

## **Oregon Department of Human Services**

**Office of Environmental Public Health  
800 NE Oregon Street #604  
Portland, OR 97232-2162**

**(503) 731-4030 Emergency  
(971) 673-0405  
(971) 673-0457 FAX  
(971) 673-0372 TTY-Nonvoice**

### **TECHNICAL BULLETIN**

## **HEALTH EFFECTS INFORMATION**

**Prepared by:**

**ENVIRONMENTAL TOXICOLOGY SECTION  
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**PICLORAM**

**For More Information Contact:**

**Environmental Toxicology Section  
(971) 673-0440**

**Drinking Water Section  
(971) 673-0405**

**SYNONYMS:** Tordon, Grazon, Amdon, Pinene

**CHEMICAL NAME AND MOLECULAR FORMULA:**

Picloram is chemically identified as 4-amino-3,5,6-trichloropicolic acid whose chemical formula and structure are as follows:  $C_6H_3Cl_3N_2O_2$

**USES:** Picloram is an herbicide which is widely used for killing weeds in road right-of-ways, nonproductive lands, forest land, range lands, ditch banks, fencerows and commercial or industrial properties.

**CHEMICAL AND PHYSICAL PROPERTIES:** Picloram is a manmade pesticide product. In pure form it is a white powder or crystals which smells like chlorine. It is very soluble in water, and is generally sold and applied in water solution rather than as dry material. It has very low volatility (does not evaporate readily) when it is exposed or released to the environment. It is not flammable and will decompose only if heated to very high temperatures (over 400 degrees F.)

**HOW IS IT APPLIED? HOW DOES IT ENTER THE ENVIRONMENT?**

Picloram herbicide is generally applied as a water solution sprayed directly onto plants. Soil, air and water in the immediate vicinity of spraying may be contaminated by the spray. Empty containers that are inadequately cleaned, spills of the spray and water used to wash containers, mixing and application equipment may carry the pesticide onto soil, air or water. Herbicide manufacturing plants may produce localized contaminants in air emissions and in liquid waste emissions.

**WHAT HAPPENS TO PICLORAM IN THE ENVIRONMENT?**

Picloram applied to plants is absorbed readily into the plants and accumulates in the fastest growing portions of the plant. Picloram is relatively stable and persistent in the environment. It can last for up to 12 days in the air, for 2 to 4 days in surface water, and for 18 months to several years in protected soils. It is also quite mobile in soils which enables it to move downward toward groundwater supplies. Once in deep soils or groundwater it can remain for years.

**HOW CAN PEOPLE OR ANIMALS BE EXPOSED TO PICLORAM?**

Picloram can be inhaled as aerosol or droplets while being applied. Persons who manufacture, package, mix or apply Picloram are at the greatest risk for exposure. Generally one must be very close to the point of application to receive significant exposure. It is almost nonabsorbable through skin. It can enter the body through ingestion of contaminated food products, beverages or drinking water.

### **WHAT ARE THE KNOWN HEALTH EFFECTS OF EXPOSURE?**

Persons who handle or are exposed to dry Picloram or who are exposed to aerosolized liquid formulations of the pesticide may experience immediate eye, skin, nose and respiratory irritation that subsides when exposure ceases. Acute effects from oral exposure are unlikely except in extreme exposures involving grams of Picloram. Effects of repeated exposure include weakness, diarrhea, weight loss, liver and kidney, and nervous system effects. Animal experiments have shown some chronic effects caused by Picloram. It is not known whether Picloram causes any chronic health effects such as developmental effects, birth defects, or reproductive effects in human beings.

### **IS THERE A DRINKING WATER STANDARD FOR PICLORAM?**

Yes, the US Environmental Protection Agency has adopted a maximum contaminant level of 0.5 milligrams of Picloram per liter of water (0.5 ppm, 500 ppb). USEPA and the US Food and Drug Administration have also adopted food tolerances for human food products which range from 0.05 ppm (50 ppb) to 3 ppm (3000 ppb), limiting the amount of Picloram in market foods.

### **SHOULD I BE CONCERNED ABOUT PICLORAM LEVELS WHICH ARE LOWER THAN THE MAXIMUM CONTAMINANT LIMIT?**

It is believed that the maximum contaminant limit is sufficiently low to prevent either short term or long-term injury to persons using the water. If your drinking water contains detectable amounts of Picloram but at levels at or below the MCL it should not be harmful to you. If the levels in your water are above the MCL, you should discontinue using the water for food preparation, for beverages or as drinking water.

**CAN PICLORAM BE EFFECTIVELY REMOVED FROM DRINKING WATER?** Yes Picloram residuals can be removed from drinking water by granular activated carbon filters. Before purchasing or installing any form of treatment equipment you are encouraged to contact the Department of Human Services Drinking Water Section 971-673-0405 for specific consultation and assistance.

### **WHERE CAN I GET MORE INFORMATION ?**

You can obtain additional information about your particular concern by calling either of the numbers on the title sheet of this fact sheet.