



CHLORINATED PARAFFINS (SCCPs and MCCPs)

Other Names Chlorinated Paraffins, SCCP, MCCP, Chloroalkanes

CAS Number	Substance
85535-84-8	Short-chain Chlorinated Paraffins (SCCP) (C10-C13)
85535-85-9	Medium-chain Chlorinated Paraffins (MCCP) (C14-C17)

May Be Found In

- Plastics
- Rubber
- Adhesives
- Paints and lacquers
- Coatings
- Plasticizers
- Fat-liquoring agents
- Leather

Short-Chain Chlorinated Paraffins (SCCPs) are a mixture of chlorinated hydrocarbons with a chain length of 10 to 13 carbon atoms, and a chlorine content of 40-70%.

Medium-Chain Chlorinated Paraffins (MCCPs) are a mixture of chlorinated hydrocarbons with a chain length of 14 to 17 carbon atoms, and the same chlorine content range of 40-70%.

SCCPs are commonly used as flame retardants and plasticizers in plastics, as well as lubricants and coolants for metal forming operations.

Uses in the Supply Chain

Within the apparel and footwear industry, SCCPs and MCCPs may be used as a flame retardant or plasticizer in plastics, rubbers, inks, paints, adhesives, and surface coatings. They also may be found as impurities in fat-liquoring agents for leather production. Outside of apparel and footwear, these compounds may be used in metal operations as additives in lubricants or coolants used in cutting metal or metal forming.¹

Why SCCPs and MCCPs are Restricted

- Legislation in major markets around the world restricts the presence of SCCPs in finished products.
- Leading apparel and footwear brands have banned the use of SCCPs in production of their products.
- SCCPs are classified as a persistent organic pollutant and a very persistent and very bioaccumulative substance.
- SCCPs are toxic to aquatic organisms at low concentrations and may cause long-term adverse effects in the aquatic environment at certain exposure levels.
- Repeated exposure to SCCPs or MCCPs may cause skin dryness or cracking and eye irritation but overall are considered to have low toxicity to humans.
- MCCPs are expected to be persistent and bioaccumulative in the environment as well, based on their similar chemical and physical properties to SCCPs. They are considered “toxic” by some agencies and have been targeted for risk assessments by other agencies.
- Chemical hazard information for many chemicals can be found at the following external databases:
 - GESTIS Substance Database: [Here \(external link\)](#)
 - US National Library of Medicine: [Here \(external link\)](#)
 - US OSHA Occupational Chemical Database: [Here \(external link\)](#)

Sourcing Compliant Materials from Your Suppliers

- Contact your suppliers and explain that you require their manufactured materials to be compliant with the current AFIRM RSL limits.²



Chemical Information Sheet

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- Require suppliers to submit a confirmation of material compliance or a test report from a third-party laboratory.
- When materials are received, consider performing risk-based testing to ensure the current AFIRM RSL limits are met.
- Share this information sheet with your material suppliers so they have full visibility and understand your sourcing requirements.
- Pay special attention to the following:
 - Textiles and natural or synthetic leather with polymeric coatings or finishes, since SCCPs are common ingredients in coating and finishing formulations to provide flexibility.
 - Textile and plastic materials treated with a flame retardant finish.
 - Plastic components and prints may contain SCCPs as a plasticizer.
 - Natural leather can contain residual SCCPs as impurities in fat-liquoring agents used in leather production.

Sourcing Compliant Formulations from Your Chemical Suppliers

- For all formulations, request SDS documentation that meets current GHS requirements.
- Contact your suppliers and explain that you require formulations to be compliant with the current ZDHC MRSL limits whenever applicable.³
- Discuss with your chemical supplier whether any safer alternatives are available that are suitable substitutes for your production needs.
- Suppliers who use SCCPs/MCCPs in production for other clients may have contaminated machinery that can introduce these chemicals into their manufactured materials. Work with suppliers who have phased out the use of SCCPs/MCCPs for all clients.
- Prior to procuring any formulation, the chemical properties must be reviewed to ensure that proper protective equipment, chemical storage facilities, facility engineering controls, and associated treatment/disposal facilities are appropriate for the chemical(s).

Safer Alternatives

The following substances have been identified as examples of safer alternatives and may be suitable for your production needs. Any chosen alternative must be ZDHC MRSL compliant whenever applicable.

- Non-chlorinated paraffin alternatives such as alkylphosphates and sulfonated fatty-acid esters are available for specific applications.
- Natural animal, vegetable oils and/or mineral oil may be used as substitutes in leather production.⁴
- Polyacrylic esters, diisobutyrate and phosphates may be used in paint and coating applications.
- Aluminum hydroxide, antimony trioxide, acrylic polymers, and phosphate containing compounds can be used as flame retardant alternatives.

Additional Information

Visit ECHA's Candidate List of substances of very high concern to view dossiers for many restricted substances <https://echa.europa.eu/candidate-list-table>.

References

¹ United States Environmental Protection Agency. (2009, December 30). Short-Chain Chlorinated Paraffins (SCCPs) and Other Chlorinated Paraffins Action Plan. Retrieved April 18, 2017, from https://www.epa.gov/sites/production/files/2015-09/documents/sccps_ap_2009_1230_final.pdf

² Apparel and Footwear International RSL Management Group Restricted Substances List (AFIRM RSL) <http://afirm-group.com/afirm-rsl/>

³ ZDHC Manufacturing Restricted Substances List (ZDHC MRSL) https://www.roadmaptozero.com/mrsl_online/

⁴ UNEP/POPS/POPRC.5/10/Add.1 – General guidance on considerations related to alternatives and substitutes for listed persistent organic pollutants and candidate chemicals <http://chm.pops.int/Portals/0/download.aspx?d=UNEP-POPS-POPRC.5-10-Add.1.English.pdf>