

## Submission

November 30, 2011

**To:** Bernard Madé, Director, Chemical Production Division, Environment Canada

**c.c.** Alex Cavadias, Environmental Stewardship Branch, Environment Canada

**From:** Canadian Environmental Law Association and Chemicals Sensitivities Manitoba

**Re: *Response to Information Session held October 26, 2011 on Final Notice for Requiring Pollution Prevention Plans for Cyclotetrasiloxane, octamethyl- (Siloxane D4)***

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The Canadian Environmental Law Association (CELA) and Chemical Sensitivities Manitoba (CSM) thank Environment Canada for the opportunity to participate in the information session 'Proposed Notice Requiring the Preparation and the Implementation of Pollution Prevention Plans in Respect of Cyclotetrasiloxane, octamethyl- (Siloxane D4) in Industrial Effluents', held in Toronto on October 26, 2011. CELA and CSM submitted its comments to the Proposed Pollution Prevention Notice for D4 for Industrial Effluent as posted in *Canada Gazette, Part 1, Notices and Regulations, Volume 145, No. 3, January 15, 2011.*<sup>1</sup>

Please accept the following comments on selected materials presented by EC staff at the meeting including revisions to the proposed Notice for the Pollution Prevention Plans for D4 in Industrial Effluents (P2D4). We welcome the opportunity to respond to any questions the department may have on the comments provided below.

Our general concerns expressed with the scope and purpose of the Notice for Pollution Prevention Plans for D4 expressed in our original submission to the government have not been substantially addressed in the context of the proposed changes described in the information session. In particular, we want to highlight that the Notice does not include an overall goal to reduce the quantity of D4 used by facilities and the proposed monitoring and surveillance regimes for D4 in industrial effluents is insufficiently robust in terms of frequency and timing of sampling.

Please note that many of the comments below were voiced at the information session. We are not providing extensive commentary to each presentation due to the timeframe outlined for the public input to the final Notice for P2D4.

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<sup>1</sup> Cyclotetrasiloxane, octamethyl- (siloxane D4) proposed Notice for Pollution Prevention Plans for industrial effluent: Responding to *Canada Gazette, Part I, Notices and Regulations, Vol. 145, No. 3 — January 15, 2011.* March 14, 2011. Accessed at [www.cela.ca/sites/cela.ca/files/781-D4%20Proposed%20Notice%20P2%20plans.pdf](http://www.cela.ca/sites/cela.ca/files/781-D4%20Proposed%20Notice%20P2%20plans.pdf)

## **Presentation: Proposed Risk Management Approach – Siloxane D4**

**(Information session: P2D4 – October 26, 2011)**

**Comments:** The D4 concentration data for the 2010 summer sampling of D4 for (May – October 2011, 11 sites) and the 2010 – 2011 winter sampling (November – March, 12 sites) were represented as ranges. While we do not expect data that would indicate the exact location of the sites, the data should have been presented in a manner that allows stakeholders to assess the collected data in a meaningful way.

For example, the D4 concentration data for the 2010 industrial sampling (October – December 2010, 6 sites and the 2011 industrial sampling (July – September 2011, 5 sites) had very wide ranges. In this dataset, one facility with a high level of D4 in the effluent is of significant concern. While substantial efforts may be directed to assess what factors may be contributing to this high concentration of D4, there was no discussion to focus on reducing the use of D4 in the industrial process as a key element towards reducing D4 in the effluent.

**Recommendation: Improve the presentation of monitoring data for D4 effluent levels in a meaningful format so that the data can be utilized by decision makers and the public, in order to assess the effectiveness of control measures applied by facilities that are being monitored.**

**Recommendation: D4 effluent data should include ranges for frequency and concentration as well as quantity of D4 released by weight.**

### **Final Draft Notice for the Pollution Prevention Plans for D4 in Industrial Effluent**

**Comment:** Environmental Canada did not provide participants an opportunity to review slides that were relevant to the proposed changes to the final draft Notice for P2 D4. An advance copy of the final draft Notice for the Pollution Prevention Plans for D4 in Industrial Effluent would have provided the time necessary for participants to prepare informed responses to the proposal. This detracted from the presentation as there was a lack of background information for significant proposed changes. For some changes, participants requested clarification relating to the proposed changes. The session did not allow for a productive dialogue between stakeholders and EC staff that would have otherwise focused on better understanding the rationale and acceptability of the proposed changes as they pertain to the protection of the environment. It was not possible to determine if the proposed changes would encourage facilities to reduce their overall use of D4 in their production processes.

