Minnesota Department of Natural Resources Pesticide Environmental and Social Risk Assessment

Pesticide Active Ingredient: Aminocyclopyrachlor

Version 1.1

2022

Environmental Assessment

Pesticide: Aminocyclopyrachlor	**Hazard Status:** Aminocyclopyrachlor is not considered a highly hazardous pesticide (HHP) per the FSC Pesticides Policy (FSC-POL-30-001 V3-0 EN) and the FSC Lists of Highly Hazardous Pesticides (FSC-POL-30-001a EN).		
Specific Formulation (CAS#):	**Method 240SL** (858956-08-8): potassium salt of aminocyclopyrachlor – 25%, other ingredients – 75%		
Exposure Elements	**Minimum list of values**	**Description of why/why not a risk**	**Mitigation strategies defined to minimize risk[1]**
Environmental	**Soil (erosion, degradation, biota, carbon storage)**	**Minimal indication of adverse effects to soil was found when aminocyclopyrachlor is used according to label instructions in forestry applications. Additional considerations are provided below.** Aminocyclopyrachlor has minimal documented adverse effects on soil microorganisms at concentrations expected within the top twelve inches of soil (2).	**Follow all pesticide label application instructions. Follow applicable criterion and indicators from the FSC US FM Standard V1.0 (e.g., Criterion 4.3 for worker safety, Criterion 7.3 for worker training, Criterion 6.5 for protecting water resources, and Criteria 8.1 and 8.2 for Monitoring). Additional risk mitigation strategies are provided below. Applicators should take reasonable steps to avoiding environmental and social impacts by considering the mitigation strategies provided below as well as application-, Organization-, or location-specific strategies.** **General consideration of exposure variables designed to mitigate risk:** -Know and understand the specific pesticide formulation and/or tank mixture, as its unique formulation may provide a different risk characterization. -Understand how the mixture of active ingredients affects the pesticide's risk profile. -Seek to minimize the frequency, interval, and amount of application. -Use the most efficient and effective method of application by seeking to minimize risk to environmental and social values.
	Water (ground water, surface waters, water supplies)	**Some indication of adverse effects to water was found when aminocyclopyrachlor is used according to label instructions in forestry applications. These are as follows below.** This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months after application (1). It has properties and characteristics associate with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable particularly where the water table is shallow (1). Contamination of runoff water will impact non-target plant species (2).	

		Similarly, contaminated irrigation water will impact non-target plant species (2).	-Understand the site (e.g., soil type, topography, etc.) and climatic (e.g., wind, temperature, and humidity) conditions and the likely effect on risk to environmental and social values. -Have appropriate waste management systems in place. **Mitigating Risk to the Environment:** *Reduce contact with water resources, follow all label requirements, and minimize application amounts and number of applications.* - Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters or rinsate (1). - Do not apply within the root zone of desirable trees and/or shrubs unless injury or loss can be tolerated. Root zones of desirable trees/shrubs may extend beyond the tree canopy (1). - Do not apply this chemical within 100 feet of conifers, as DNR Forest Health has documented substantial cases across the state of damage to non-target conifers. - Do not apply if site-specific characteristics and conditions exist that could contribute to movement and unintended root zone exposure to desirable trees or vegetation (1). - Do not make applications when circumstances favor movement from treatment site (1). -A level, well-maintained vegetative buffer strip between areas to which this product is
Environmental	**Atmosphere (air quality, greenhouse gasses)**	**Minimal indication of adverse effects to atmosphere was found when aminocyclopyrachlor is used according to label instructions in forestry applications.**	
	Non-target species (vegetation, wildlife, bees and other pollinators, pets)	**Aminocyclopyrachlor is hazardous to terrestrial plants (macrophytes) so non-target plants are at risk for spray drift and direct spray. White pine, aspen, cottonwood, silver maple, Norway spruce, and other native trees are particularly sensitive to low levels of aminocyclopyrachlor (1). Additional information for other non-target species is provided below.** There is no basis for asserting that applications of aminocyclopyrachlor will lead to detectable signs of toxicity in terrestrial wildlife, aquatic animals or aquatic algae (2). Despite data limited by the number of species available, aminocyclopyrachlor does not pose risk to mammals, birds, fish, and aquatic invertebrates (2). Based on a single efficacy study, damage to sensitive species of non-target aquatic macrophytes cannot be ruled out (2). Secondary effects to habitats and food availability for terrestrial or aquatic animals could occur. While these concerns are acknowledged, they are common to any effective method for vegetation management, including mechanical methods that do not involve herbicide use (2).	
Environmental	**Non-timber forest products (as FSC-STD-01-001 V5-2 FSC**	**Minimal indication of adverse effects to non-timber forest products was found when aminocyclopyrachlor is used according to label instructions in forestry**	

