

Chlorinated Paraffins

New Actions in Canada Call for Active Industry Participation

by Tomas Kelley, Robert Fensterheim and Andrew Jaques

Chlorinated paraffins (CPs) are an important class of chlorinated straight-chained hydrocarbons in the carbon range of C₁₀ to C₃₀₊. CPs are typically subdivided into three categories based on their carbon chain lengths:

Short-chain	C ₁₀₋₁₃
Mid-chain	C ₁₄₋₁₇
Long-chain	C ₁₈₋₃₀₊

These compounds have many cost-effective uses — including as extreme pressure additives in lubricants and metalworking fluids. Mid-chain chlorinated paraffins (MCCPs) represent the largest production and use category in North America; long-chain chlorinated paraffins (LCCPs) are the second-most common, and short-chain chlorinated paraffins (SCCPs) account for the rest.

Because CPs have been used in industrial products since the 1930s, they have been evaluated by various regulatory bodies around the world, including in the U.S., Canada and the European Union (EU), and by the United Nations Environment Program (UNEP).

The U.S. Environmental Protection Agency (EPA) conducted a comprehensive review of chlorinated paraffins in the mid- to late-1990s. EPA focused its review on SCCPs, given that this class was determined to have the greatest potential to present a risk of environmental effects.

Following its review, EPA concluded there was no need to impose any

restrictions on the manufacture, processing or use of any chain length CP, given established handling and waste management practices. In order to track future environmental releases, SCCPs were added to the reporting requirements of the Toxic Release Inventory as part of the broader “polychlorinated alkane” category. CPs remain excluded from U.S. federal hazardous waste regulations, although in some regions — such as the state of Washington — CPs in waste oils must be managed as “hazardous waste.”

The EU arrived at a different decision regarding the use of SCCPs in metalworking fluids (MWF). The EU’s evaluation, conducted under its former Existing Substance Regulation, relied on a series of worst-case assumptions, which led the EU to conclude that SCCP use in metalworking fluids should be restricted. The EU was nearing completion of a risk assessment on MCCPs, but it was not finalized due to the adoption of the new European REACH regulation. As a result of its previous decisions, though, the EU added SCCPs to the list of chemicals that must be authorized under REACH.

Canadian Assessment and Proposed Actions for Chlorinated Paraffins

Canada began working on CPs in the early 1990s, pursuant to the Canadian Environment Protection Act (CEPA). In 1993, Canada proposed that SCCPs be placed on the list of CEPA toxic substances, based on the assumption

that high levels of exposure could cause health concerns. Over the intervening years, Canada continued to evaluate CPs, due primarily to concerns about their environmental toxicity and fate profile. In 2005, Canada released a draft risk assessment that included SCCPs as well as MCCPs and LCCPs.

The Chlorinated Paraffins Industry Association (CPIA) provided extensive comments on this draft risk assessment, highlighting numerous significant deficiencies. CPIA further encouraged Canada to focus on SCCPs, which have been recognized as presenting environmental concerns if not properly managed.

In August 2008, Environment Canada (EC) — the counterpart to the U.S. EPA — finalized its risk assessment. The final assessment did little to address the significant comments raised on the previous draft. Based on its final assessment, in September 2008 EC proposed to add all CPs to the CEPA Toxic list and to designate CPs up to 20 carbons to Canada’s “Virtual Elimination” list. In response, CPIA filed a Notice of Objection, contending that there is no basis for these proposed actions and requesting a formal reassessment.

On Feb. 20, ILMA also filed a letter objecting to Canada’s actions, noting significant technical concerns with the Risk Assessment and the fact that in many cases adequate alternatives do not exist for metalworking fluids (*see sidebar on page 23*). These

continued on page 22

technical objections are especially important, since Canada is considering a “prohibition regulation” that could impact all uses of CPs.

Canada’s Actions Have Potential for Unnecessary Product Deselection

Canada’s Toxic Substances Management Policy offers several different approaches to developing risk management plans for toxic substances. CPIA has long argued (see January 2002 *Compoundings* article), even before Canada proposed to regulate CPs, that the most straightforward and environmentally beneficial approach to managing CPs is through a life-cycle management program. Such a program would ensure that CP-containing products are properly managed during initial production, formulation, use and disposal. CPIA continues to believe such an approach presents a practical, workable and ultimately preferable method of addressing CPs and metalworking fluids in general.

Regrettably, Canada is considering a less thoughtful but more expedient approach — i.e., a “prohibition regulation” that would essentially ban

Canada’s Proposed Timeline	
Action	Date
Consult on Risk Management Approach	Fall 2008
Initiate Development of Proposed Instrument(s)	Fall 2008
Consult on Proposed Instrument(s)	Winter 2009
Publication on Proposed Instruments in Canada Gazette I	Summer 2010
Publication on Proposed Instruments in Canada Gazette II	Winter 2012

the use of CPs in products, except where acceptable alternatives do not exist.

