



## OZONE DEPLETING SUBSTANCES

**Other Names** Not available

**CAS Number** **Substance**

**Various** Chlorofluorocarbons (CFCs)

**Various** Halons

**56-23-5** Carbon Tetrachloride

*List continued in "Additional Information"*

**May Be Found In**

- PU foams
- Foam blowing agents
- Cleaning solvents
- Dry cleaning agents
- Refrigeration and air conditioning
- Fire suppression and explosion protection

**Ozone depleting substances (ODS) are a family of chemicals known to significantly damage the atmosphere's ozone layer. Ozone depleting substances are broken down by ultraviolet (UV) radiation to chlorine and bromine which in turn deplete the ozone layer. These can also have a high Global Warming Potential and thus contribute to global climate change.**

### Uses in the Supply Chain

Historically, ODS have been used as foaming or blowing agents in polyurethane (PU) foams, cleaning solvents and dry-cleaning agents, refrigeration and air conditioning, and fire suppression and explosion protection. In general, ODS are not in routine use in the apparel and footwear industry.<sup>1</sup>

### Why ODS are Restricted

- Legislation in major markets around the world restricts the presence of ODS in finished products.
- International efforts to protect the ozone layer and phase out the production and use of ODS started with the signing of the Montreal Protocol. The Montreal Protocol was the first treaty to achieve universal ratification by all countries in the world.
- Since its signing, the Montreal Protocol has been periodically strengthened by both controlling additional ODS, as well as moving up the phase-out dates for substances which are already controlled.<sup>2</sup>
- 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 limit.<sup>3</sup>
- 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 understand your sourcing requirements.
- Although intentional use is not expected in apparel or footwear in the current production environment, pay special attention to material suppliers of foam components to ensure ODS are not utilized in production.



## Sourcing Compliant Formulations from Your Chemical Suppliers

There are no “compliant formulations” that contain ODS chemistries. Any use of the ozone depleting substances should be avoided. However, in general for all formulations:

- 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 limit whenever applicable.
- Discuss with your chemical supplier whether any safer alternatives are available that are suitable substitutes for your production needs.
- 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).

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## Safer Alternatives

There are many alternative products and production processes that do not use ozone depleting substances and may be suitable for your production needs. Any chosen alternative must be ZDHC MRSL compliant whenever applicable.

- The United States Environmental Protection Agency Significant New Alternatives Policy (SNAP) program provides information on alternatives to ozone depleting substances. <https://www.epa.gov/snap>
- The United Nations Environment Programme has developed a database which lists all the trade names of ozone depleting substances as well as commercially available alternatives. [http://www.unep.fr/ozonaction/information/mmc/lib\\_detail.asp?r=2967](http://www.unep.fr/ozonaction/information/mmc/lib_detail.asp?r=2967)

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## 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>.
- United States Environmental Protection Agency: Ozone Layer Protection – <https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>
- United Nations Environment Programme: Montreal Protocol – <http://www.ozone.unep.org/en/treaties-and-decisions/montreal-protocol-substances-deplete-ozone-layer>

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

| <b>CAS Number</b> | <b>Substance</b>                |
|-------------------|---------------------------------|
| <b>71-55-6</b>    | 1,1,1-Trichloroethane           |
| <b>74-83-9</b>    | Bromomethane (Methyl Bromide)   |
| <b>Various</b>    | Hydrobromofluorocarbon (HBFCs)  |
| <b>Various</b>    | Hydrochlorofluorocarbon (HCFCs) |
| <b>74-97-5</b>    | Bromochloromethane (BCM)        |

## References

<sup>1</sup> United States Environmental Protection Agency. (2016). Significant New Alternatives Program (SNAP). Retrieved August 15, 2017, at <https://www.epa.gov/snap/substitutes-sector>

<sup>2</sup> United Nations Environment Programme (2017). Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer. Retrieved August 15, 2017, from <http://www.ozone.unep.org/en/treaties-and-decisions/montreal-protocol-substances-deplete-ozone-layer>

<sup>3</sup> Apparel and Footwear International RSL Management Group (Ed.). (2018, January 31). Restricted Substances List (RSL). Retrieved <http://afirm-group.com/afirm-rsl/>