



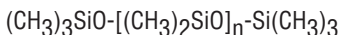
SILIKON™ 1000

(purified polydimethylsiloxane)

DESCRIPTION

SILIKON™ 1000 (purified polydimethylsiloxane) is highly purified long chain polydimethylsiloxane trimethylsiloxy terminated silicone oil. It is sterile, non-pyrogenic, clear, colorless and has a viscosity of 1000 cs. for use as a post-operative retinal tamponade during vitreoretinal surgery. SILIKON™ 1000 is composed of silicon, oxygen, carbon and hydrogen atoms. SILIKON™ 1000 is immiscible with aqueous components and is relatively inert material with little biological toxicity potential.

The structure of the molecule is:



SILIKON™ 1000 is optically clear. The physical properties of SILIKON™ 1000 are listed below.

Viscosity (centistoke @ 25° C): 1000 nominal
Refractive Index: 1.40
Specific Gravity 0.97

SILIKON™ 1000 contains no preservatives or other ingredients.

INDICATIONS FOR USE

SILIKON™ 1000 is indicated for use as a prolonged retinal tamponade in selected cases of complicated retinal detachments where other interventions are not appropriate for patient management. Complicated retinal detachments or recurrent retinal detachments occur most commonly in eyes with proliferative vitreoretinopathy (PVR), proliferative diabetic retinopathy (PDR), cytomegalovirus (CMV) retinitis, giant tears, and following perforating injuries. SILIKON™ 1000 is also indicated for primary use in detachments due to Acquired Immune Deficiency Syndrome (AIDS), related CMV retinitis and other viral infections affecting the retina.

CONTRAINDICATIONS

- SILIKON™ 1000 (purified polydimethylsiloxane) is contraindicated in patients with known hypersensitivity to silicone oil.
- In pseudophakic patients with silicone intraocular lenses.

WARNINGS

- Oil-induced pupillary block and angle closure can occur in aphakic eyes if a six o'clock iridectomy is not performed.

PRECAUTIONS

- Do not use a vial for more than one patient.
- Discard unused portion.
- Do not admix with any other substances prior to injection.
- Do not resterilize.
- Do not use expired product.
- An underfill may result in an ineffective inferior tamponade and an overfill may result in corneal abnormalities and elevated IOP.
- The use of SILIKON™ 1000 as a long term tamponade has not been studied and must be determined by the treating physician. SILIKON™ 1000 should be removed when, in the judgment of the physician, the retinal attachment would not be compromised.

ADVERSE REACTIONS

The safety profile of SILIKON™ 1000 has been evaluated in a multicenter US based clinical trial (757 CMV eyes and 1,816 non-CMV eyes).

The following adverse reactions were observed during the clinical trials with SILIKON™ 1000 (purified polydimethylsiloxane).

Table 1 – 6 Months and last Examination for Safety Outcomes

OUTCOME	VISIT ¹	CMV	Non-CMV
Emulsification in eyes with oil	6 month	1%	3%
	Last visit	1%	3%
Cataract in phakic eyes	6 month	64%	63%
	Last visit	38%	71%
Hypotony*	6 month ²	6%	19%
	Last visit	4%	19%
Elevated IOP	6 month ³	0%	3%
	Last visit	1%	5%
Corneal opacity/abrasion*	6 month ⁴	6%	26%
	Last visit	4%	31%

*The rate of previous vitreoretinal operative procedures was 14% for CMV patients and 86% for non-CMV patients.

¹The last visit may have occurred anytime post-operatively, and the 6 months visit may have occurred post-operatively between 137 and 272 days.

²Incidence rate of hypotony in non-CMV subjects at 6 months post-operatively was significantly greater in aphakic (21%) and pseudophakic (17%) eyes versus phakic (7%) eyes ($p < 0.01$).

³Incidence rate of elevated IOP in non-CMV subjects at 6 months post-operatively was significantly greater in phakic eyes (7%) versus aphakic (3%) and pseudophakic (2%) eyes ($p = 0.03$).

⁴Incidence rate of corneal opacity/abrasion in non-CMV subjects at 6 months post-operatively was significantly greater in aphakic (30%) and pseudophakic (21%) eyes versus phakic (8%) eyes ($p < 0.01$). Incidence rate of corneal opacity/abrasion in CMV subjects at 6 months post-operatively was significantly greater in aphakic (20%) and pseudophakic (11%) eyes versus phakic (4%) eyes ($p = 0.04$).