**Recommendation: To facilitate productive, relevant and meaningful discussions at an information session, documents should be provided in advance of the**

meeting. Where substantial changes are made to elements of a proposed approach, the government should highlight or emphasize where this information is located. The rationale for the changes should be made available prior to the meeting.

- **Section 1: Definitions**

**“Final discharge point”:** is an identifiable discharge point beyond which the industrial facility owner or operator no longer exercises control over quality of the effluent.

**Comment:** While the government may not be currently aware of any facility that is not using a waste water treatment facility for the effluent of facilities using D4, as a precautionary measure, the definition for the ‘final discharge point’ definition should be expanded. It should also include discharge effluents that may or may not have been processed in a waste water treatment plant before it is considered an identifiable discharge point beyond which the industrial facility, owner or operator no longer exercises control over quality of the effluent.

**Recommendation:** The definition for “final discharge point” should be expanded to include discharge effluents that may or may not have been processed through a waste water treatment plant.

- **Section 2: Person required to prepare and implement P2 plans**

**Subsection 1(a):** Manufactures or uses D4 or a mixture containing D4 where the total quantity of D4 manufactured or used is equal or greater than 100 kg per calendar year.

**Comment:** The volume threshold of 100 kg has not been changed from the draft notice. Considering that D4 can be used in relatively small quantities for its desired properties, the trigger volume of 100 kg per calendar year is too high. Our organizations noted their concern with the 100 kg volume trigger in our original joint submission. We recommended that all facilities should be required to prepare P2 plans and the volume trigger should be removed.

The government has not indicated how many facilities in Canada would be required to prepare and implement P2 plans based on the proposed level of 100 kg per calendar year. At the same time, it is also unknown from year to year the number of facilities that fall below the 100 kg level.

**Recommendation:** The public should be provided information indicating the number of facilities that will be required to meet the Notice of P2 D4 as well as the number of facilities that do not meet the requirements of the Notice.

- **Subsection 3(a): The Notice does not apply to any person who owns or operates an industrial facility that solely uses a mixture that contains D4 in a concentration of less than 1%.**

**Comments:** EC has not provided the rationale and transparency regarding the proposed limit of 1% for a mixture containing D4. However, communication with EC indicated that when the concentration of D4 is less than 1%, it may not appear on the list of ingredients on a Material Safety Data Sheet. This may not always be the case. There is concern that such a mixture could be frequently used in large quantities but its use would not be eligible for a Pollution Plan. It is not clear if this scenario has been taken under consideration.

**Recommendation: To promote transparency and accountability, the government should provide the rationale used to establish the 1% concentration limit for D4 in a mixture.**

**Recommendation: We recommend that mixtures containing any level of D4 should be included in the notice requiring P2 D4.**

**Recommendation: Additional consideration should be given to assess the impacts of effluent concentration of D4 from mixtures containing any level of D4.**

- **Section 4: Factors to consider when preparing a plan**

**Subsection 2: The object of the Notice is to obtain an 80% total emission reduction of D4 released in the aquatic environment within 4 years of the date of the publication of the Notice.**

**Comments:** There are two significant issues with this section:

- 1) The focus of this notice is on the reduction of total emissions rather than reduction in use of D4 at its source.
- 2) This subsection is misleading in that it implies that both industrial and consumer product releases to the aquatic environment should be reduced by 80% within a period of 4 years, which is actually not the case. Furthermore, EC has not been transparent in providing the rationale for proposing an 80% reduction and the selection of the 4 years timeframe from the date of the publication of the Notice. The proposed timeframe is more confusing since the government noted that some facilities have already started on the reduction of D4 into the aquatic environment. In this situation, the government should have been establishing higher levels of discharge reduction and use reduction. Currently, the proposal in the final Notice has focused primarily on control measures for D4 effluent rather than in the reduction of use of D4.

**Recommendation:** The proposed Final Notice should include a goal for reduction of D4 use for D4 in industrial applications, not just provide a proposed reduction target of 80% at end-of-pipe or control measures.

**Recommendation:** The Final Notice should provide additional analysis to emphasize how the 80% emissions reductions for D4 could be achieved through reductions in the use of D4.

**Recommendation:** CELA and CSM recommend that this subsection be revised to state that the proposed overall reduction in release of D4 to the aquatic environment from industrial facilities and not consumer products.

**Recommendation:** EC should provide the supporting data, in advance of meetings, to justify the adequacy of an 80% overall reduction of D4 released from industrial sources to the aquatic environment.

**Recommendation:** The time frame for the 80% reduction of D4 from industrial sources to the aquatic environment should be decreased from the proposed 4 years, particularly since EC has identified that some facilities have already begun to reduce releases of D4.

