

MCCPs: Identifying Critical Uses and Why That Is So Important

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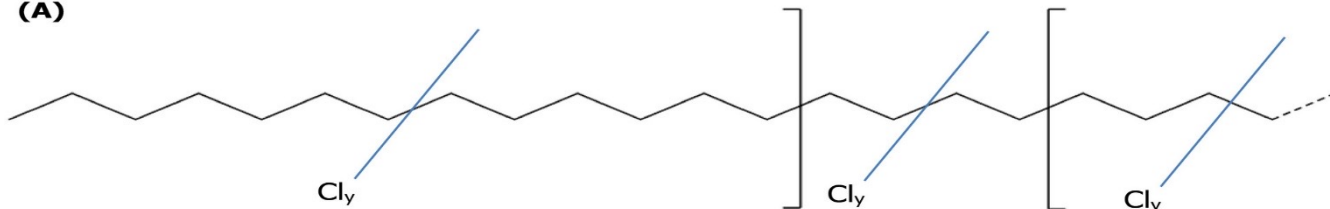
"The times, they are a changin'..." - Bob Dylan

MCCP Critical Uses: Outline

- Introduction
- Identifying Critical Uses
- Developing the narrative
- Building Case Histories
- Looking ahead

MCCP Critical Uses: Introduction

(A)

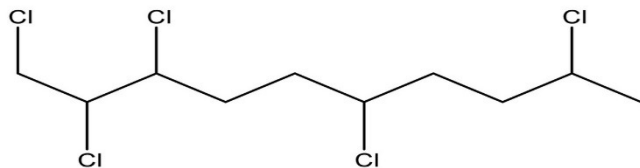


SCCPs
 $C_xH_{(2x-y+2)}Cl_y$, where
 $x=10-13$ and $y=1-13$

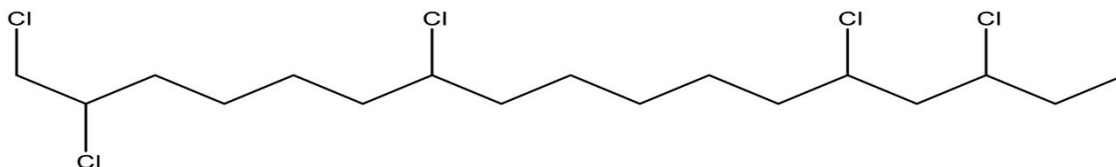
MCCPs
 $C_xH_{(2x-y+2)}Cl_y$, where
 $x=14-17$ and $y=1-17$

LCCPs
 $C_xH_{(2x-y+2)}Cl_y$, where
 $x \geq 18$ and $y=1-30$

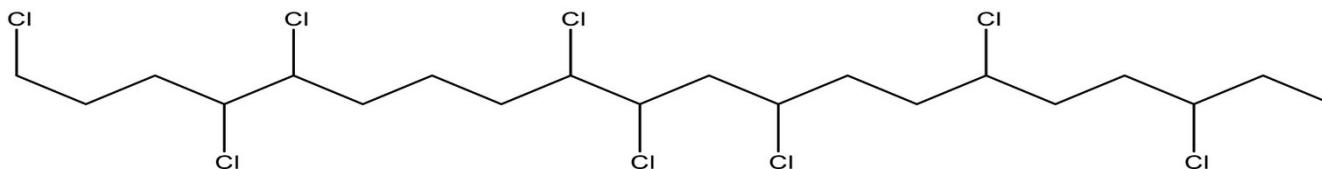
(B)



SCCP ($C_{10}H_{17}Cl_5$)



MCCP ($C_{17}H_{31}Cl_5$)



LCCP ($C_{20}H_{34}Cl_8$)

Identifying Critical Uses

- So, what is a “critical use?”
 - ILMA considers *critical use* to encompass a specific use for which lack of alternatives acceptable to the end user would result in significant market disruption, as well as where there are no technically or economically feasible alternatives or substitutes available to that end user from the standpoint of environment and/or human health...

