

SEHSC's Frequently Asked Questions

Government of Canada Chemical Management Plan D₄ and D₅ Screening Assessments

Frequently Asked Questions

What are D₄ and D₅?

D₄ (cyclotetrasiloxane) and D₅ (cyclopentasiloxane) are part of a family of chemical compounds derived from the natural element silicon. These three silicones are used as ingredients in personal care and industrial products. These extensively studied materials are an important part of many of the products we use and enjoy every day.

What types of consumer products are made with these materials?

D₄ and D₅ are ingredients in a wide variety of consumer and industrial products. For example, a number of personal care products utilize these materials to facilitate more efficient application, engender a more luxuriant feel, and produce better texture. Household cleaners utilize these materials to achieve a number of beneficial characteristics including more effective cleaning ability and aesthetic appeal. Consumers have safely enjoyed the benefits of products made with these materials for more than 50 years.

Are personal care or household cleaning products made with D₄ and D₅ safe for everyday use?

Yes. These materials are some of the most studied in the world. Extensive research and decades of real world use ensures consumers that D₄ and D₅ as they are commonly used in consumer products, are safe when used in accordance with accepted health and safety principles.

Should I be concerned about exposure to these materials?

No. More than 130 studies have been performed on the potential health and environmental impacts of D₄ and D₅. The studies show that D₄ and D₅ do not pose an undue risk to the environment and that they are safe for use in appropriate cosmetic, industrial, and consumer product applications when used in accordance with accepted health and safety principles. The Canadian Minister of Health has stated that D₄ and D₅ do not pose a risk to human health.

Are these materials found in the environment?

The levels at which these materials are found the environment will not impact human health, wildlife or the environment. To date, environmental monitoring studies confirm that these materials are found at low concentrations, particularly as you move away from urban areas. In places such as areas of Lake Ontario, levels are non-detectable. Ultimately, most of the D₄ and D₅ that enters the environment will evaporate or break down into some of earth's most common components – sand, water, and carbon dioxide.

In January 2009 the Canadian Minister of Environment suggested these materials may potentially be harmful to the environment, why?

The Minister of Environment, as part of its ongoing Chemicals Management Plan, has conducted screening reviews for a number of materials and recommended listing D₄ and D₅ as possibly warranting regulatory measures. No action has been taken based on this recommendation. If the recommendation is adopted, the Canadian Government will factor in soon to be completed scientific studies further examining how the materials actually behave in the environment. 50 years of real life applications, supported by extensive laboratory study and environmental monitoring, demonstrate that these materials are safe for the environment and action is not needed.

What was the basis for the minister of Environment's recommendation?

The Minister of Environment relied primarily on an assessment methodology that does not fully consider the ways these materials break down and behave in the environment. The available data indicate that D₄ and D₅ should not harm the environment at the levels found.

Can't products be made without D₄ or D₅?

D₄ and D₅ have a unique chemistry that is part of what makes them such helpful ingredients for so many different kinds of consumer and industrial products. They enhance the quality, reliability and function of products in a variety of ways. They make final products stronger, more durable, more water repellant or water-absorbing.

How do I find out if one of these ingredients is in a product I'm using?

Personal care and household products regulated by Health Canada carry varying label information. Common names include cyclotetrasiloxane (D₄) and cyclopentasiloxane (D₅). All personal care and household products must be labeled in accordance with Health Canada labeling requirements.

Where can I find more information about D₄ and D₅?

For more information on the safe use and benefits of these materials, please go to www.sehsc.com.