

How do silicones degrade in the environment?

The Silicone industry is committed to understanding the fate of silicones and how they degrade in the environment.

How do silicones enter the environment?

Silicones can enter the environment in various ways, including:



By going down the drain and being processed by wastewater treatment plants



Landfill - By sewage sludge application to agricultural soil



By moving to water when swimming in lakes, rivers and oceans



By evaporating in the air

How does it work?

Scientific research shows that silicones do not build up in the air, water, soil or sediment. Silicone compounds degrade in the environment under real-world conditions. This happens through a combination of degradation processes:

Biodegradation

when living organisms break down the substance facilitated by:



Mammals



Fish



Birds

Non-biological degradation

facilitated by natural elements in the environment



Water: changes in temperature and acidity



Soil: presence of clay

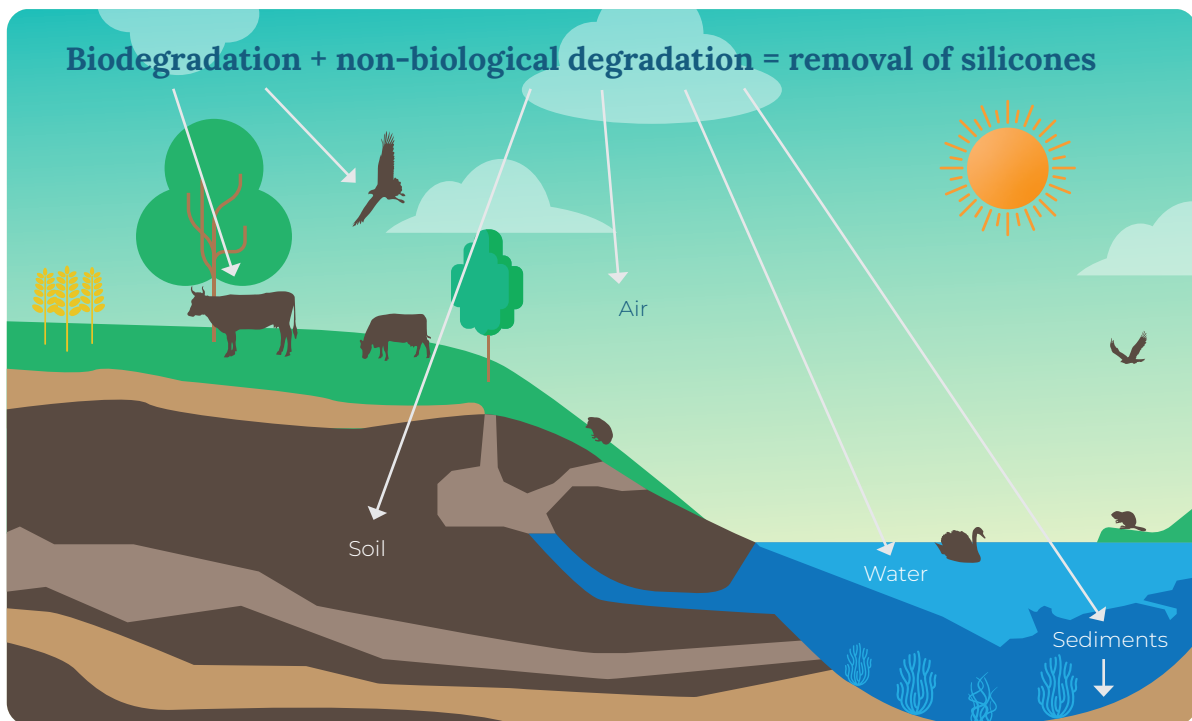


Air: natural sunlight

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At end-of-life silicones are ultimately converted to silica, silicic acid, and carbon dioxide. The pace at which degradation occurs depends on environmental conditions.



Did you know?

The silicones industry continues to fund new studies to gain an even better understanding of where our materials go and how they degrade in the environment. What we do know about the environmental fate of silicones reinforces our conviction that they have a positive sustainability profile and are safe for animals and the environment. Silicones degrade into common, natural, non-toxic substances and during their lifetime they make a significant contribution to resource efficiency and emissions savings in many applications.