The specific risk management instruments will not be adopted for several years, and there is significant opportunity for the metalworking industry, as a key stakeholder, to help shape the program. Canada’s proposed Risk Management Approach (RMA) discusses different pathways to minimize the releases of CPs within the metalworking industry, including the adoption of best management practices by end-users of metalworking fluids. Further, Canada has made clear that it will not adopt a requirement to use an alternative if there is information showing that the alternative does not work as well or may present unacceptable economic or other concerns.

Canada likely will make a final CEPA Toxic determination on CPs in early 2009. Once a substance is declared CEPA Toxic, EC has two years to issue a proposed risk management plan and then another 18 months to finalize its risk management instruments. These instruments could range from recommending handling and waste management practices to use restrictions. Enforcement dates for the final implementation of the risk management instruments could be years beyond the currently anticipated date of publication in 2012.

U.K. Concludes No Viable Alternative in Metalworking Fluids

As part of the EU risk assessment process, the United Kingdom retained a contractor to evaluate substitutes for MCCPs. The final assessment concluded that, for metalworking fluids, “no single substance could offer the same performance and cost effectiveness achieved with MCCPs across the full spectrum of its application.” The U.K. assessment looked at a variety of alternatives. While some substitutes worked in some applications, both performance (staining, temperature limitations, etc.) and health and environmental concerns were identified with all the alternatives evaluated. Furthermore, the U.K. noted that

“... no single substance could offer the same performance and cost effectiveness achieved with MCCPs ...”

U.K. Government, December 2008 Assessment

Chlorinated Paraffins

when proper workplace hygiene and environmental waste management practices are in place for MCCPs, the risks should be below a level of concern.

CPIA Seeking to Engage Chlorinated Paraffin Users

CPIA is encouraging the downstream metalworking industry to become actively engaged in responding to Canada's proposals on CPs and to advocate for the adoption of reasonable risk management approaches that will enable the continued safe use of chlorinated paraffins. For additional information, contact CPIA at www.regnet.com/cpia. 💧



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In response to Environment Canada's proposed actions on Chlorinated Paraffins (CPs) discussed in the accompanying article, ILMA submitted comments on behalf of members in February. ILMA's comments included:

- ★ ILMA supports comments submitted by the Chlorinated Paraffins Industry Association (CPIA) stating that, before Canada can add CPs to the list of toxic substances in Schedule 1 of the Canadian Environmental Protection Act, the agency should convene a board of review.
- ★ ILMA agrees with CPIA that an objective review is necessary, and ILMA added that "it does not appear that Canada has adequately shown that CPs pose a danger to human health or that they are having an effect on the environment."
- ★ Environment Canada (EC) stated it is considering regulations to prohibit the "manufacture, use, import, sale and offer for sale of CPs." ILMA noted that the proposed action seems "inappropriate and unnecessarily damaging to Canadian businesses."
- ★ ILMA said that it is prepared to work with EC, ILMA Members with Canadian facilities, CPIA and others to develop "a reasonable, cost-effective risk management approach for lubricant products containing CPs," and that "such an approach will provide environmental benefits beyond simply replacing CPs with other additives."

ILMA's letter is available on ILMA's website. Go to www.ilma.org, and click on "Advocacy," then select "ILMA Letters" from the menu. There, you'll also have access to other letters ILMA has submitted and received, including:

- ★ March 5, 2009: A letter sent to South Coast Air Quality Management District in which ILMA urged the adoption of Proposed Rule 1144 on Vanishing Oils and Rust Inhibitors, after a seven-month collaboration with the SCAQMD board to develop appropriate testing methods. Other letters submitted to the SCAQMD in 2008 and Jan. 2009, which explain ILMA's involvement with the testing methodology development, are also available.
- ★ March 5, 2009: A letter sent to Environmental Protection Agency in which ILMA urged extending the deadline for compliance with updated Spill Prevention, Control and Countermeasure regulations.
- ★ Feb. 1, 2009: A letter received from American Conference of Governmental Industrial Hygienists. ILMA's comments, submitted July 30, 2008 and also available on the site, were considered by the ACGIH and reflected in its ruling to drop metalworking fluids from its Notice of Intended Change of the Threshold Limit Value for mineral oil.
- ★ Plus, more than fifty letters since 2001, including comments on Base Oil Pricing, REACH, Re-Refining, UEIL and other topics and organizations that affect ILMA members. This is a great resource of information on how ILMA has helped members for years.

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