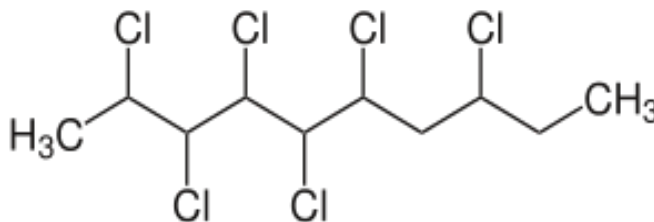


## Short-Chain Chlorinated Paraffins (SCCPs)



### Summary of Health Effects

Chlorinated paraffins may cause cancer, based on animal studies.

### How are SCCPs used?

Chlorinated paraffins are characterized by average carbon-chain length and average degree of chlorination. C<sub>10-13</sub> makes up short-chain, C<sub>14-19</sub> makes up medium-chain and C<sub>20-30</sub> makes up long chain paraffins.<sup>1</sup> SCCPs were used as metal working lubricants, plasticizers in flame retardant plastics, or as a flame-retardant additive to fabrics, electrical equipment, machining-fluids, adhesives, sealants, paints and rubber formulations.<sup>1</sup> In 2013, the Swedish Chemicals Agency detected SCCPs in the following children's products: soft heads, arms and legs on dolls, in leather trim clothing, inflatable plastic toys, nozzles on inflatable toys.<sup>2</sup> SCCPs were the most common substance found above limit values in a 2015 survey of European household products.<sup>3</sup> In 2017, the Stockholm Convention listed SCCPs as persistent organic pollutants (POPs) under Annex A permitted for use in transmission belts, rubber conveyor belts, leather, lubricant additives, tubes for outdoor decoration bulbs, paints, adhesives, metal processing, and plasticizers.<sup>4</sup> In 2012, the U.S. Environmental Protection Agency (EPA) restricted the manufacture and import of SCCPs in the U.S. In 2014, EPA issued a Significant New Use Rule which requires manufacturers (including importers) and processors of SCCP to notify EPA

at least 90 days before starting or resuming new uses.<sup>5</sup> In 2015, the European Union (EU) set a limit >0.15% weight SCCPs in products.<sup>6</sup> SCCPS are still produced in China.<sup>7-9</sup>

### Toxicity: What are its health effects?

The State of California classified chlorinated paraffins as carcinogens under Proposition 65.<sup>10</sup> The National Toxicology Program classified chlorinated paraffins as reasonably anticipated carcinogens based on liver, kidney, and thyroid tumors found in rodent studies.<sup>11</sup> The EU categorized SCCPs as category 2 "suspected to be carcinogenic" under the Global Harmonized Classification for Labeling (GHS)<sup>12</sup> and as a Substance of Very High Concern (SVHC) based on evidence of SCCPs persistent bioaccumulative and toxic (PBT) and very persistent very bioaccumulative nature.<sup>13</sup> The International Agency on Cancer classified SCCPs as possible human carcinogens based on evidence of increased incidence of tumors in mice and rats fed a 12 carbon-chain length SCCP. Increased incidence of alveolar-bronchiolar carcinomas in male rats, malignant lymphomas in male mice, and adrenal gland tumors of female rats was observed.<sup>1</sup>

### Exposure: How can a person come in contact with it?

A person may come in contact with SCCPs by eating contaminated food or drinks, inhaling contaminated air or dust, or from skin contact with products containing SCCPs.

SCCPs are on Washington State's PBT list.<sup>14</sup> SCCPs have been found globally in humans, wildlife, and the environment.<sup>15-17</sup> SCCPs have been detected in human tissues and breast milk.<sup>15</sup> SCCPs have been detected *post mortem*

in human liver, kidneys, and adipose tissue.<sup>13</sup> SCCPs have been detected in various food samples gathered in Asian countries.<sup>15</sup> SCCPs have been detected in aquatic mammals, fish, shellfish, and seabird eggs.<sup>17</sup>

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