Table 2 – Safety Results at 6, 12 and 24 Months

Stratified by Complete Attachment and Macula Attachment

Outcome	CMV Eyes			Non-CMV Eyes		
	6 mos.	12 mos.		6 mos.	12 mos.	24 mos.
Emulsification in eyes with oil remaining						
with complete attachment	1%	2%		3%	2%	6%
with macula attachment	1%	2%		2%	3%	5%
Cataract in phakic eyes						
with complete attachment	64%	81%		64%	73%	89%
with macula attachment	63%	82%		63%	74%	80%
Hypotony						
with complete attachment	5%	4%		16%	14%	10%
with macula attachment	5%	5%		16%	16%	11%
Elevated IOP						
with complete attachment	0%	2%		3%	4%	5%
with macula attachment	0%	2%		3%	4%	5%
Corneal opacity/abrasion						
with complete attachment	5%	5%		23%	23%	31%
with macula attachment	5%	4%		23%	25%	34%

CLINICAL STUDIES

The safety and effectiveness of SILIKON™ 1000 (purified polydimethylsiloxane) has been demonstrated in a United States multicenter clinical trial involving 2754 eyes. The core study analysis included 2573 eyes in 2439 patients, consisting of 757 CMV eyes and 1816 non-CMV eyes (935 PVR, 359 PDR, 291 trauma, and 231 giant tears). An additional 181 eyes were treated with SILIKON™ 1000 for diagnoses other than those detailed above which were not represented in core study analysis. The effectiveness of SILIKON™ 1000 was measured by anatomical (macula attachment and complete retinal attachment) and visual acuity (ambulatory and preservation), Table 3.

Table 3

SUMMARY OF EFFECTIVENESS OUTCOMES
OF SILIKON™ 1000 (purified polydimethylsiloxane) IN CMV AND NON-CMV EYES

Effectiveness Parameters - %	CMV		Non CMV	
	6 months	Last visit	6 months	Last visit
Macula Attachment	94	94	89	87
Complete Attachment	77	80	70	69
Preserved Vision	45	51	84	79
Ambulatory Vision	66	63	38	33

DIRECTIONS FOR USE

SILIKON™ 1000 can be used in conjunction with or following standard retinal surgical procedures including scleral buckle surgery, vitrectomy, membrane peeling, and retinotomy or relaxing retinectomy.

SILIKON™ 1000 should be injected in the vitreous cavity only, and should be filled to the iris plane. An underfill may result in an ineffective inferior tamponade. An overfill may result in complications such as corneal abnormalities and elevated IOP. Air bubbles should be absent from the SILIKON™ 1000 in the syringe prior to instillation. SILIKON™ 1000 is supplied in 10 mL glass vials with 8.5 mL of sterile silicone oil, which is adequate for an average eye, but highly myopic eyes may require a larger volume.

The patient should be monitored closely by the physician for development of glaucoma, cataract, and corneal complications and be scheduled for follow-up re-examination at regular intervals.

As there is a possible correlation between the migration of SILIKON™ 1000 into the anterior chamber and the appearance of corneal changes such as edema, hazing or opacification, Descemet's folds, or decompensation, regular monitoring of the patient's corneal status should be performed and early corrective action taken if necessary, including extraction of the oil from the anterior chamber. Large bubbles or droplets of oil in the anterior chamber can be removed manually by syringe. Further standard practice for medical treatment of the keratopathy is recommended.

Temporary pressure increases occurring several weeks after surgery which either normalize spontaneously or can be corrected by surgical treatment are those in which the SILIKON™ 1000 may cause a mechanical blockage of the pupil or inferior iridectomy or causes chamber angle closure by forcing its way anteriorly. In these situations some of the oil may be withdrawn to relieve the mechanical force of the oil interface. Presence of droplets in the anterior chamber may also cause a chronic outflow obstruction of the trabecular meshwork. In such situations, elevated intraocular pressure can be managed with anti-glaucoma medication in the majority of patients with outflow obstructions.

ADVERSE EVENT REPORTING

Surgeons should use the following address and telephone number for reporting adverse reactions:

ALCON LABORATORIES, INC.

Technical Consumer Affairs (Q-122)

6201 South Freeway

Fort Worth, Texas 76134-2099

Call Collect: (817) 551-4445

ASSEMBLY INSTRUCTIONS

Caution: The outer surface of the SILIKON™ 1000 (purified polydimethylsiloxane) vial is not sterile and the vial should not be introduced into the sterile field.

The injection may be through a sclerotomy via cannula attached directly to a syringe or through a scleral sutured cannula.

Sterile Transfer

1. Outside the sterile field, remove the SILIKON™ 1000 vial from the clear polyethylene bag and place it in a stable location. **DO NOT SHAKE** SILIKON™ 1000.
2. Hold the SILIKON™ 1000 vial firmly, and remove the aluminum seal and stopper.
3. Within the sterile field, securely place a 20 gauge cannula on a 10 mL syringe.
4. Hold the vial within reach of the sterile field and aseptically introduce the cannula fitted to the syringe into the vial and withdraw the SILIKON™ 1000 taking care not to introduce air bubbles. Two persons are required for this procedure.
5. After the SILIKON™ 1000 has been completely transferred to the syringe remove the 20 gauge cannula from the syringe and dispose of it properly. Securely place a new sterile cannula onto the syringe.
6. The SILIKON™ 1000 is now ready to be used. The syringe may be stored temporarily with the cannula pointed upward to allow any air bubbles to come to the tip for easy removal.
7. At the conclusion of the procedure properly discard the syringe and any remaining SILIKON™ 1000.

All Components for Single Use Only.

Do Not Resterilize.

