



Educational Series

The Environmental Impact of Wax



THE ENVIRONMENTAL IMPACT OF WAX

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As we become increasingly aware of the impact of our actions on our planet, one area that is receiving a lot of attention in the snow sports arena is the environmental impact of waxing. Skiers and snowboarders, for the most part, respect the outdoors and are concerned about the pollution of their mountains and trails. Some companies saw this awareness as a marketing opportunity and are “going green” with “all-natural” waxes. But in the rush to develop and market more environmentally safe waxes, two key facts have been overlooked:

1. The vast majority of ski and snowboard waxes are hydrocarbons and, as such, are already “green”.
2. The environmental impact of snow wax (even highly fluorinated versions) is negligible.

Let’s look at the situation through the lens of hard science, rather than that of marketing hype:

Hydrocarbon Waxes

Ski and snowboard hydrocarbon waxes contain paraffins and microcrystalline waxes, which are by-products of crude oil distillation. This means that the wax is what remains after the gasoline and diesel fuel are separated from the crude oil. These hydrocarbon waxes come from the earth and are natural, just like the ester and carnauba waxes found in some new “green” waxes. Synthetic paraffins, sometimes used as hardeners in hydrocarbon waxes, are used in much smaller volumes.

The natural and synthetic hydrocarbon waxes used in ski and snowboard wax formulations, and in many other industries, are non-toxic. The FDA has approved some grades of these waxes as food additives and others are often used in food packaging, cosmetics and personal care products. Baby oil, for example, is a liquid paraffin, and Vaseline® is a microcrystalline wax.

The Biodegradable Products Institute has concluded that the natural and synthetic paraffins of the types included in snow sports waxes are biodegradable. Microcrystalline waxes, including those used in snow sports waxes, are biodegradable/compostable.

Clearly, hydrocarbon ski and snowboard waxes are not toxic to humans or hazardous for the environment. As for the volumes of wax deposited on the mountain, over a three-day period, one thousand skiers and snowboarders (assuming all are freshly waxed) will leave behind only about a pound of biodegradable wax, spread over the entire mountain.

Fluorinated Waxes

The potential pollution of the snow (and subsequently of the ground and groundwater) by non-biodegradable fluorinated wax additives has been investigated. A few years ago, a concentration of fluorinated additives was found on the snow at the start of the Vasaloppet, an iconic cross country skiing event in Sweden. The concentrations reported correspond to one ounce of fluoro additive spread over seventeen miles of a trail approximately thirty-five feet wide. This concentration was found on the trail after a cross country race which draws over 10,000 skiers, most of them with significant levels of fluoro on their skis.

We can calculate that the amount of fluoro left on the mountain after ten million skier/snowboarder visits will be, at most, 38 pounds.* To put this number into perspective, 38 pounds of fluoro, in the form of discarded microwave popcorn bags, are thrown into trash bins around America every 15 minutes.** Clearly, the environmental impact of the fluoro in snow waxes is miniscule and, in comparison with the very real hazards endangering our planet from other sources, it is insignificant.

We support valid environmental protection initiatives but must question the actions of companies marketing “green” waxes while condemning traditional waxes; they are either intentionally misleading the consumer or simply unable to fully comprehend and properly interpret the available scientific data. Meanwhile, true opportunities to protect the environment are being missed by our industry. For example, a winter sports resort has touted their switch to a “green” all-natural wax to avoid polluting the environment. Instead, they should calculate the pollution generated by one pass of their snowcat through a trail, and compare that pollution to the wax left on the same trail by skiers and snowboarders in a week. The result would be a real eye-opener and would clearly indicate that using a cleaner-fuel snowcat would do far more to protect the environment than any number of people switching to “green” waxes.

DOMINATOR has always developed and presented products within the strict parameters of our environmental and social conscience. We went against a long-established wax industry position when we felt that not enough was done to safeguard the health of professional wax technicians. We would do the same to protect our mountains and trails if we felt the waxes posed an environmental threat of any kind. The technology of DOMINATOR products is the most advanced in the field; we have no trouble making “green” waxes out of esters and beeswax, but their performance is inferior and the benefit to the environment just not there. So you should go ahead and enjoy the performance edge offered by traditional hydrocarbon and fluoro waxes, guilt-free.

DOMINATOR will continue to monitor environmental impact issues, and supporting our position, as always, with updates on the latest research.

*This is how we came up with these numbers: We used Colorado, which receives around 10 million skier/snowboarder visits per year, as a model. We assumed that 50 percent of visitors wax their gear and that these people wax every three times they are on snow. (In reality, only about five percent of them wax, and then only about every five times they are on snow, but we exaggerated to make a point.) The bases absorb approximately four grams of wax, the wax contains on the average 0.5 percent fluoro, and half of the wax is left behind on the snow. This calculates out to 38 pounds of fluoro ending up on Colorado snow, in all the resorts combined, during an entire season.

** Americans consume 16 billion quarts of popcorn per year, about 70% of which is produced in microwave bags. The inside of these bags is treated with fluoro to prevent the oils from migrating to the outside of the bag. We calculated how much fluoro is used per bag, then figured out how much fluoro is needed to make the bags for that 70%: 11.2 billion quarts of microwave popcorn. It turns out that the worldwide annual consumption of fluoro for snow waxes is equivalent to the fluoro in the microwave popcorn bags thrown out every 17 hours in America.