- **Subsection 3 (a):** Reduction target for each facility to achieve and maintain a total D4 concentration in effluent at final discharge point(s) of the facility, through methods other than dilution, that is less than or equal to 17.3 µg/L; or
- **Subsection 3(b):** Reduction target for each facility to achieve and maintain a total quantity of D4 released in industrial effluent equal or below 3kg/year.

**Comments:** The proposal to limit releases “equal or below 3 kg/year” and eliminate the 2.3 µg/L concentration limits for facilities that do not have wastewater treatment processes represents a substantial change in the Final Notice. It has assumed that these new reduction targets are relevant for all facilities – with or without waste water treatment plants. Also, EC has not provided the necessary rationale for the revised reduction target of 3 kg/year. It would be challenging to determine how many facilities may use this level as their preferred approach under this target. EC staff noted that the levels are set appropriately so as to minimize the impacts to the aquatic environment. In particular, the impacts to the environment have not been discussed in situations where one facility could potentially discharge 3 kg at one time. There is uncertainty as to how this type of scenario would be addressed in the proposed framework or the approach to be taken by EC in validating that the facility is complying with these limits.

In another scenario, should there be several facilities located in close vicinity to each other with an approach to meet the 3 kg/year limit, there is concern as to the effects of

the D4 discharge from these facilities to the aquatic environment. These types of scenarios have not been discussed.

The original proposal to establish effluent limits of 17.3 µg/L (with waste water treatment plants) or 2.3 µg/L (without waste water treatment plants), may have created some challenges for industry to meet the required limits. The government did not articulate its rationale for choosing the higher reduction target of 17.3 µg/L as opposed to the lower reduction target of 2.3 µg/L. With the measured levels of D4 in the aquatic environment lower than expected and some facilities actively attempting to reduce the concentration of D4 in their effluent to the aquatic environment, it is uncertain if these factors contributed to the choice for the reduction target of 17.3 µg/L. Due to a lack of information provided, it would be difficult to assess if this reduction target would result in prevention measures that would require industry to reduce their use of D4.

At this point in the process, CELA and CSM cannot support the new proposed target reduction of 3 kg/year or the use of the 17.3 µg/L effluent concentration without adequate evidence that these measures will be protective of the aquatic environment.

**Recommendation: CELA and CSM urge the government to provide clear and transparent criteria in establishing overall reduction targets for D4 and how the proposed effluent concentration limits or target discharge limits will contribute to achieving the overall reduction in emissions for D4 to the aquatic environment.**

- **Subsection 4(b): Samples are collected and analyzed at a minimum of four times per year.**

**Comments:** The removal of a minimal time interval between sampling is understood in situations when a facility may use D4 for a short period of time (weeks). However, clarification is required for those circumstances as to the minimum number of samples for collection and analysis. In general, a minimum of 4 samples for the collection and analysis per year is considered significantly inadequate particularly if there is frequent use of D4 over an entire year. The monitoring data (frequency and timing) collected and presented by EC demonstrate that a substantial monitoring regime may be warranted.

While it is important to monitor effluent discharges from facilities releasing D4 during normal operations, it is essential to monitor effluent discharge during other operating times in order to assess the magnitude of change in operations and the potential impacts to the concentration of effluent discharge. This information may provide valuable input for facilities in preparing contingency plans that will protect workers, the surrounding environment and community.

**Recommendation: The proposed monitoring regime is inadequate and should be substantially elevated in frequency for each facility.**

**Recommendation:** The monitoring regime should note that a minimum of 4 samples should be required for monitoring D4 regardless of the time period in which is it used in a facility.

**Recommendation:** We urge the government to significantly expand the sampling regime, particularly for the continuous process to accommodate for periods of increased production as well as seasonal and daily variations in the use of D4.

- **Subsection 6:** The use of alternatives to D4 should be considered to reduce or minimize environmental and human risks. The chosen alternatives should not have, through their degradation, the potential to produce D4.

**Comments:** Recognizing that an alternative that could degrade to D4 would not be an appropriate choice, alternatives to D4 should be considered acceptable only when they cause no harm to the environment or human health. Alternatives that may cause different but still damaging effects to the environment or human health are not considered acceptable.

**Recommendation:** The consideration of all alternatives to D4 should not be included in section titled, “factors to consider” but should be a mandatory requirement for P2 D4.

**Recommendation:** The identification for alternatives for D4 should include only those substances and processes that do not have the potential to degrade to D4 as well as all alternatives that do not cause harm to human health or the environment.

Thank you for your consideration to our comments and recommendations.

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