Intraoperative tamponades are heavier than aqueous and include a small family of perfluorocarbon liquids and semifluorinated alkanes. These liquids are mainly used for tissue manipulation and in some cases (F6H8) they are light enough to act as a **short-term tamponade**. Tamponade agents are used to hold tissue in place and to close retinal breaks by making contact with the retina, thus blocking the flow of aqueous through a retinal hole. **Long term Tamponades** are mainly used to hold tissues in place post-operatively to promote healing. Siluron and LSO oils are not heavy liquids. They float on aqueous and can be used as a tamponade for the superior retina. Siluron 2000 and Siluron Xtra include a high molecular weight silicone oil polymer that increases their resistance to emulsification. Densiron Xtra is a combination of a semifluorinated alkane (F6H8) and Siluron Xtra. It sinks in aqueous and can be used as a tamponade for the inferior retina. F4H5 is a biocompatible **Washout** solution for removing silicone oil residue from the retina and for cleaning intraocular lenses after silicone oil tamponades.

	LONG TERM TAMPONADES			WASHOUT	SHORT TERM TAMPONADES	INTRAOPERATIVE TAMPONADES	
	LSO™ Silicone Oil	**Siluron® 2000 New Generation Silicone Oil**	**Siluron® XTRA New Generation Silicone Oil**	**Densiron® XTRA New Generation "Heavier-than-water" Silicone Oil**	**F4H5® Perfluorobutylpentane**	**F6H8® Perfluorohexyloctane**	**F-Decalin® Perfluorodecalin**	**F-Octane® Perfluorooctane**
								
FORMULA	$(CH_3)_3SiO$ [$Si(CH_3hO]n$ $Si(CH_3)_3$ (1,000 & 5,000)	95% Polydimethylsiloxan PDMS ultrapure (1000 mPas) + 5% PDMS (2.5 Mio. mPas)	90% Polydimethylsiloan PDMS ultrapure (1000 mPas) + 10% PDMS (2.5 Mio. mPas)	69.5% polydimethylsiloane, ultrapure (Siluron Xtra) 30.5% perfluorohexyloctane	$C_4F_9C_5H_{11}$	$C_{14}H_{17}F_{13}$	$C_{10}F_{18}$	C_8F_{18}
INDICATIONS	Long-term tamponade after operative treatment of severe retinal detachment	Long-term tamponade after operative treatment of severe retinal detachment	Long-term tamponade after operative treatment of severe retinal detachment	Temporary tamponade after operative treatment of severe retinal detachment, particularly for inferior and posterior retinal holes	Washout solution for: 1) Cleaning of silicone oil residue 2) Cleaning of intraocular lenses after silicone oil tamponade 3) Removal of sticky oil	1) Tissue manipulation 2) Temporary endotamponade in cases of complicated retinal detachments, especially in the inferior fundus 3) Removal of silicone oil remnants	Tissue manipulation	Tissue manipulation
REMOVAL	As soon as possible and no longer than 6 months	As soon as possible and restricted to 3-6 months	As soon as possible and restricted to 3-6 months	As soon as possible and not longer than 3 months	Conclusion of surgery	Usually after 2-3 weeks and no longer than 3 months	Conclusion of surgery	Conclusion of surgery
SPECIFIC GRAVITY	0.97	0.97	0.97	1.06	1.28	1.33	1.93	1.76
INTERFACIAL TENSION against water (@25°C)[mN/m]	23.3 (1,000) or 35.4 (5,000)	28.2	33.7	>40.8	43.03	49.1	57.8	55
REFRACTIVE INDEX	1.40	1.404	1.404	1.39	1.32	1.34	1.31	1.27
VISCOSITY (mPas@25°C)	1000 or 5000	2000-2400	4100-4800	1000-1400	1.05	3.5	5.5	1.2
VAPOUR PRESSURE (Torr@37°C)	n.a.	n.a.	n.a.	n.a.	18.0	<1	13.5	57
BOILING POINT (°C)	n.a.	n.a.	n.a.	n.a.	152	223	142	105
AMPHIPHILIC	n.a.	n.a.	n.a.	n.a.	Yes	Yes	No	No
PRODUCT CODES	**LS1000** - LSO 1000 SILICONE OIL 10ML SYRINGE **LS5000** - LSO 5000 SILICONE OIL 10ML SYRINGE **LC1000** - LSO 1000 10ML SYRINGE + QUICKSET **LC5000** - LSO 5000 10ML SYRINGE + QUICKSET	**G80740** - SILURON 2000 SILICONE OIL 10ML SYRINGE **G80740 KIT** - SILURON 2000 10ML SYRINGE + QUICKSET	**G80750** - SILURON XTRA SILICONE OIL 10ML SYRINGE **G80750 KIT** - SILURON XTRA 10ML SYRINGE + QUICKSET	**G80925** - DENSIRON XTRA SILICONE OIL 10ML SYRINGE **G80925 KIT** - DENSIRON XTRA 10ML SYRINGE + QUICKSET	**G80615** - F4H5 WASHOUT, 5ML	**G80606** - F6H8 6ML VIAL	**G80115** - F-DECALIN 5ML SYRINGE **G80117** - F-DECALIN 7ML SYRINGE	**G80315** - F-OCTANE 5ML SYRINGE **G80317** - F-OCTANE 7ML SYRINGE

Specific Gravity: The greater the specific gravity, the heavier the substance per mL. Heavier liquids make it easier to manipulate tissue but if they are too heavy, they can also hide tractions the surgeon would like to see. The lighter the substance, the less likely it is to damage cells over time. The specific gravity of water is 1.00.

Interfacial Tension: The higher the interfacial tension, the greater is a liquid's tendency to stay as a single bubble and the less likely that the liquid will pass through a break

Viscosity: The lower the viscosity, the easier it is to inject and remove the substance. The higher the viscosity of the liquid, the greater is its tendency to withstand emulsification into smaller droplets.

Vapour Pressure: The higher the vapour pressure, the easier it is for the substance to vapourize during an air exchange.

Boiling Point: The higher the boiling point, the less likely the substance is to vapourize during photocoagulation.

Amphiphilic: Liquids that are amphiphilic allow remaining droplets of silicone oil to combine into a homogeneous and transparent mixture with reduced viscosity that can be removed easily. F6H8 has limited amphiphilicity and can dissolve Silicone oil upto a 36% ratio. F4H5 can dissolve Silicone oil in any ratio.

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