

Leaflet for suppliers/service providers for the supply and use of silicone-free products

FreiLacke develops and produces innovative system coatings for a wide variety of customer requirements in the sectors of wheels, vehicle construction, mechanical and apparatus engineering, job coating, functional furniture, storage technology, construction and sanitation. In order to meet the constantly increasing demands of customers for quality, availability and flexibility, FreiLacke needs reliable and competent business partners who pursue the same customer-oriented goals.

The problem for a coating manufacturer is ensuring the avoidance of any type of silicone on their business premises. We want to ensure that all possible measures are being taken to prevent such interfering substances ending up in our delivered products, systems or system components during our manufacturing processes. Our aim is to proactively prevent complaints in this difficult area.

What are the current problems?

High-molecular polydimethylsiloxane (PDMS, often simplified to “silicone”), as well as plastic abrasions (e.g. polyethylene, polytetrafluorethylene) and those of high-molecular polyglycols may cause severe surface defects when used in coating businesses, even in cases of slight contamination. Textured silicones (e.g. silicone rubber) are not harmful in themselves. However, most silicone rubber products contain silicone oils of high molecular weights as plasticisers. Such substances are extremely unsuitable for coatings and cause surface defects in coating films (craters).

The prevalence, in particular, of polydimethylsiloxanes with high molecular weights within our working and living environments is mind-boggling.

Sie finden sich in oder an:

- Lubricants
- Sliding agents
- Deep-drawing agents
- Care products of all types
- Rust-protective impregnations
- Skincare products
- Cleaning agents
- Sprays of all types
- Sliding ring seal sealing rings
- Filter material sewing threads
- Seals
- O-rings
- Sealing compounds
- Lubricants in fittings, such as ball valves, valves and other types
- Sliding ring seal sealing pressure fluid in pumps, mixers etc.
- Hoses
- Container materials of metal and plastic packaging
- Lubricants in IBC camlock fittings

Screw caps of sample bottles as well as faults from container preallocations, despite cleaning in accordance with usual methods. In many cases, polydimethylsiloxanes with high molecular weights are merely a small addition in order to achieve certain effects. Unfortunately, these are often not declared as ingredients.

We are therefore very interested in obtaining additional information from you regarding products that may contain such interfering substances and engaging in an in-depth exchange of experiences with many different companies. The problem is being constantly worked on within the coating industry as well as its supplier chain. As a result, it is highly likely that further interfering substances will be identified.

Interfering substances in practise


Two cases taken from our activities highlight the critical effects of even the smallest quantities of contaminants:

Silicone bands (friendship bracelets, fitness trackers and similar watches) are becoming more and more popular amongst employees. These may lead to subsequent crater formation due to the evaporation of the silicone particles.


Schadensbilder an Lackierungen **FreiLacke**

Beispiele

Silikon-Krater



Silikonkrater als Nest



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In another case, the problem originated from a compressed air line where a valve's defective compression gland blew fine oil droplets into the atmosphere approx. 15 m away from a coating container. The consequences became apparent in the coating shop two weeks later, when the old, not-yet contaminated coating batch was used up and the new batch was subsequently utilised.

Contamination caused by raw materials, system components and auxiliary products in the cooperative chain has similar effects, and there are many other possibilities, too. This illustrates that avoiding contamination is not such a simple task, and wholly impossible without the assistance of our suppliers. How can coating craters be avoided at the end of the supply chain?

The following overview illustrates the most important measures:

Exclusively use silicone-free lubricants for all system parts, as these will not cause craters in coating products.

In addition to silicone sprays, any seals, sealing compounds and oils which contain silicone also must not be used on the premises by your technicians/employees.

All parts of any new or modified systems must be cleaned with a suitable cleaning agent.

The transferral of substances when using a system or part of a system for several products must be avoided through careful cleaning.

As a precaution, only completely safe skincare products may be provided within the entire operating area.

Ensure that all packaging is free of any potential risks caused by lubricants on the seals or drawing/separating agent residue on the metal surfaces.

When products are required to be filtered, ensure that contamination cannot occur through the filter materials and auxiliary products.

Each decanting procedure bears the risk of contamination. The decanting procedures for raw materials and semi-finished products should therefore be kept to an absolute minimum.

We need your assistance: Because you know what your own production processes entail and are aware of any possible sources of contamination. However, we will also help you: Our experts are always happy to aid you in the analysis of any potential problem sources and the implementation of results within your quality management process.

Kind regards,
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