

SCCPs

Draft Risk Profile May 2007

http://www.pops.int/documents/meetings/poprc/dprofile/drp/DraftRiskProfile_SCCP.pdf

Composition	SCCPs cover carbon chain lengths of 10 – 13 with 1 – 13 chlorine atoms. Production yields extremely complex mixtures, owing to the many possible positions for the chlorine atoms, and standard analytical methods do not permit their separation and identification. Thus the commercial mixture is proposed for listing.
Uses	SCCPs are used primarily in metalworking applications. Other uses include uses as flame retardants or plasticizers in PVC, paints, adhesives, sealants in buildings, PCB substitutes in gaskets, leather fat liquors, and flame retardants in rubber, car carpets, textiles, and other polymers. SCCPs used as flame retardants are added to rubber in a proportion of 1–10%.
Releases	Anthropogenic releases of CPs into the environment may occur during production, storage, transportation, industrial and consumer usage of CP-containing products, disposal and burning of waste, and land filling of products such as PVC, textiles, painted materials, paint cans and cutting oils.
Fate	SCCPs are not expected to degrade significantly by hydrolysis in water, and dated sediment cores indicate that they persist in sediment longer than 1 year. SCCPs have atmospheric half-lives ranging from 0.81 to 10.5 days, indicating that they are also relatively persistent in air. SCCPs have been detected in a diverse array of environmental samples (air, sediment, water, wastewater, fish and marine mammals) and in remote areas such as the Arctic (which is additional evidence of long range transport). Evidence for the bioaccumulation of SCCPs is further supported by the high concentrations of SCCPs measured in marine mammals and aquatic freshwater biota (e.g., beluga whales, ringed seals and various fish).
Effects	SCCPs can harm sensitive aquatic organisms at relatively low concentrations (i.e. below threshold criteria of 1 mg/L used to categorize substances on Canada's Domestic Substances List). SCCPs affect the liver, kidney and thyroid in rats including increased liver weight, altered liver enzymes, and enlarged thyroid. Rodent studies showed dose related increases in adenomas and carcinomas in the liver, thyroid, and kidney. There continues to be contention over the mechanisms of these tumors and whether they are relevant for human

	<p>health. SCCPs were classified as a group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). There are no data on fertility or developmental effects for humans.</p>
Exposure	<p>SCCPs have been found in breast milk from Inuit women in Northern Quebec in the UK. They have been measured in cow's milk and in butter from Denmark, Wales, Normandy, Bavaria, Ireland and southern and northern Italy. SCCPs have been measured in seabird eggs, Arctic char, cod, blue mussel, spart, redfish, herring, halibut, sardine, trout, dab, flounder, beluga whale, walrus, ringed seal, reindeer, and osprey. SCCPs were measured in air in several countries including Canada, the United Kingdom (U.K.) and Norway. SCCPs were detected in all eight sewage treatment plant final effluents sampled from southern Ontario, Canada. Total SCCPs (dissolved and particulate C₁₀₋₁₃) ranged from 59 to 448 ng/L. The highest concentrations were found in samples from treatment plants in industrialized areas, including Hamilton, St. Catharine's and Galt. SCCPs were detected in surface waters in Ontario and Manitoba, Canada. SCCPs were detected in sediments around the Great Lakes in Canada, Germany, Czech Republic and the United Kingdom. They have also been detected in Arctic sediment.</p>
Status	<p>In December 2006, the Parties to the UNECE POPs Protocol agreed that SCCPs should be considered as a POP as defined under the Protocol, and requested that the Task Force continue with the Track B reviews of the substances and explore management strategies for them. In 1995, OSPAR Commission for the Protection of Marine Environment of the North-East Atlantic adopted a decision on SCCPs (Decision 95/1). This established a ban on the use of SCCPs in all areas of application by the end of 1999 with exemptions for use of SCCPs in dam sealants and underground conveyor belts until 2004. Similar to OSPAR, the Baltic Marine Environment Protection Commission (HELCOM) has included SCCPs on their list of harmful substances. SCCPs have been identified as priority hazardous substances in the field of water policy under the Water Framework Directive (Directive 2000/60/EC of 23 October 2000) and are listed in the draft amendment of Directive 2000/60/EC, which defines water quality standards for European surface waters. Substances listed in this Directive will be subject to cessation or phasing out of discharges, emissions and losses with in an appropriate time table that shall not exceed 20 years (EC, 2005). The most important uses (metal working fluids and leather fat liquors) in the EU were restricted in directive 2002/45/EC. SCCP in plastics is a major use in Europe that was not covered by directive 2002/45/EC.</p>

Alternatives	Will be discussed in Annex F evaluation if SCCPs advance.