MicroCare MEDICAL™

Swellex™ Silicone Swelling Agent

Product Information

Swellex Silicone Swelling Agent is a proprietary solvent used as a swelling media for molded silicone rubber components and silicone rubber tubing. *Swellex* expands the treated materials to a desired dimension, allowing for easy assembly to (or over) a fitting or a rigid part with complex geometry. The swelling agent then quickly evaporates residue-free from the polymer substrate without impacting physical properties such as color, tear strength or elasticity. The treated component returns to its original size to create a secure connection without adhesives, lubricants or mechanically stressing the component. *Swellex* has excellent materials compatibility and is hostile to bioburden.

Regulatory

Swellex Silicone Swelling Agent is listed as acceptable by the U.S. Environmental Protection Agency (EPA) under the Significant New Alternatives Policy (SNAP) program as a substitute for ozone depleting substances. *Swellex* Silicone Swelling Agent has an Ozone Depletion Potential (ODP) of zero. Also, no ingredients are US EPA classified as Volatile Organic Compounds (VOCs). All ingredients are listed in the TSCA inventory.

None of the ingredients in *Swellex* Silicone Swelling Agent are classified as Hazardous Air Pollutants (HAP) and are not subject to NESHAP regulation. None are included in SARA Title III Section 313 list of toxic chemicals, and none are subject to SARA Title III (EPCRA) reporting requirements. Contact MicroCare for details on EU REACH regulatory compliance.

Physical & Chemical Properties	
Appearance	Clear, Water White
Vapor Pressure	134 mmHg
% Volatile by Weight (Carrier)	100
Evaporation Rate [Ether=1]	>1
Flash Point: Closed Cup [ASTM D 93]	-18 °C / 0 °F

** Contact MicroCare for additional Technical details.*

Typical Chemical Properties		
Test	Swellex	Hexane
At Room Temperature		
% Change in Width	15	23
% Change in Weight	60	83
At Boiling Point*		
% Change in Width	20	24
% Change in Weight	64	63

** 54 °C (129 °F) for Swellex Silicone Swelling Agent; 68 °C (154 °F) for Hexane*

NOTE: *Swellex* Silicone Swelling Agent has similar swelling capability compared with hexane. However, *Swellex* Silicone Swelling Agent is superior in performance because it results in a much smaller weight gain of the polysilicone tubing due to solvent absorption. This is very desirable from the viewpoint of solvent consumption as well as a faster recovery of the polysilicone tubing to its original state.

Packaging	
Glass Bottle² (Sample) - 1L 2 Lb / 0.91 kg	MCC-SWX0GL
Steel Gallon¹ - 1 Gal / 3.79 L 8 Lb / 3.63 kg	MCC-SWX0G
Glass Gallon² - 1 Gal / 3.79 L 8 Lb / 3.63 kg	MCC-SWX0GG
Steel Pail¹ - 5 Gal / 18.9 L 40 Lb / 18.14 kg	MCC-SWX0P
Steel Drum¹ - 55 Gal / 208 L	MCC-SWX0D
Recycle	1 40 FE 2 71 GL

Note: Products sold by weight, not volume.
One-gallon and smaller sample containers are available upon request.

Application Methods

For most applications, parts are immersed in the solvent at room temperature. *Swellex* Silicone Swelling Agent evaporates quickly, thus it is recommended that the vapor-to-air interface area be minimized and/or the solvent be cooled to promote efficient and effective use. Due to flammability characteristics, this product should be used in appropriately rated areas and equipment. If there is a need to use the solvent at elevated temperatures, a flammable liquids-rated, single sump solvent bath can be used. Call *MicroCare* for details on how we can help you with your manufacturing requirements.

Material Compatibility

Swellex Silicone Swelling Agent is beneficially selective in its swelling capabilities, is compatible with most materials commonly used in medical device applications and has negligible impact on polyurethane materials. Elastomer swelling and shrinking will, in most cases, revert to within a few percent of original size after air drying. Swell, shrinkage, and extractables are strongly affected by the compounding agents, part geometry such as wall thickness, plasticizers, and curing used in the manufacture of plastics and elastomers. Therefore, prior in-use testing is particularly important. Long-term compatibility data simulating exposure of specific equipment construction materials is available from *MicroCare Medical* upon request.

Metals & Other Compatibility

Swellex Silicone Swelling Agent is very stable with most common metals such as aluminum, copper, zinc, carbon steel, and stainless steel. Contact with highly basic process materials, pH 10 or above, is not recommended.

Plastic & Elastomer Compatibility

Test data for plastics and elastomers compatibility are summarized below. These tests simulate effects for exposures in a typical treatment cycle of 15 minutes or less.

Plastics	
Compatible	
Polyethylene	ABS
Polypropylene	Acetal
Polystyrene	Acrylic
Polyester, PET, PBT	Epoxy
Polyphenylene Oxide	PPO Ionomer
Polyimide	PI, PEI
Polyetherketone, PEK	Phenolic
Polyaryletherketone, PEEK	PVC, CPVC
Polysulfone	PTFE, ETFE
Incompatible[1]	
None Tested	

Elastomers	
Compatible	
Buna N, NBR, Nitrile	Buna S, SBR, GRS
Butyl Rubber, IIR	Chlorosulfonated PE
EPM, EPDM, Nordel®	Polysulfide
Natural Rubber, Isoprene	Neoprene
Incompatible[1]	
Viton® B	

[1] *Material composition varies depending upon compounding agents, plasticizers, processing, etc. Specific materials should be tested for compatibility with solvent.*

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