | Line Source | Semi-Infinite | NA | Semi-Infinite | Quasi-Instantaneous Rxn | - |  |
| 7 | Srinivasan and clement (2008a) |  | 1D | 10 | Transient | Point Source | Semi-Infinite | NA | NA | Sorption | Sequential 1st - Order Decay |  |
| 8 | Singh et al. (2009) |  | 1D | 6 | Transient | Point-Source | Finite | NA | NA | - | - |  |
| 9 | Gutierrez-Neri et al. (2009) |  | 3D | 8 | Steady | Planar Source | Semi-Infinite | Infinite | Infinite | Instantaneous Reaction | 1st-Order Decay |  |
| 10 | Hunkeler et al. (2010) |  | 2D | 9 | Transient | Line Source | Semi-Infinite | Infinite | Infinite | Instantaneous Reaction | 1st-Order Decay |  |
|  | 3D | 10 | Planar Source |
| 11 | Kumar et al. (2010) |  | 1D | 6 | Transient | Point Source(  Continuous Input Concentration of Uniform Nature) | Semi-Infinite | NA | NA | - | - | Dispersion through inhomogeneous medium |
|  | 7 | Point Source(  Continuous Input Concentration Of Increasing Nature)(α≠1) | - | - |
|  | 7 | Point Source (Continuous Input Concentration Of Increasing Nature)(α=1) | - | - |
|  | 5 | Point Source (Continuous Input Concentration Of Uniform Nature | - | - | Temporally dependent dispersion along uniform and Steady Flow |
|  | 5 | Point Source (Continuous Input Concentration Of Increasing Nature) | - | - |
| 12 | Yadav and Jaiswal (2011) |  | 2D | 7 | Transient | Point Source | Semi-Infinite | Semi-Infinite | NA | - | 1st-Order Decay |  |
| 13 | Guerrero et al. (2013) |  | 1D | 8 | Transient | Point Source | For Semi-Infinite and Finite Domain both | NA | NA | Linear Equilibrium Sorption | 1st-Order Decay |  |
| 14 | Chen et al. (2016) |  | 2D | 9 | Transient | Irregular Shapes Of Linear, Planar And Volumetric Sources | Finite | Finite | NA | Linear Isothermal Equilibrium Sorption | Sequential 1st-Order Decay |  |
| 15 | Sanskrityayn et al. (2017) |  | 1D | 8 | Transient | Point Source | Infinite | NA | NA | - | First-Order Decay |  |
|  | 9 | Point Source | NA | NA |  |
| 16 | Purkayastha & Kumar (2018) |  | 1D | 4 | Transient | Point Source | Finite | NA | NA | Linear Sorption | 1st-Order Decay |  |
| 17 | F.J.Leij et al. (1993) | Leij, F. J., Toride, N., & van Genuchten, M. T. (1993). Analytical solutions for non-equilibrium solute transport in three-dimensional porous media. *Journal of Hydrology*, *151*(2–4), 193–228. <https://doi.org/10.1016/0022-1694(93)90236-3> | | | | | | | | | | |
| 18 | V. batu(1996) | Batu, V. (1996). A generalized three-dimensional analytical solute transport model for multiple rectangular first-type sources. *Journal of Hydrology*, *174*(1–2), 57–82. <https://doi.org/10.1016/0022-1694(95)02752-1> | | | | | | | | | | |