Identifying Critical Uses

- So, what is a “critical use?”
 - ...From the Association’s perspective, the mere fact that an alternative may exist should not be the sole or limiting factor to determine whether a particular use is *critical*.
 - key words: **where no technically and economically feasible alternatives exist.**

MCCP Critical Uses

Metalworking Process	Non-Exclusive List of Resulting Products
Processing of stainless steel and high nickel into wire	Surgical staples and heart catheter devices for medical industry
Processing of stainless steel and high nickel into bars	Devices used to replace shoulders, hips, knees etc. for medical industry
Centerless grinding of heat resistant alloys, such as titanium	Parts for aerospace industry
Cold forming of titanium and stainless steel	Bolts, fasteners, blind rivet shafts, fuel lines, break lines, instrumentation systems, high-pressure conveying systems, and heat exchanger tubing for aerospace industry
Tapping of high nickel-containing alloys and stainless steel	Nuts for aerospace industry
Forming and fabricating of beryllium	Precision optics for aerospace industry
Drawing of brass shell casings	Ammunition shell casings for military and civilian use

Developing the Narrative

- Now is the time to develop the narrative as to *why* these are critical uses and what the industries/customers have *already done* and *will continue to do* to keep MCCP away from waterways
- We need/you need data to support the narrative

Developing the Narrative

- 2015: visited four southern CA facilities using MCCP-containing straight oil fluids to make Ti fasteners for DoD and the aerospace industry
- Observed QC aspects of production process: each and every fastener manufactured could be traced back to date/time manufactured
- Machine tools in use were older style but entirely adequate for these applications

Developing the Narrative

- Observation: no in-use straight oil, MCCP-containing Ti grinding fluid was discharged to or allowed to enter any sanitary sewer.
- Facilities were set up for “on site fluid reprocessing:” used MWF brought to an on-site recycling unit which removed swarf and to which additions were made to restore fluid to original specifications

Developing the Narrative

- Reprocessed MWF is reused
- Swarf (metal fines and grinding grit) is drained of spent MWF and landfilled
- MCCP-containing MWF/used oil removed from aqueous cleaning systems is recovered and blended for use in bunker fuels
- Any water waste generated is collected into reusable totes and sent off site to a waste-processing company

Developing the Narrative

- A great story, right?
- But, specific data wasn't collected:
 - Numbers of parts produced
 - Mass-balance calculations
 - Gallons fluid provided; gallons reprocessed
 - Gallons fluid recovered
 - Tons swarf landfilled
 - Gallons cleaning fluid used
 - Amount of fluid recovered and added to fuel

Developing the Narrative

- Are their issues in the way of gathering facts?
- Yes, for sure. But...
 - There are non-disclosure agreements
 - Provide data to ILMA Counsel who can mask and consolidate information to be (eventually) provided to the Agency

Looking Ahead: In the EU

Table 2: Proposed REACH Annex XVII entry (option B) ³

Designation of the substances, of the group of substances or of the mixture	Conditions of restriction
Linear chloroalkanes with the following molecular formulae: C ₁₄ H _{30-y} Cl _y where y = 3 to 11 C ₁₅ H _{32-y} Cl _y where y = 3 to 8 C ₁₆ H _{34-y} Cl _y where y = 3 to 8 C ₁₇ H _{36-y} Cl _y where y = 6 to 9	<ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> a. REMOVED b. Chloroalkanes listed in column 1 shall not be placed on the market in substances, in mixtures and in articles if their overall concentration in such substances, mixtures and articles is [equal to or greater than 0.1 % (w/w)]. <p>Paragraph 1 shall apply [2 years after entry into force of the restriction].</p> 2. REMOVED 3. Paragraph 1 shall not apply to articles already in use and second-hand articles which were in end-use in the Union before [date of entry into force]. 4. Paragraph 1 shall not apply to reference materials and standards for analytical purpose. 5. [Within three months after entry into force] of the restriction, the European Chemicals Agency shall

³ As reported in the coming sections, option A is a combination of RO4b and RO5.

Looking Ahead: In the EU

8. [By way of derogation, paragraph 1 shall not apply to substances if placed on the market for use as Extreme Pressure Additives in oil-based metalworking fluids - as defined in DIN 51385 -] [for 7 years after into force.

By way of derogation, the concentration limit set under paragraph 1 shall not apply to mixtures placed on the market as oil-based metal working fluids referred to in paragraph 8 - [for 7 years after the EIF].

Looking Ahead: In the US

- EPA next steps regarding MCCPs are not yet known
- But, getting ready for a possible proposed ban is extremely critical
- Time to act to develop narratives with facts for all of the identified critical uses is now.