



Catarina Owen <srrb.catarina.owen@gmail.com>

FW: SRRB question fire retardant

Jeff Walker <Jeff_Walker@gov.nt.ca>
To: Catarina Owen <srrb.catarina.owen@gmail.com>

Tue, Feb 27, 2024 at 6:09 PM

Hi Catarina,

For the PLS Record here is the Response from ECC on Fire Retardant as requested by the SRRB. If members have further questions let me know.

Mársı | Kinanāskomitin | Thank you | Merci | Hąj' | Quana | Qujannamiik | Quyanainni | Máhsı | Máhsı | Mahsi

Mr. Jeffrey L. Walker

Pronouns: He/Him/His

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From: Duane Sinclair <Duane_Sinclair@gov.nt.ca>
Sent: Tuesday, February 27, 2024 3:06 PM
To: Jeff Walker <Jeff_Walker@gov.nt.ca>
Cc: Richard D. Olsen <Richard_Olsen@gov.nt.ca>; Shawn Maxwell <Shawn_Maxwell@gov.nt.ca>; Scott Atigikyoak <Scott_Atigikyoak@gov.nt.ca>; Jules Fournel <Jules_Fournel@gov.nt.ca>; Ernie Francis <Ernie_Francis@gov.nt.ca>; Angel Simon <Angel_Simon@gov.nt.ca>; Toby Halle <Toby_Halle@gov.nt.ca>; Jason Currie <Jason_Currie@gov.nt.ca>; Brent Starling <Brent_Starling@gov.nt.ca>; Amber Lee Simpson <AmberLee_Simpson@gov.nt.ca>; Westly Steed <Westly_Steed@gov.nt.ca>; Matthew Lavoie <Matthew_Lavoie@gov.nt.ca>; Mike Westwick

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Subject: RE: SRRB question fire retardant

Good Afternoon Jeff,

NT purchases long term and short term fire retardants from Perimeter Solutions Canada. NT only uses one type of liquid concentrate fire retardant product called LC95A-MV (medium viscosity) used by Land Based Airtankers, which in NT's case is the Lockheed Electra (volume of 3,000 gallons of mixed product per drop) Airtanker or from the Air Tractor 802A FireBoss (reduced volume is down to 300 gallons of mixed product per drop) Airtanker aircraft.

Long term fire retardant product LC95AMV (SDS attached) is has an approved mix ratio of 5.5:1 gallon of water. Retardant products listed on the approved Canadian CIFFC Quality Products List (QPL document is attached) of approved retardant products that are evaluated, qualified, and approved for use only at the specified mix ratio. To be on the QPL list, it is normally a 2 year process to go through the rigorous product testing by the United States Forest Service (USFS) to be approved on fire retardants QPL list and at a cost of \$2M to undertake.

- Fire retardants are fully qualified by the USDA Forest Service under specification 5100-304c and are approved under the Canadian Interagency Forest Fire Center's (CIFFC) Quality Products List (QPL) of approved long term fire retardants.
- Fire retardant product used in NWT primarily consists of ammonium polyphosphates, which are also used in many agricultural fertilizers and are considered environmentally friendly and safe for use.
- While not considered an environmental threat, every effort is made to avoid having fire retardants dropped from Airtanker aircraft into water bodies.
- Fire retardants are liquid concentrates that when applied near or into a water body have been shown to increase stream water ammonium, phosphate, and nitrate concentrations. These increases are usually short-lived.
- The mixture of fire retardant used in the NWT results in each drop consisting of 82% or higher of water.

NT also uses one type of short-term (class A) fire retardant product used by Skimmer Airtankers, which is called WD881C (C=cold water), which in NT's case is either the FireBoss or CL-215/CL-215T/CL-415 Airtanker aircraft types. The surfactants in the WD881C (SDS attached) significantly reduce water's surface tension and, when mixed with air, create a superior foam blanket that surrounds fuels with a thick foam blanket. This creates a barrier between the fuel and the fire, knocking down the fire faster than water alone, and allowing fire fighters to see the areas of application.

As far as details on where airtanker retardant drops have been made in Sahtu, we do not have those details from mission summaries as its only a GPS location of the fire. Not every wildfire in the Sahtu has airtanker drops made on them.

What are the health risks of aerial fire retardants?

- Aerial fire retardants do not pose a significant risk to your health.
- Aerial fire retardants are not known to be carcinogens (do not cause cancer) and do not contain heavy metals.
- None of the raw materials used in the production of fire retardant are listed on the Canadian Toxic Substances list.
- Aerial fire retardants are not known or suspect to be a risk to pregnant or breastfeeding women.
- Aerial fire retardants may cause skin or eye irritation with prolonged contact.

What are the environmental risks of aerial fire retardants?

