**Summary of Water Modeling of Piperonyl butoxide BTM and the USEPA Standard Pond**

Estimated Environmental Concentrations for Piperonyl butoxide BTM are presented in Table 1 for the USEPA standard pond with the PAappleSTD\_V2 field scenario. A graphical presentation of the year-to-year peaks is presented in Figure 1. These values were generated with the Pesticide Water Calculator (PWC), Version 1.52. Critical input values for the model are summarized in Tables 2 and 3.

This model estimates that about 0.59% of Piperonyl butoxide BTM applied to the field eventually reaches the water body. The main mechanism of transport from the field to the water body is by runoff (42.2% of the total transport), followed by erosion ( 41%) and spray drift (16.8%).

In the water body, pesticide dissipates with an effective water column half-life of 34.6 days. (This value does not include dissipation by transport to the benthic region; it includes only processes that result in removal of pesticide from the complete system.) The main source of dissipation in the water column is photolysis (effective average half-life = 51.5 days) followed by metabolism (105.7 days) and volatilization (2.138267E+10 days).

In the benthic region, pesticide dissipation is negligible (4242.2 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 4242.2 days). The vast majority of the pesticide in the benthic region (99.86%) is sorbed to sediment rather than in the pore water.

**Table 1. Estimated Environmental Concentrations (ppb) for Piperonyl butoxide BTM.**

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 0.523 |
| 4-day Avg (1-in-10 yr) | 0.420 |
| 21-day Avg (1-in-10 yr) | 0.238 |
| 60-day Avg (1-in-10 yr) | 0.176 |
| 365-day Avg (1-in-10 yr) | 0.112 |
| Entire Simulation Mean | 0.713E-01 |

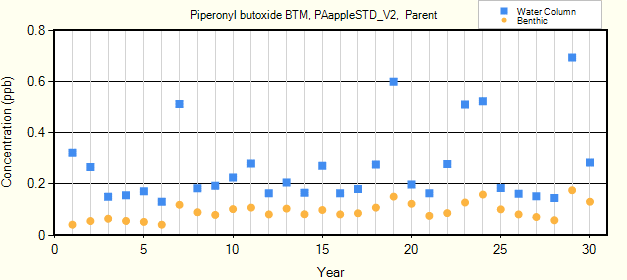
**Table 2. Summary of Model Inputs for Piperonyl butoxide BTM.**

|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1 |
| Koc (ml/g) | 6460 |
| Water Half-Life (days) @ 20 °C | 53.8 |
| Benthic Half-Life (days) @ 20 °C | 2160 |
| Photolysis Half-Life (days) @ 40 °Lat | 0.35 |
| Hydrolysis Half-Life (days) | 0 |
| Soil Half-Life (days) @ 20 °C | 89.3 |
| Foliar Half-Life (days) | 38 |
| Molecular Weight | 338.45 |
| Vapor Pressure (torr) | 5e-13 |
| Solubility (mg/l) | 14.34 |
| Henry's Constant | 6.35e-13 |

**Table 3. Application Schedule for Piperonyl butoxide BTM.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 0.210 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



**Summary of Water Modeling of Piperonyl butoxide BTM and the USEPA Standard Reservoir**

Estimated Environmental Concentrations for Piperonyl butoxide BTM are presented in Table 1 for the USEPA standard reservoir with the PAappleSTD\_V2 field scenario. A graphical presentation of the year-to-year peaks is presented in Figure 1. These values were generated with the Pesticide Water Calculator (PWC), Version 1.52. Critical input values for the model are summarized in Tables 2 and 3.

This model estimates that about 0.52% of Piperonyl butoxide BTM applied to the field eventually reaches the water body. The main mechanism of transport from the field to the water body is by runoff (48.5% of the total transport), followed by erosion (45.6%) and spray drift (5.88%).

In the water body, pesticide dissipates with an effective water column half-life of 32.4 days. (This value does not include dissipation by transport to the benthic region; it includes only processes that result in removal of pesticide from the complete system.) The main source of dissipation in the water column is photolysis (effective average half-life = 70.5 days) followed by metabolism (105.7 days), washout (138.5 days), and volatilization (2.929426E+10 days).

