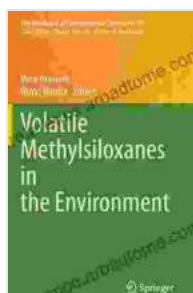


# Volatile Methylsiloxanes in the Environment: The Handbook of Environmental Chemistry

Volatile methylsiloxanes (VMS) are a class of synthetic organosilicon compounds that are used in a wide variety of industrial and consumer products. They are typically used as solvents, surfactants, and lubricants. VMS are highly volatile and have a low water solubility, which makes them mobile in the environment. They have been detected in air, water, soil, and sediment samples from around the world.

VMS are persistent in the environment and can bioaccumulate in organisms. They have been shown to have a variety of adverse effects on wildlife, including reproductive and developmental problems. VMS can also interfere with the endocrine system in humans.



## Volatile Methylsiloxanes in the Environment (The Handbook of Environmental Chemistry 89)

★ ★ ★ ★ ☆ 4.1 out of 5

Language : English  
File size : 8448 KB  
Text-to-Speech : Enabled  
Screen Reader : Supported  
Enhanced typesetting : Enabled  
Print length : 503 pages



The Handbook of Environmental Chemistry is a comprehensive resource on the environmental chemistry of VMS. It provides an overview of the

sources, fate, and transport of VMS in the environment. It also discusses the effects of VMS on wildlife and human health.

## **Sources of VMS**

VMS are primarily released into the environment from industrial and consumer products. The largest source of VMS is the production of silicones. Silicones are used in a wide variety of products, including sealants, adhesives, lubricants, and personal care products. VMS are also released from the use of silicone-based products, such as shampoos, conditioners, and deodorants.

Other sources of VMS include the combustion of fossil fuels and the incineration of waste. VMS can also be released from natural sources, such as volcanoes and geothermal vents.

## **Fate and Transport of VMS**

VMS are highly volatile and have a low water solubility. This makes them mobile in the environment. They can be transported long distances through the atmosphere and can be deposited in remote areas. VMS can also be transported through water and soil.

VMS are persistent in the environment. They can remain in the atmosphere for several days and in water for several weeks. They can also be adsorbed to soil particles and can remain in the soil for several years.

## **Effects of VMS on Wildlife**

VMS have been shown to have a variety of adverse effects on wildlife. These effects include:

\* Reproductive problems: VMS can interfere with the reproductive system of animals. They have been shown to cause decreased fertility, increased abortions, and birth defects. \* Developmental problems: VMS can also interfere with the development of animals. They have been shown to cause decreased growth, delayed puberty, and skeletal deformities. \* Immune system problems: VMS can also impair the immune system of animals. They have been shown to increase susceptibility to infections and diseases. \* Endocrine disruption: VMS can also interfere with the endocrine system of animals. They have been shown to alter hormone levels and can cause reproductive problems and developmental problems.

### **Effects of VMS on Human Health**

VMS can also have adverse effects on human health. These effects include:

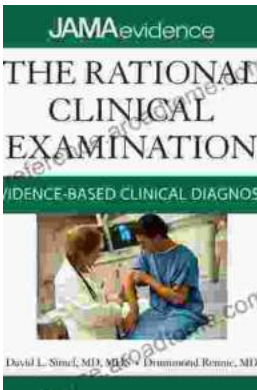
\* Respiratory problems: VMS can irritate the respiratory system. They can cause coughing, wheezing, and shortness of breath. \* Skin irritation: VMS can also irritate the skin. They can cause redness, itching, and swelling. \* Eye irritation: VMS can also irritate the eyes. They can cause redness, pain, and tearing. \* Reproductive problems: VMS can also interfere with the reproductive system of humans. They have been shown to cause decreased fertility and increased abortions. \* Developmental problems: VMS can also interfere with the development of humans. They have been shown to cause decreased growth and delayed puberty.

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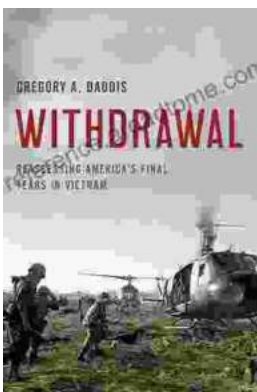


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