

Environmental Testing of Coal Dust Suppressant MinTopper S+0150 Falls Short

BNSF acknowledges that there is a significant problem with fugitive coal dust escaping from uncovered boxcars en route between the Powder River Basin coalmines and ports in the Pacific Northwest. As mitigation, BNSF suggests requiring all boxcars of coal be treated with MinTopper S+0150 to suppress coal dust release into the environment.

MinTech Enterprises states that their product is

“Practically non-toxic (EPA 821-R-02012) 48-hour LC50 (Ceriodaphnia dubia): 3,151 mg/L 96-hour LC50 (Pimephales promelas): 6,373 mg/L.”

See:

https://www.momarhaystack.com/data//PRODUCTSANDEQUIPMEN T/tm10514mintoppers0150//tm10514mintoppers0150_tds.pdf

But short-term laboratory tests are not adequate to assess ecological impacts “in the field.” Several significant examples demonstrate that chemicals thought to be biodegradable are actually transformed into eco-toxic endocrine disruptors in aqueous environments. Although MinTopper S+0150 does not contain nonylphenol ethoxylates (which are transformed into endocrine disrupting nonylphenols in low-oxygen aqueous environments), we truly do not know how MinTopper S+0150 behaves in different environments over time periods of months to years. Simple laboratory tests lasting only 48 to 96 hours and using death rates of two “model” aquatic organisms are inadequate. Death rates are a very limited measure of toxicity.

I am concerned about endocrine disrupting or other adverse effects on fish and amphibians that would need to be studied over several generations. In addition, new research shows that some synthetic chemicals are genotoxic. Exposure to the chemical does not adversely affect the parents’ reproductive capabilities, but will adversely affect subsequent generations. Partial degradation products of MinTopper S+0150 may accumulate in the food chain

and become toxic to animals, such as orca whales, that are at the top of the food chain. Partial degradation products of MinTopper S+0150 may adversely affect salmon reproduction. Components of MinTopper S+0150 or their degradation products may act synergistically to produce effects that are not detected when the individual components are studied. For example, an emulsifier or dispersant component in a product may facilitate biological absorption of a hydrophobic component or its degradation product.

More than 85,000 chemicals are registered for commerce in the U.S. Around 2,000 new chemicals are marketed each year. Chemical manufacturers are not required to disclose health or environmental safety information for any chemical, except for those used in food or drugs. So when a manufacturer does perform some low level toxicity testing of their product, the reaction is “Wow –this is great.”

The problem is that our knowledge is incomplete. Surprising new information can be discovered. This recently happened for Trenbolone, a growth-enhancing hormone given to cattle. This synthetic hormone was thought to breakdown in water exposed to sunlight. The News&Analysis section of the journal Science, which highlights significant new discoveries, recently summarized new Trenbolone research under the title “Zombie Endocrine Disruptors May Threaten Aquatic Life.” In darkness the degradation product of Trenbolone can transform back into its parent hormone. Breakdown products of other artificial hormones, such as an oral contraceptive and an illegal body-building drug, also reformed the parent hormone in the dark. We cannot assume that chemicals will be effectively biodegraded in real world environmental compartments, especially in water.

The description of MinTopper S+0150 as “water resistant” is not reassuring. “Water resistant” implies that the product will sometimes be washed off the coal and will contaminate the environment. The coal trains travel over or near many sensitive marine and fresh water habitats including lakes, streams, rivers, wetlands and marine shorelines. Please require extensive long-term and multi-generational studies of MinTopper S+0150 in “field trials” before it is used to suppress fugitive coal dust along the route between the Powder River Basin and Columbia River ports, including the proposed coal export facility at Longview, Washington. This information is essential to protect fish populations that migrate along the Columbia River, especially the federally listed Chinook salmon.

The tourist-based economy of San Juan County, Washington depends on the survival of our iconic Southern Resident Killer (Orca) Whales. These impressive, but vulnerable, marine mammals spend much of the winter months outside the mouth of the Columbia River feeding on Chinook salmon that originated in the Upper Columbia and Snake Rivers. See:

http://www.nwfsc.noaa.gov/research/divisions/cb/ecosystem/marinemammal/satellite_tagging/blog.cfm

The Southern Resident Killer (Orca) Whales are federally listed as Endangered. Because their major food source is Chinook salmon and because the Columbia River Chinook are now known to be a vital part of the diet of the Southern Resident Killer (Orca) Whales, please require multi-generation studies of the effects of MinTopper S+0150 and its biodegradation products on Chinook salmon reproduction and multi-generational sustainability.

Further questions to address include:

How much MinTopper S+0150 would be used per boxcar of coal?

What is the cumulative weight of MinTopper S+0150 that would be used per year on coal shipments by rail to the proposed Millennium Bulk Terminal coal export facility at Longview, WA?

Under what rainfall or other environmental conditions (such as rain combined with high winds at warmer ambient temperatures) is MinTopper S+0150 lost into the environment?

Would MinTopper S+0150 be used on the return journey to the mines? Significant coal dust has been shown to be lost from "empty" boxcars on the return journey.

Please include these concerns in the scope of the EIS for the proposed Millennium Bulk Terminal coal export facility at Longview, WA.

Thank-you,

Janet Alderton
Deer Harbor, WA