



Picloram

Pesticide Fact Sheet: Forestry Use

Product Information

- Picloram is the common name for the active ingredient in herbicide products that include **Tordon K** and **Tordon 22K**. **Tordon 101M**, **Tordon RTU**, and **Pathway** are a mixture of picloram and 2,4-D. These products can be used either on forest sites or rights-of-way. Picloram is a broad-spectrum herbicide used to control woody species and broadleaf weeds.
- The most common forestry picloram formulations are water-soluble amine and potassium salts.
- Typical applications to Northwest forests range from 2 ounces to 1 pound of active ingredient per acre. Applicators usually apply picloram from spring until the first frost.
- **Tordon K**, **Tordon 101M** and **Tordon 22K** are Restricted Use Pesticides (RUP) and may be applied only by licensed applicators. **Pathway** and **Tordon RTU** are general use pesticides available to the general public.
- For comparative purposes, the Environmental Protection Agency (EPA) categorizes pesticides by their short-term toxicity on a scale of I (most toxic) to IV (least toxic). Most undiluted picloram formulations are Toxicity Category II.

Public Health

- Researchers use animal studies to define the potential for a pesticide to cause harmful effects to human health. It is important to know that these tests are carried out using doses high enough to cause toxicity (poisoning). Effects seen at toxic doses in animals are unlikely to occur after short-term, low-level exposure in humans. The level of exposure must be considered to estimate the risk of harmful effects.
- Based on laboratory feeding studies, picloram is classified as slightly toxic to mammals on a short term (acute) basis. However, picloram products are moderately toxic when inhaled.
- In laboratory animal tests, small amounts of picloram were rapidly absorbed and eliminated from the body; 90% of the administered dose was eliminated virtually unchanged within 48 hours.
- Picloram does not cause birth defects, nerve damage, DNA damage, or cancer.
- EPA has classified the chemical as a Group E carcinogen (no evidence of carcinogenicity for humans), the least toxic category.

Wildlife Effects

- Based on laboratory and field studies, picloram is classified as practically non-toxic to birds and bees.

- Picloram is moderately toxic to fish. Studies indicate that picloram may pose a threat to juvenile trout as a result of long-term (chronic) exposure.
- Picloram is not expected to be stored in the fat of animals.

Environmental Fate

- In water environments, picloram binds weakly to sediments but may bind more strongly to dissolved organic materials. Half-life values for picloram breakdown in surface water range from 2.3 to 41.3 days.
- Picloram accumulates in new plant growth.
- Picloram is toxic to some plants at very low concentrations. Sensitive non-target plants may be adversely affected if the pesticide is allowed to drift from application areas.
- Picloram will break down in sunlight.
- Picloram is moderately to highly persistent in soils. It typically does not bind strongly to soil particles and does not volatilize from soil surfaces. Salts of picloram are water-soluble. Picloram breaks down in soils primarily by microbial action. A typical half-life in soils is 90 days. Picloram's half-life may be substantially longer in dry regions.
- Salts of picloram are classified as highly mobile and can travel with

water through soil and enter groundwater. It can also move with runoff and enter surface water. Right-of-way uses should be evaluated for potential surface and groundwater contamination.

Risk Assessment

▪ The EPA has evaluated use practices, environmental fate, potential exposure routes, and toxicity of picloram. They have also evaluated the toxicity of picloram and set a Reference Dose (RfD) of 0.2 mg/kg/day. This RfD corresponds to an intake of 14.0 mg/day for a 154 lb. (70 kg) person. Such an intake reflects the amount of daily pesticide exposure judged to pose no appreciable risk over a 70-year lifetime. The RfD for picloram is based on the results of the most sensitive animal studies (rat) and includes factors designed to provide large margins of safety.

▪ EPA has determined that the expected exposure associated with picloram in right-of-way use will not result in adverse health effects. However, you should take reasonable precautions to avoid exposure. Do not walk through freshly-sprayed vegetation. Do not eat berries, mushrooms, or other edibles, or drink the water from newly-treated areas. If you are concerned about exposure, consult the resources listed in **Additional Information**.

References

▪ Meister, R.T., editor. 1996. Farm Chemicals Handbook '96. Meister Publishing Company. Willoughby, OH.

▪ National Library of Medicine. 1995. Hazardous Substances Data Bank (HSDB). MEDLARS Management Section. Bethesda, MD. CD ROM Version.

▪ U.S. Environmental Protection Agency. 1995. Integrated Risk Information System (IRIS). Environmental Criteria and Assessment Office. Cincinnati, OH.

▪ U.S. Forest Service. 1984. Pesticide Background Statements. Vol. 1. Herbicides. Agriculture Handbook Number 633. U.S. Department of Agriculture. Washington, D.C.

▪ U.S. Environmental Protection Agency. 1995. Pesticide Environmental Fate One-Line Summary: Picloram. Environmental Fate and Effects Division. Washington, D.C.

▪ U.S. Environmental Protection Agency. 1988. Health Advisory: Picloram. Office of Drinking Water. Washington, D.C.

▪ U.S. Environmental Protection Agency. 1995. Reregistration Eligibility Decision (RED): Picloram. Prevention, Pesticides and Toxic Substances, EPA 738-R95-019. Washington, D.C.

Vogue, P.A., E.A. Kerle, and J.J. Jenkins. 1994. OSU Extension Pesticide Properties Database. Department of Agricultural Chemistry. Oregon State University. Corvallis, OR.

Additional Information: Oregon

- Oregon State University Extension Environmental Chemistry and Toxicology Program
1-541-737-5993 Extension Specialist
- Oregon Poison Control
1-800-222-1222 (National)
1-503-494-8968 (Portland)
1-800-452-7165 (Outside Portland)
- Oregon Department of Agriculture
1-503-986-4550
1-503-986-4635 (Pesticide Division)
- Oregon Health Division Pesticide Analytical Response Center
1-503-731-4025 (8 a.m.-5 p.m., M-F)
1-503-731-4030 (evenings, weekends)

Washington

- Poison Control Center
1-800-222-1222 (National)
1-206-526-2121 (Seattle)
1-800-732-6985 (Outside Seattle)
- Washington Department of Agriculture, Pesticide Management Division
1-877-301-4555 (toll free)
1-360-902-2040 (Olympia)
1-509-576-3064 (Yakima)
- Washington State University Food and Environmental Quality Laboratory
100 Sprout Road
Richland, WA 99352-1643
1-509-372-7462 (phone)
1-509-372-7460 (fax)
- Washington Department of Health
1-800-525-0127
1-360-236-3360 (Pesticide Program)
1-888-586-9427 (toll free)

Nationwide

- National Pesticide Information Center
1-800-858-PEST (7378)
<http://npic.orst.edu/>
- Extension Toxicology Network (EXTOXNET)
<http://ace.orst.edu/info/extoxnet/>
- DuPont Agricultural Products
P.O. Box 80038 Wilmington, DE
19880-0038
1-800-441-7515
1-800-441-3637 (emergency phone)
1-302-992-2276 (fax)