- Fire retardants have minor effects of the environment.
- Fertilizer-like components may lead to growth of algae (eutrophication) in watersheds if applied nearby (pilots do their very best to avoid applying retardants near waterways).
- The growth of certain types of plants may be inhibited until the retardant washes away aerial fire retardants on your property.

How do I know if my property has aerial fire retardant on it?

- Fire retardants are usually red in colour (though red colour breaks down when exposed to sunlight). Look for red coatings or liquids that are unusual for your property.
- Contaminated water may have an unusually salty taste or smell terrible.

How should I remove or dispose of aerial fire retardants on my property?

- Fire retardants are water-soluble and able to be washed off with little effort prior to drying. Once dried, they may form a film that tends to hold to surfaces. To remove from surfaces, you may need to use some scrubbing or power washing. A mild soap/surfactant-containing product can assist in removal. Wear eye protection and gloves while washing fire retardants away to avoid skin irritation.
- Dispose of garden produce and drinking water that has been contaminated.
- Avoid the harvest of country foods for consumption (i.e., berries, mushrooms, or herbs) that have been contaminated.
- Thoroughly rinse and clean any cisterns or drinking water sources to remove fire retardants (it is important to remove precipitants on tank bottoms).
- Thoroughly rinse and clean surfaces that drain into drinking water sources as well.
- Clean sand boxes, outdoor toys, and pools where children might inadvertently ingest residual fire retardant through hand-to-mouth contact and play.

This information below was found from the USFS - https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3851595.pdf

When retardant lands on structures:

- Wash retardant off as soon as possible. Retardant solutions are also thickened so that the liquid will accumulate on the fuel rather than falling past the fuel onto the soil.
- Retardant solutions will generally be easy to remove from smooth surfaces. Use of a garden hose to wet the surface followed by scrubbing would be expected to clean the surface. If the retardant solution has dried and is present for several days in the hot sunshine some discoloration could result.
- Some products may discolor metal. This can arise either by corroding or cleansing the surface of metal oxides that form over a period of time subjected to weather. Corrosion generally occurs over a prolonged period. Removal of oxide films can be rather quick. Unless removed from painted surfaces before the retardant dries, it is possible that some fading may occur.
- The red color of retardants is due to the use of red iron oxide (rust) to make the retardant drop more visible to the pilots. These highly colored, fine particles can be very stubborn to remove from rough or porous surfaces such as stone and rock. Use clean-up procedures that do not have a tendency to drive the color pigment deeper into the rough, uneven surfaces. The use of high-pressure power washers is not advised.

- Dampen a stained surface with water and scrub with a soft-bristled brush. Dampen the brush and using some borax cleanser may prove to be effective. Cleaners containing enzymes have also been successful in more rapidly reducing the stickiness of the thickener in the retardant. • Restrict water use to prevent forming standing puddles, which may be attractive to pets and animals or dilute puddles that form with copious amounts of water.
- Avoid leaving standing puddles of water by using absorbent materials such as sand, soil, or other materials.

I hope this helps you. I have included all TDO's, Regional Managers, and Forest Technicians for their information and for future reference as well.

Thanks,

Duane

From: Richard D. Olsen <Richard_Olsen@gov.nt.ca>
Sent: Tuesday, February 27, 2024 12:02 PM
To: Duane Sinclair <Duane_Sinclair@gov.nt.ca>
Subject: FW: SRRB question fire retardant

Would you be able to answer this for Jeff and the Sahtu folks?

Not sure we have the details of all drops in the Sahtu though?

Thanks,

Rick

From: Jeff Walker <Jeff_Walker@gov.nt.ca>
Sent: Thursday, February 22, 2024 12:35 PM
To: Richard D. Olsen <Richard_Olsen@gov.nt.ca>
Subject: SRRB question fire retardant

Rick,

SRRB asked to get the specifics on chemical make up of the various types of fire retardant used in the NWT over the years since tanker operations started.

They also asked for details on where drops have been made in Sahtu.

The MSDS sheets for the different types and brands of retardants should be available on file at FMD.





As for where drops have been made in the region that question would be different to provide locations for.

Can FMD provide details about the various retardants used to the SRRB as a written response for the public record.

Jeff

Sent with BlackBerry Work
(www.blackberry.com)

4 attachments

-  **2021-1005_CIFFC Quality Products List (QPL) .pdf**
121K
-  **Phos-Chek C-LC95-Product Information-.pdf**
629K
-  **Perimeter Solutions Canada's SDS PHOS-CHEK-LC95A-PHOS-CHEK-LC95A-MV.pdf**
599K
-  **Perimeter Solutions Canada PHOS-CHEK WD881 Class A Foam Safety Data Sheet.pdf**
615K