

TABLE 13 – Toxicity, Solubility, Adsorptivity and Persistence of Herbicides

| Herbicide | Toxicity ¹ LD ₅₀ mg/kg | | Water Solubility (ppm at 25°C) | Adsorptivity to Soil | Soil Persistence at Standard Rate (months) | Runoff/ ² Leaching Potential | Restricted ³ Entry Interval |
|-----------------------------------|---|-----------|--------------------------------------|-------------------------|--|---|--|
| | Oral | Dermal | | | | | |
| Accent Q | >5000 | >2000 | 70 (pH 7.0) | weak–moderate | 1–10 | 3/1 | 4 hrs |
| Affinity BroadSpec | >5000 | >2000 | * | * | 0.5 | 2/2 | 12 hrs |
| Aim | >5000 | >5000 | 22 | strong | – | –/– | 12 hrs |
| Armezon/Impact | >2000 | >4000 | 15,000 ppm@20° C | moderate | 1–8 | –/– | 12 hrs |
| Assure II/Targa | 4100–5900 | >2000 | <1 | moderate | 0.5 | 1/2 | 12 hrs |
| Atrazine | 1075–4346 | >3100 | 33 | strong | 2–8 | 2/1 | 12 hrs |
| Authority XL | 1750 | >5000 | – | strong | 2–10 | 2/1 | 12 hrs |
| Balance Flexx | >2000 | >2000 | 6.8 | strong | – | –/– | 12 hrs |
| Banvel/Clarity | 2629–3512 | >2000 | 4500 | weak | 1–6 | 3/1 | 24 hrs |
| Basagran | 2063 | >10,000 | 500 | weak | 0.5 | 3/1 | 4–8 hrs |
| Basis Blend | >5000 | >2000 | – | – | – | –/– | 4 hrs |
| Beacon | >5050 | >2010 | 18,000 (pH 7.2) | weak | 1–5 | 2/1 | 12 hrs |
| Betamix | 4059 | >1980 | 1 | moderate | 1 | 1/3 | 24 hrs |
| Betanex | 3960 | >9900 | 7 | moderate | 1 | 1/3 | 24 hrs |
| Buctril/Moxy | 780 | 2000 | 50 | moderate | 0.5 | 2/3 | 12 hrs |
| Cadet | >5050 | >2000 | 850 | strong | – | – | 12 hrs |
| Callisto | >5000 | >5000 | – | – | – | – | 12 hrs |
| Canopy/Canopy Blend | >5000 | >5000 | 300 | strong | 1–10 | 2/1 | 12 hrs |
| Canopy EX | >5000 | >2000 | 286 | strong | 1–10 | 2/1 | 12 hrs |
| Capreno | >2000 | >2000 | – | – | – | – | 12 hrs |
| Classic | >5000 | >2000 | 300 | strong | 1–10 | 2/1 | 12 hrs |
| Cobra | 2400–2600 | >2000 | 0.1 | strong | 0.5 | 2/3 | 12 hrs |
| Command | 2084–5000 | 2000–5000 | 1100 | v. strong | 3–6 | 2/2 | 12 hrs |
| 2,4-D | 375–1492 | >2000 | 900 | weak | 1 | 2/2 | 12–48 hrs |
| 2,4-DB | >1706 | 2000 | insoluble | weak | 1 | 2/3 | 48 hrs |
| Define | 1365 | 5000 | 56 | moderate | – | – | 12 hrs |
| Reglone | 600–810 | 260–315 | infinite | v. strong | – | 1/3 | 24 hrs |
| Dual II Magnum/ Cinch/Parallel | 2672–2952 | >2020 | 530 | strong | 1–3 | 2/1 | 24 hrs |
| Eptam | 1325–5000 | 1500–5000 | 370 | strong | 1.5–2 | 2/3 | 12 hrs |
| Express | >5000 | >2000 | 286 | – | 0.5 | 2/2 | 12 hrs |
| FirstRate | >5000 | >2000 | 184 | moderate | 1–4 | –/– | 12 hrs |
| glyphosate** | >5000 | >5000 | 900,000 (pH 7.0) | v. strong | 1 | 1/3 | SL |
| Gramoxone SL 2.0 | 310 | >2000 | infinite | v. strong | 1 | 1/3 | 24 hrs |
| Harmony Extra | >5000 | >2000 | * | * | 0.5 | 2/2 | 12 hrs |
| Harmony | >5000 | >2000 | 2400 | – | 0.25 | 2/2 | 4 hrs |
| Harness | 1249–2948 | 4166–5000 | 223 | moderate | 1–2 | 2/2 | 12 hrs |
| Hornet WDG | >5000 | >5000 | – | – | – | 3/1 | 48 hrs |
| Kerb | >5000 | >2000 | 15 | strong | 2–9 | 2/1 | 24 hrs |
| Laudis | 1750 | 5000 | – | – | – | 1/1 | 12 hrs |
| Liberty | 2119–2030 | 1390–5319 | – | – | – | –/– | 12 hrs |
| Lorox | 3600–4833 | >2000 | 75 | v. strong | 2–4 | 1/2 | 24 hrs |
| Matrix | >5000 | >2000 | – | – | –/– | –/– | 4 hrs |
| MCPA | 800 | 1500 | insoluble | v. weak | 1–4 | 1/3 | 48 hrs |
| Metribuzin | 1500–2794 | >5000 | 1200 | moderate | 2–4 | 2/1 | 12 hrs |
| Nortron SC | >2100 | >4100 | 110 | strong | 1–4 | 2/2 | 12 hrs |
| Optill | >2000 | >2000 | – | weak | 2–8 | – | 12 hrs |
| Osprey | >2000 | >2000 | – | – | – | –/– | 4 hrs |
| Outlook | 695 | >2000 | 1174 | moderate | 1–2 | 2/2 | 12 hrs |

See legend on next page.

