Steelcase Materials Chemistry Overview & Priority Substances

Steelcase believes that providing the best solutions for our customers begins by ensuring they're the best solutions for our environment. For more than a decade, Steelcase has been dedicated to understanding, assessing, and optimizing the materials we use to make our products. Thanks to this deep investment in materials chemistry, we're able to avoid materials of concern throughout the lifecycle of our products, and eliminate those identified with better alternatives.

As a part of our commitment to materials chemistry, Steelcase has identified the following set of priority substances that should be eliminated or avoided as we create products. They have been prioritized for optimization based on market demand/certification red lists, potential future regulation, and Steelcase corporate elimination goals.

- Flame retardants
- Formaldehyde (added)
- PVC
- Perfluorinated & Polyfluorinated compounds
- Phthalates
- Toxic Metals
- Chlorinated Adhesives
- Antimicrobials/Biocides
- Halogenated Blowing Agents

Substances on our priority list are used in the furniture industry for many reasons, such as performance and cost. While we have a very robust materials chemistry practice, we recognize there is still more work to be done. Targeting these nine substances is our effort to stay ahead of the market and regulation in this area. There is significant overlap between the Steelcase nine priority substances and the LBC Red List; and while Steelcase has done extensive work to eliminate these, we are still working on identifying and implementing alternatives.

The table below compares the Living Building Challenge Red List and the Steelcase Priority Substances of Concern.

Chemical name	Living Building Challenge Red List	Steelcase Priority Substances of Concern
Chlorinated polymers (PVC, CPE, etc.)	**X**	**X**
Halogenated Flame Retardants	**X**	**X**
Cadmium	**X**	**X**
Formaldahyde or urea formaldehyde	**X**	**X**
Lead	**X**	**X**
Mercury	**X**	**X**
Perfluorocarbons/perfluorochemicals	**X**	**X**
Bisphenol A (BPA)	**X**	
CFCs and/or HCFCs	**X**	**X**
Chloroprene (2-chloro-1,3-butadiene)	**X**	**X**
Hexavalent chromium		**X**
Phthalates	**X**	**X**
Antimony		**X**
Pentachlorophenol	**X**	
Antimicrobials		**X**
Arsenic	**X**	**X**
Creosote	**X**	
Polychloroprene (Neoprene)	**X**	**X**
Halogenated adhesives	**X**	**X**
HFC		**X**
PBDE	**X**	**X**

Parameters

When evaluating a product, there are a few parameters to keep in mind, that enable Steelcase to respond to our customers in a timely and accurate manner.

From the beginning of our material chemistry work, we've been invested in the Cradle to Cradle design principles and certification program. By specifying products that are C2C certified, such as Amia, Universal Storage, and Leap, the customer is selecting a product with materials we know have been evaluated down to 100 ppm, against 24 human and environmental health endpoints, and is 3rd party verified. The investment in this certification program helps increase the speed of these product evaluations.

If the customer is not interested in one of Steelcase's C2C certified products, it is important to know that we prioritize our sustainability work on our high volume products in each category. We know that those products will have the largest impact, and therefore investigate those materials first. If you're specifying a very low volume product, it may be more difficult to obtain the information, and therefore take more time. The complexity of the product in terms of number of parts and materials can also contribute to a longer timeline.

Finally, there are also some important technical notations to make when requesting an evaluation of our products.

- When we investigate the ingredients in our products, we set a threshold of 100 ppm in the total product.
- When evaluating products with formaldehyde we only look at the intentionally added chemistry, as formaldehyde can be naturally occuring.
- Customers should state if their request is at the chemical group level or the individual CAS number level. There can be differences between evaluating the two. As an example, requesting an evaluation of <u>all</u> flame retardants is far more extensive than an evaluation of <u>halogenated</u> flame retardants.

Timeline for product evaluation

Several of the products specified, have already had the chemistry evaluated as a result of various sustainability certifications they have achieved. Universal lateral files, Universal combination cabinet, Amia, and Leap, could be evaluated against these Red Lists by mid January.

If a product specified has not undergone any sustainability evaluation, we would need to investigate the materials throughout the supply chain. This process involves obtaining a bill of materials and corresponding with our suppliers to verify ingredient information. Depending on the complexity of the product and materials, this process could take up to six months.