

Data Sheet SU0075b

Devices Free of Paint-Wetting Impairment Substances

General:

The definition of "free of paint-wetting impairment substances" is quite difficult, even after close examination.

This term is used to describe a general lack of substances which interfere with the painting of surfaces which may be discovered during the treatment of wastewater from painting systems. Amongst others, silicone is one of the paint-wetting impairment substances.

Silicones are organo-silicon compounds, which can be found in a wide variety of forms in industrial, as well as in private applications, and which occur much more frequently than is commonly believed.

Their exceptional chemical, electrical and physiological characteristics, not to mention their water-repellent qualities, which of course are highly relevant for us, have made silicones an almost irreplaceable family of materials.

Silicones are used in a wide variety of applications as elastomers (hoses, sheet products, sealing profiles ...), as highly vulcanised (brittle) resins and linearly "vulcanised" greases and oils, and as adhesives as well.

The treatment of other materials with silicone must also be mentioned, for example the process of siliconising paper to make it water repellent.

Silicones can thus be found almost everywhere. It is practically impossible to fully rule out silicone contamination, even if absolutely no silicones of any type are present at the factory.

Amongst other articles, silicones may be present in or on:

- Automotive polishes (car washes), cockpit spray
- Various objects which include parts made from silicone rubber
- Stucco (water repellent)
- Adhesive labels (and backings)
- Band-Aids
- Adhesives, sealing compounds (joint packings)
- siliconised glass instruments
- Furniture care products
- Textiles, carpeting
- Panty liner
- Lubricants
- Shoe care products
- Plastic components (mould release)
- Packaging materials (water repellent papers and cardboard)
- Laundry care products (fabric softeners)
- Diapers

Paint-wetting impairment substances include not only silicones, but rather the following as well, amongst other substances:

Oils, greases, graphite (for example from pencils), other plastic materials which do not contain silicones (e.g. Teflon), waxes, metallic soaps (e.g. aluminium stearate), paraffin, talc, various types of dust.

In light of the multitude of substances mentioned above which are incompatible with painting processes, it becomes extremely difficult to make products and parts available to the customer for use in painting systems, which are entirely free of these substances.

The deposit of silicone containing substances onto the surfaces to be painted is of great concern where painting technology is concerned. For all practical purposes, however, only the transfer of such substances through direct contact with low molecular, minimally vulcanised silicones, i.e. with silicone oils or greases, is of any real significance.

Within this context, reference must be made to the fact that silicone oils are used as working fluids in ultrahigh-vacuum diffusion pumps due to an extremely low vapour pressure which ranges, for example, from 10 to 12 bar.

Since vapour pressures for high molecular, highly vulcanised silicones such as silicone rubber are even much lower, and for all intense purposes immeasurable, the presence of such substances has no negative influence.

In order to avoid product liability claims, a declaration is often required to the effect that "the product contains no silicone or other paint-wetting impairment substances".

As has been thoroughly represented above, it is practically impossible to issue a general and absolute statement of this nature in most cases, or to justify the costs of setting up a manufacturing facility to accomplish such a goal, especially where products of complex design are involved. Even production under cleanroom conditions would not necessarily suffice, not to mention the astronomical costs.

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Based upon this knowledge, IER has established the following manufacturing procedure:

- All individual parts for measuring sensors which are made of plastic or stainless steel, and which come into contact with production media, are cleaned with special cleansers before and during manufacturing.
- These parts are assembled in areas which have been specially equipped for this purpose.
- The parts are once again cleaned with a special fluid after final assembly, and are only handled with cotton gloves thereafter.
- The devices are wrapped in a cellulose pad after cleaning, and are then packaged in PE sheet material.
- The packaging for all devices which are manufactured under these conditions is identified with a "free of paint-wetting impairment substances " adhesive label.

This procedure has been established and described in QM Procedures Directive "QMV -LSF" in accordance with DIN ISO EN 9001.

The implementation of this procedure assures that devices manufactured under these conditions are, to a great extent, free of paint-wetting impairment substances.

We accept no liability for contamination due to damaged transport packaging or improper handling after removal from the packaging!

"Free of paint-wetting impairment substances" requirements cannot be fulfilled for parts which come into contact with production media such as terminal contacts, measuring amplifiers and devices, for which all sorts of cables come into contact with production media.

Painting compatible manufacturing is not standard, and it involves substantially increased costs.

Purchase orders must therefore specifically request product versions with are "free of paint-wetting impairment substances". The additional expense will be invoiced as a separate item.



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