	Principles and Criteria, criterion 5.1)	**applications.** Secondary effects to habitats and food availability for terrestrial or aquatic animals could occur. While these concerns are acknowledged, they are common to any effective method for vegetation management, including mechanical methods that do not involve herbicide use (2).	applied and surface water features such as ponds, streams, and springs will reduce the potential loading of aminocyclopyrachlor from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours (1). - Do not apply to highways/roadsides or other non-crop areas during periods of intense rainfall or where prevailing soils are either saturated with water or of a type through which rainfall will not readily penetrate, as this may result in off-site movement (1). - Do not apply or otherwise permit this product or sprays containing this product to come into contract with any non-target crop or desirable vegetation (1). - Do not apply when powdery dry soil or light or sandy soils are known to be prevalent in the area to be treated. Treatment of such soils, when there is little likelihood of rainfall soon after treatment, may result in off target movement and possible damage to susceptible crops and desirable vegetation when soil particles are moved by wind or water (1). - Do not apply when the soil is frozen or covered with snow (1). - Applications should be made only when there is little or no hazard from spray drift. Very small quantities of spray, which may not be visible, may seriously injure susceptible plants (1).
	High Conservation Values (particularly HCV 1-4)	**Minimal indication of adverse effects to high conservation values was found when aminocyclopyrachlor is used according to label instructions in forestry applications. Additional considerations are provided below.** Secondary effects on habitat, landscape and ecosystem are possible due to changes in vegetation (2).	
	Landscape (aesthetics, cumulative impacts)	**Minimal indication of adverse effects to landscape values was found when aminocyclopyrachlor is used according to label instructions in forestry applications. Additional considerations are provided, below.** Secondary effects on habitat, landscape and ecosystem are possible due to changes in vegetation (2).	
	Ecosystem services (water, soil, carbon sequestration, tourism)	**Minimal indication of adverse effects to ecosystem services was found when aminocyclopyrachlor is used according to label instructions in forestry applications. Additional considerations are provided, below.** Secondary effects on habitat, landscape and ecosystem are possible due to changes in vegetation (2).	

[1] Mitigation strategies have been categorized to avoid redundancy.

Sources

(1) Bayer Environmental Science. Pesticide Product Label [Method 240SL]. Retrieved from https://www.backedbybayer.com/-

/media/prfunitedstates/documents/resource-library/product-labels/method-240sl.ashx
(2) USDA/Forest Service. 2012. Aminocyclopyrachlor Human Health and Ecological Risk Assessment. Prepared by Syracuse Environmental Research Associates, Inc. under USDA Forest Service Contract AG-3187-C-12-0009. Retrieved from https://www.fs.fed.us/foresthealth/pesticide/pdfs/Aminocyclopyrachlor.pdf
(3) Bayer Environmental Science. 2020. Safety Data Sheet [Method 240SL Herbicide]. Retrieved from https://www.environmentalscience.bayer.us/-/media/prfunitedstates/documents/resource-library/sds/method_240sl_herbicide.ashx

Social Assessment

Pesticide: Aminocyclopyrachlor	**Hazard Status:** Aminocyclopyrachlor is not considered a highly hazardous pesticide (HHP) per the FSC Pesticides Policy (FSC-POL-30-001 V3-0 EN) and the FSC Lists of Highly Hazardous Pesticides (FSC-POL-30-001a EN).		
Specific Formulation (CAS#):	**Method 240SL** (858956-08-8): potassium salt of aminocyclopyrachlor – 25%, other ingredients – 75%		
Exposure Elements	**Minimum list of values**	**Description of why/why not a risk**	**Mitigation strategies defined to minimize risk[1]**
Social	**High Conservation Values (especially HCV 5-6)**	**Minimal indication of adverse effects to high conservation values was found when aminocyclopyrachlor is used according to label instructions in forestry applications. Additional considerations are provided below.** Secondary effects on habitat, landscape and ecosystem are possible due to changes in vegetation (2).	**Follow all pesticide label application instructions. Follow applicable criterion and indicators from the FSC US FM Standard V1.0 (e.g., Criterion 4.3 for worker safety, Criterion 7.3 for worker training, Criterion 6.5 for protecting water resources, and Criteria 8.1 and 8.2 for Monitoring). Additional risk mitigation strategies are provided below. Applicators should take reasonable steps to avoid environmental and social impacts by considering the mitigation strategies provided below, as well as application-, Organization-, or location-specific strategies.** **General consideration of exposure variables designed to mitigate risk:** -Know and understand the specific pesticide formulation, as its unique formulation may provide a different risk characterization. -Understand the mixture of active
	Health (fertility, reproductive health, respiratory health, dermatologic, neurological and gastrointestinal problems, cancer and hormonal imbalance)	**Minimal indication of adverse effects to human health was found when aminocyclopyrachlor is used according to label instructions in forestry applications. Additional considerations are provided below.** Causes moderate eye irritation (1). No risks to workers or members of the general public are anticipated (2).	
	Welfare	**Minimal indication of adverse effects to welfare was found when aminocyclopyrachlor is used according to label instructions in forestry applications.**	
	Food and water	**Minimal indication of adverse effects to food was**	

