Executive Summary

Exposure of silicone products to high temperatures in air can give rise to formaldehyde. However, compared to some organic materials such as mineral oil, silicones release only a fraction (about 1%) of the formaldehyde, presenting a significant reduction in the potential exposure to this hazardous chemical.

What is Formaldehyde?

A publicly available fact sheet is included for background information on formaldehyde properties. Please note that it presents the national Occupational Exposure Limits (OELs) as directed by OSHA for the US. For other national OELs, please consult with the respective official national legislation.

US OSHA Formaldehyde Fact Sheet

How are silicones involved with formaldehyde?

Formaldehyde may be evolved from silicone materials if they are subjected to extreme high temperature. The temperature at which formaldehyde is released depends on the type of substance that is heated. In a study conducted by Filsinger (3), organic materials such as polypropylene and mineral oil heated to 200 °C were found to evolve formaldehyde at more than 30 times the maximum rate for silicone-containing materials (< 10 μg formaldehyde per gram of test material per hour). Therefore, compared to some other organic materials, the use of silicone materials presents a significant reduction in the potential exposure to this hazardous chemical. Further reductions may be found through the use of formulated silicone products with enhanced thermal stability.

Where there is prolonged heating of silicones or any other organic materials, it is important to ensure that adequate ventilation is provided and that other safe handling procedures are followed. Where there is concern about the generation of formaldehyde in the workplace from any source, formaldehyde measurements can be made by various standard occupational hygiene techniques.
What is Dow Corning Doing?
United States Law requires Dow Corning and other chemical manufacturers to comply with strict labeling for formaldehyde. In Europe and Asia, although not required by law, Dow Corning outlines the risk of formaldehyde generation on all Safety Data Sheets.

For further information on national Occupational Exposure Limits and safe handling of Dow Corning products please feel free to contact:

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References