In the benthic region, pesticide dissipation is negligible (4242.2 days). The main source of dissipation in the benthic region is metabolism (effective average half-life = 4242.2 days). The vast majority of the pesticide in the benthic region (99.86%) is sorbed to sediment rather than in the pore water.

**Table 1. Estimated Environmental Concentrations (ppb) for Piperonyl butoxide BTM.**

|  |  |
| --- | --- |
| Peak (1-in-10 yr) | 1.23 |
| 4-day Avg (1-in-10 yr) | 1.04 |
| 21-day Avg (1-in-10 yr) | 0.614 |
| 60-day Avg (1-in-10 yr) | 0.435 |
| 365-day Avg (1-in-10 yr) | 0.249 |
| Entire Simulation Mean | 0.144 |

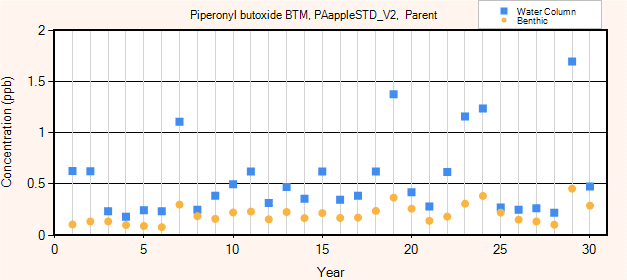
**Table 2. Summary of Model Inputs for Piperonyl butoxide BTM.**

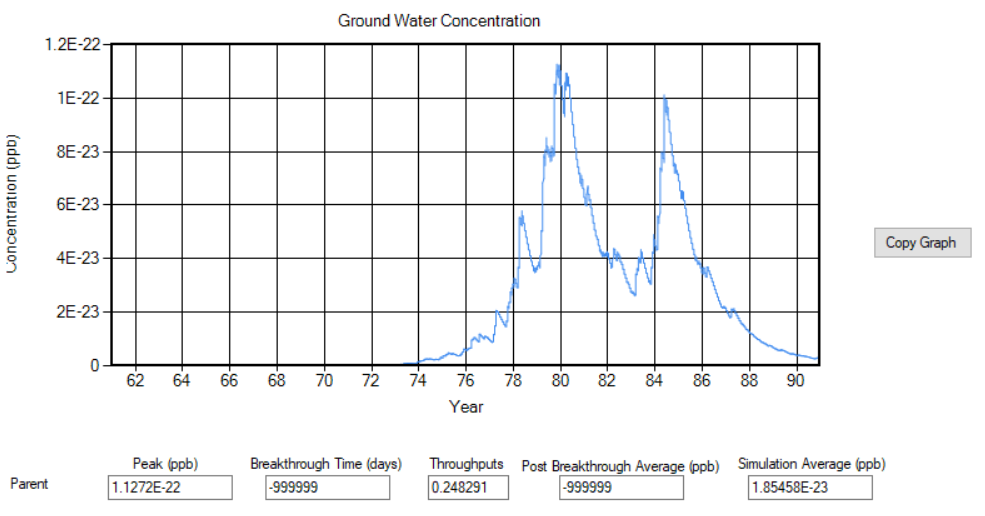
|  |  |
| --- | --- |
| Scenario | PAappleSTD\_V2 |
| Cropped Area Fraction | 1.0 |
| Koc (ml/g) | 6460 |
| Water Half-Life (days) @ 20 °C | 53.8 |
| Benthic Half-Life (days) @ 20 °C | 2160 |
| Photolysis Half-Life (days) @ 40 °Lat | 0.35 |
| Hydrolysis Half-Life (days) | 0 |
| Soil Half-Life (days) @ 20 °C | 89.3 |
| Foliar Half-Life (days) | 38 |
| Molecular Weight | 338.45 |
| Vapor Pressure (torr) | 5e-13 |
| Solubility (mg/l) | 14.34 |
| Henry's Constant | 6.35e-13 |

**Table 3. Application Schedule for Piperonyl butoxide BTM.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date (Mon/Day) | Type | Amount (kg/ha) | Eff. | Drift |
| 4/15 | Above Crop (Foliar) | 0.210 | 0.99 | 0.01 |

**Figure 1. Yearly Peak Concentrations**



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