The use of SILIKON™ 1000

Properties

SILIKON™ 1000 (purified polydimethylsiloxane), by virtue of this high surface tension, functions as post-operative retinal tamponade, providing a stabilizing retention force on the reattached retina. The high surface tension allows SILIKON™ 1000 to seal retinal breaks and prevent slippage and folding of retinal tears by exerting a counteractive force against the reattached retina.

SILIKON™ 1000 has a viscosity which facilitates manual intraocular instillation and removal using a hand-held syringe. This minimizes instillation and removal time in which intraocular pressure must be controlled.

SILIKON™ 1000 has a refractive index similar to aqueous. It is optically clear and does not interfere with visualization of the retina.

Toxicity

In a series of *in vitro* and *in vivo* tests, SILIKON™ 1000 has been shown to be non-toxic, non-pyrogenic, non-mutagenic, and non-irritating.

General Use

Before SILIKON™ 1000 is injected, tissue debris, blood and intraoperative aids such as perfluorocarbon liquids should be completely removed. SILIKON™ 1000 may be injected into the vitreous cavity transconjunctivally and transclerally following vitrectomy. SILIKON™ 1000 is normally injected under pressures which depend on the diameter of the injection cannula. During the injection, care should be taken to maintain reasonable intraocular pressure. The oil can be injected into the vitreous from the syringe via a single-use cannulated infusion line or syringe needle. Use of an automated injection system, will assist the physician in avoiding an underfill or overfill condition. Subretinal fluid can be drained with a flute needle concurrent with SILIKON™ 1000 injection.

The vitreous cavity can be filled with the oil to between 80% and 100% while exchanging for fluid, perfluorocarbon liquid, or air, taking necessary precautions to avoid high intraocular pressure from developing during the exchange. Because SILIKON™ 1000 is less dense than the eye's aqueous humor, a basal iridectomy at the 6 o'clock meridian (Ando iridectomy) is recommended to minimize oil induced pupillary block and early angle-closure glaucoma. At the physician's discretion, it may be desirable to have the patient assume a face-down posture during the first 24 hours following surgery.

When a perfluorocarbon is used intraoperatively, small droplets of perfluorocarbon may become mixed with SILIKON™ 1000 and may be difficult to distinguish from air bubbles. However, within seconds, the air bubbles will float anteriorly in SILIKON™ 1000, while the small perfluorocarbon droplets will descend onto the surface of the retina, making them easier to identify and aspirate.

It is recommended that SILIKON™ 1000 (purified polydimethylsiloxane) be removed at an appropriate interval within 1 year following instillation if the retina is stable, attached, and without significant remnants of proliferation. Although there is insufficient clinical evidence to support justification for longer term tamponade, whether or not the oil should be removed in patients at high risk for redetachment or the development of phthisis and shrinkage due to hypotony must be determined individually by the physician. In order to minimize the number of invasive traumatic experiences for patients with AIDS and CMV retinitis at high risk for redetachment and who have a shortened expected lifespan, it may be desirable to avoid silicone oil removal procedures if the patient concurs.

SILIKON™ 1000 can be removed from the vitreous cavity with a normal 10 mL syringe and a wide bore 1 mm cannula. By repeated oil-fluid exchange most of the remaining small silicone oil droplets can subsequently be mobilized and removed from the eye. Alternatively, oil may be passively removed by infusion of an appropriate aqueous solution under the oil bubble, while allowing the oil to effuse out of sclerotomy incision, or through a limbal incision in aphakic patients.

HOW SUPPLIED

SILIKON™ 1000 is supplied in 10 mL glass vials filled with 8.5 mL of sterile silicone oil.

STORAGE

SILIKON™ 1000 should be stored at room temperature, 15°-32°C (59°-89°F).

For intraocular use only.

ALCON LABORATORIES, INC.
6201 South Freeway
Fort Worth, Texas 76134-2099

Developed by:
Richard-James, Inc.

CAUTION: Federal (U.S.A.) law restricts this device to sale by or on the order of a physician.

REFERENCES

CMV

Davis JL, MS, Lai M-Y, Trask DK, Azen SP. *Silicone Oil in Repair of Retinal Detachments Caused by Necrotizing Retinitis in HIV Infection*. Arch. Ophthalmol. 113:1401-1499 (1995).

PDR

Brouman ND, Blumenkranz MS, Cox MS, Trese MT. *Silicone Oil for the Treatment of Severe Proliferative Diabetic Retinopathy*. Ophthalmology 96:759-764 (1989).

Giant Tear

Alward GW, Cooling RJ, Leaver PK. *Trauma-induced Retinal Detachment Associated with Giant Retinal Tears*. Retina 13:136-141 (1993).

PVR

Sele CH, McCuen BW, Landers MB, Machemer R. *Long-term Results of Successful Vitrectomy with Silicone Oil for Advanced Proliferative Vitreoretinopathy*. Am. Journal Ophthalmol. 103:24-28 (1987).

Trauma

Brinton GS, Aaberg TM, Reeser FH, Topping TM, Abrams GW. *Surgical Results in Ocular Trauma Involving the Posterior Segment*. Am. Journal Ophthalmol. 93:271-278 (1982).

343273-0599