		found when aminocyclopyrachlor is used according to label instructions in forestry applications. Some indication of adverse effects to water was found when aminocyclopyrachlor is used according to label instructions in forestry applications. These are as follows below. This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months after application (1). It has properties and characteristics associate with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable particularly where the water table is shallow (1). Contamination of runoff water will impact non-target plant species (2). Similarly, contaminated irrigation water will impact non-target plant species (2).	ingredients. -Seek to minimize the frequency, interval, and amount of application. -Use the most efficient and effective method of application by seeking to minimize risk to environmental and social values. -Understand the site (e.g., soil type, topography, etc.) and climatic (e.g., wind, temperature, and humidity) conditions and the likely effect on risk to environmental and social values. -Have appropriate waste management systems in place. **Mitigating Risk to Workers:** *When applying pesticides, label instructions should be followed.* Personal Protective Equipment (PPE): Applicators and other handlers must wear: • Long-sleeved shirt and long pants • Shoes plus socks • Chemical resistant goggles • Chemical resistant nitrile rubber gloves (3). *Applicators should:* -Avoid contact with eyes or clothing. -Wash hands thoroughly with soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet. -Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. **Mitigating Risk to Public Access/Public Welfare:** -Reduce the possibility of public
Social	**Social Infrastructure; (schools and hospitals, recreational infrastructure, infrastructure adjacent to the management unit)**	**Minimal indication of adverse effects to social infrastructure was found when aminocyclopyrachlor is used according to label instructions in forestry applications.**	
	Economic viability (agriculture, livestock, tourism)	**Minimal indication of adverse effects to economic viability was found when aminocyclopyrachlor is used according to label instructions in forestry applications. However, additional considerations are provided below.**	

		There is a potential for spray drift to adversely affect terrestrial plant species, including crops (2). Given no documented adverse effects on animals (2), there is low risk for economic viability of livestock or tourism.	consumption of contaminated wild food (e.g., fruit or fungi) and public exposure to pesticides through public outreach and engagement, limiting access, and/or appropriate signage. -Consider effects on local communities and indigenous peoples when considering limiting access to treatment areas. **Minimizing Risk to Food and Water Resources:** - Applications should be made only when there is little or no hazard from spray drift. Very small quantities of spray, which may not be visible, may seriously injure susceptible plants (1). - Do not apply in or on dry or water containing irrigation ditches or canals including their outer banks (1). - Do not apply through any type of irrigation system (1). - Do not contaminate water intended for irrigation. To avoid injury to crops or other desirable vegetation, do not treat or allow spray drift or run-off to fall onto banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation purposes (1). - Do not graze or feed forage, hay, or straw from treated areas to livestock (1). - Do not use plant material treated with this product for mulch or compost (1). - Do not plant the treated sites for at least one year after application if non-crop sites treated with herbicide are to be converted to a food, feed, or fiber agricultural crop, or
	Rights (legal and customary)	**Minimal indication of adverse effects to rights was found when aminocyclopyrachlor is used according to label instructions in forestry applications.**	
	Others	**No additional values were identified in this assessment.**	

			to a horticultural crop (1). - Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters or rinsate (1).

[1] Mitigation strategies have been categorized to avoid redundancy.

Sources

(1) Bayer Environmental Science. Pesticide Product Label [Method 240SL]. Retrieved from https://www.backedbybayer.com/-/media/prfunitedstates/documents/resource-library/product-labels/method-240sl.ashx

(2) USDA/Forest Service. 2012. Aminocyclopyrachlor Human Health and Ecological Risk Assessment. Prepared by Syracuse Environmental Research Associates, Inc. under USDA Forest Service Contract AG-3187-C-12-0009. Retrieved from https://www.fs.fed.us/foresthealth/pesticide/pdfs/Aminocyclopyrachlor.pdf

(3) Bayer Environmental Science. 2020. Safety Data Sheet [Method 240SL Herbicide]. Retrieved from https://www.environmentalscience.bayer.us/-/media/prfunitedstates/documents/resource-library/sds/method_240sl_herbicide.ashx