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TABLE 13 – Toxicity, Solubility, Adsorptivity and Persistence of Herbicides (continued)

| Herbicide | Toxicity ¹ LD ₅₀ mg/kg | | Water Solubility (ppm at 25°C) | Adsorptivity to Soil | Soil Persistence at Standard Rate (months) | Runoff/ ² Leaching Potential | Restricted ³ Entry Interval |
|------------------------------|---|-----------|--------------------------------------|-------------------------|--|---|--|
| | Oral | Dermal | | | | | |
| Permit | 1287 | >5000 | 15 | – | – | 2/2 | 12 hrs |
| Poast | 2200–4100 | 2000–5000 | 48 | moderate | 0.25 | 2/3 | 12 hrs |
| Princep | >5000 | 2000–2500 | 5 | strong | 2–8 | 2/1 | 12 hrs |
| Prowl/Prowl H ₂ O | 3956 | >2200 | <1 | v. strong | 3–6 | 1/3 | 24 hrs |
| Pursuit | 3506–5000 | >2000 | 1,400 | weak | 2–8 | 1/1 | 12–24 hrs |
| Python | >5000 | >2000 | 49 | moderate | 2–8 | 3/1 | 12 hrs |
| Raptor | >5000 | >4000 | – | weak | 1–2 | –/– | 4 hrs |
| Require Q | 1611 | >2000 | – | – | – | – | 4 hrs |
| Reflex/Flexstar | 3683–8160 | >1000 | 600,000 | weak | 6 | 2/1 | 24 hrs |
| Resolve | >5000 | >2000 | – | – | – | –/– | 4 hrs |
| Resolve Q | 1611 | >2000 | – | – | – | 1/1 | 24 hrs |
| Resource | 3200–4100 | >2000 | .189 | strong | – | 3/2 | 12 hrs |
| Ro-Neet | 3160–3690 | >4640 | 85 | strong | 1–3 | 2/2 | 12 hrs |
| Select/Arrow | 2920–3610 | >5000 | infinite | moderate | 0.25 | 3/3 | 24 hrs |
| Sharpen | >2000 | >5000 | 2100 | weak | 0.5 | – | 12 hrs |
| Sinbar | 5000–7500 | >5000 | 710 | moderate | 5–6 | 2/1 | 12 hrs |
| Sonalan | 3300–5000 | >5000 | 1 | v. strong | 3–5 | 1/3 | 24 hrs |
| Spartan | 2416 | >5000 | 110 | moderate | 2–8 | –/– | 12 hrs |
| Steadfast Q | >5000 | >2000 | – | – | – | – | 4 hrs |
| Stinger | >5000 | >5000 | 1000 | moderate | 1–10 | 3/1 | 12 hrs |
| Surpass NXT | 1249–2948 | 4165–5000 | 223 | moderate | 1–2 | 2/2 | 12 hrs |
| Synchrony XP | >5000 | >2000 | 300 | strong | 1–10 | 2/1 | 12 hrs |
| Trifluralin | 3738 | >2000 | <1 | v. strong | 3–6 | 1/3 | 12 hrs |
| Ultra Blazer | 4790 | 3250 | infinite | strong | 1 | 2/2 | 48 hrs |
| Upbeet | >5000 | >2000 | 110 (pH 7.0) | weak | – | –/– | 4 hrs |
| Valo | >5000 | >2000 | 1.78 | – | – | – | 12 hrs |
| Velpar | 1100–4120 | >5000 | 33,000 | strong | 4–6 | 2/1 | 24 hrs |
| Verdict | >2000 | >5000 | – | moderate | 1-2 | 2/2 | 12 hrs |
| Vida | >5000 | >2000 | – | – | – | – | 12 hrs |
| Warrant | >5000 | >5000 | 223 | moderate | 1-2 | 2/2 | 12 hrs |
| WideMatch | >5000 | >5000 | 1000 | moderate | 1-10 | 3/1 | 12 hrs |
| Zidua | >2000 | >2000 | 3.49 @ 20° C | weak | 1-2 | –/– | 12 hrs |
| (Table Salt) | 3320 | – | 360,000 | – | – | – | – |
| (Aspirin) | 1200 | – | 2,500 | – | – | – | – |

– No information available.

Sources: *Herbicide Handbook*.

¹ The LD₅₀ is a standard toxicological term which indicates the number of milligrams (mg) of pesticide per kilogram (kg) of test animal body weight required to kill 50% of a test animal population. Values less than 10 indicate extremely high toxicity to mammals. The LD₅₀ data have been obtained from the Material Data Safety Sheets.

² The runoff/leaching potential ratings are from the ARS/NRCS pesticide properties database and were developed for use with the NRCS soils ratings for water quality in the NRCS "Soil-Pesticide Interaction Ratings." 1=high, 2=medium, 3=low.

³ Read and follow label directions. Post areas or give oral warnings that areas have been treated to warn workers not to enter until the REI has elapsed as required by the label. SL=See Label.

* Combination of *Express* and the active ingredient in *Harmony*.

** Glyphosate IPA salt; active ingredient in products in Table 10.