



CHLORORGANIC CARRIERS (COC)

Other Names Chlorobenzenes,
Chlorinated Benzenes, chlorotoluenes,
Chlorinated Toluenes

CAS Number	Substance
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95-49-8	2-Chlorotoluene
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108-41-8	3-Chlorotoluene
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106-43-4	4-Chlorotoluene
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List continued in "Additional Information"

May Be Found In

- Dye carries and leveling agents
- Dyes and auxiliaries
- Textiles (especially polyester and polyester blends)
- Fumigants, biocides, insecticides, herbicides
- Optical brighteners

Chlororganic Carriers (COC) are a group of chemicals consisting of various chlorobenzenes and chlorotoluenes. COC are typically used as intermediates in the synthesis of other chemicals as well as dye carriers and leveling agents. COC may be present as impurities in chemical formulations of dyestuffs and solvents.^{1,2}

Uses in the Supply Chain

Within the apparel and footwear supply chains, COC are found in textile applications. COC may be used as carriers during the dyeing process of synthetic fibers, especially polyester and polyester blends. COC are also used as intermediates in the synthesis of other chemicals as well as solvents for dyestuffs and other chemical formulations with high melting points.

Therefore, COC may be present as impurities as well.

Why COC are Restricted

- Legislation in major markets around the world restricts the use of some COC in finished products.
- Leading apparel and footwear brands have banned the use of both chlorotoluenes and chlorobenzenes in production of their products.
- Some COC can be very toxic to aquatic organisms at certain concentrations and have potential to bioaccumulate and bioconcentrate.¹
- Above certain levels, long-term exposure to some COC may result in the development of particular cancers.
- Above certain exposure levels, some COC are toxic by inhalation or skin contact.
- 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 \(external link\)](#)
 - USA EPA 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
- 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 polyester and polyester-blended textiles as are often used in dyestuffs of these materials.

Sourcing Compliant Formulations from Your Chemical Suppliers

- For all formulations, request SDS documentation that meets current GHS requirements.
 - Ensure that no isomers of chlorotoluenes and chlorobenzenes are listed as ingredients.
- 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.

Safer Alternatives

In case of the use as carrier, there are environmentally friendly substitutes available. Some alternatives are based on aromatic esters or fatty alcohol polyglycol ethers. Any chosen alternative must be ZDHC MRSL compliant whenever applicable and meet specific brand requirements.

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>.

Continued list of CAS numbers and substance names from first page:

CAS Number	Substance	CAS Number	Substance
32768-54-0	2,3-Dichlorotoluene	106-46-7	1,4-Dichlorobenzene
95-73-8	2,4-Dichlorotoluene	87-61-6	1,2,3-Trichlorobenzene
19398-61-9	2,5-Dichlorotoluene	120-82-1	1,2,4-Trichlorobenzene
118-69-4	2,6-Dichlorotoluene	108-70-3	1,3,5-Trichlorobenzene
95-75-0	3,4-Dichlorotoluene	634-66-2	1,2,3,4-Tetrachlorobenzene
2077-46-5	2,3,6-Trichlorotoluene	634-90-2	1,2,3,5-Tetrachlorobenzene
6639-30-1	2,4,5-Trichlorotoluene	95-94-3	1,2,4,5-Tetrachlorobenzene
76057-12-0	2,3,4,5-Tetrachlorotoluene	608-93-5	Pentachlorobenzene
875-40-1	2,3,5,6-Tetrachlorotoluene	118-74-1	Hexachlorobenzene
877-11-2	Pentachlorotoluene	95-50-1	1,2-Dichlorobenzene
541-73-1	1,3-Dichlorobenzene		

References

¹ Hohenstein Institute & Textile Exchange. (2017). Chemical Snapshots – Chlorobenzenes. Revision 0.2. Retrieved March 17, 2017.

² Apparel and Footwear International RSL Management Group (Ed.). (2018, January 31). Restricted Substances List (RSL). Retrieved <http://afirm-group.com/afirm-rsl/>

³ Manufacturing Restricted Substances List (Publication). (2015, December). Retrieved <http://www.roadmapzero.com/programme/manufacturing-restricted-substances-list-mrsl-conformity-guidance/>