

Epilamination is an essential surface treatment for lubrication. This treatment is intended to lower the surface tension of a material, thus preventing the spreading of lubricants on the treated surface. It provides the highest possible degree of safety to precision mechanical instruments by guaranteeing effective and long-lasting lubrication.

EPISURF-Neo® Epilames.



MSA	ml	Point d'ébullition	Kg
28.405-050	50	76° C	0.052
28.405-100	100	76° C	0.100
28.405-1L	1000	76° C	1.000

Episurf-Neo® is a high-performance epilame.

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Episurf-Neo® is fixed in a self-assembled monolayer of constant thickness on all surfaces used in watchmaking. Its properties make it a reference epilame for watch parts, in production in watch manufacturers or in after-sales service workshops, in Switzerland and all over the world.

Episurf-Neo® is an invisible epilame, of nanometric thickness, whose application process is fast and reproducible. The performance of Episurf-Neo® allows an effective, durable and resistant epilame for many wash cycles.

Episurf-Neo® is an environmentally friendly product that complies with European and Swiss regulations.

Ready for use solution.

Technical and environmental data :

Composition	Perfluoropolyether phosphonate
Diluent	Hydro fluoro olefin
Density at 25° C	1.58
Flash point	110° C
Freezing point	< -90° C
VOC	0 %
Do not deplete the ozone layer	0 (ODP)
Global warming potential	2.5
Surface tension	15 +/- 2 dyn.cm-1
Atmospheric lifetime	<10 days

MOEBIUS® Epilames.

The Fixodrop epilame is successfully used in the following application areas:

- Hydrophobic and oleophobic surface treatment (epilame) for mechanisms, electronic devices and mechanical parts
- Precision micromechanics (watches, timers, measuring devices, tools, etc.)
- On-board instrumentation and counters (automotive, aeronautical, naval, etc.)
- Cameras and optical instruments
- General mechanics (office machines, fans, etc.).



Moebius Fixodrop BS

MSA	ml	Type	Point d'ébullition	Kg
28.8980-100	100	BS	110° C	0.265
28.8980-1L	1000	BS	110° C	1.680
28.8981-100	100	BS-10	110° C	0.295
28.8981-250	250	BS-10	110° C	0.500
28.8981-1L	1000	BS-10	110° C	1.680
28.8982-1L	1000	BS-20	110° C	1.680

Fixodrop ES/BS is a modern epilame, developed by MOEBIUS, based on fluorinated synthetic resins, diluted in a solvent which meets current ecological standards.

- 8980 : concentrated solution, may only be dissolved with solvent MSA28.5700-1L
- 8981 : ready-to-use solution
- 8982 : ready-to-use solution recommended only at a production level with excellent working conditions and regular checks.

Technical features :

Nano metric film	Invisible
Active material	Fluorinated polyester
Diluent	Ecosolv (MSA28.5700-1L)
Density at 20° C	1.59 g/ml
Boiling point	110° C
Flash point	Non-flammable
Toxicity	Non toxic
Ozone depletion potential	0 (ODP)
Atmospheric life time	< 10 days
Thickness epilame film	Approx. 3 - 5 nm
Superficial tension	Approx. 20 mN/m
Stability epilame film	Until 150° C
Compatibility	All types of materials



Moebius Fixodrop W

MSA	ml	Type	Point d'ébullition	Kg
28.8970-1L	1000	W	100° C	1.680
28.8971-1L	1000	W-10	100° C	1.680

Fixodrop W is an aqueous economical epilame. The active substance is a high activity fluorine compo-nent. This washable epilame can be removed after a simple wash with an aqueous or alcoholic solution.

- 8970 : concentrated solution. Before dilution, the concentrate must be shaken vigorously, also during partial sampling. Any empty bottle should be rinsed
- 8971 : ready-to-use solution.

Technical features :

Nano metric film	Invisible
Active material	Fluorinated polymer
Diluent	Demineralised water
Density at 20° C	1.00 g/ml
Boiling point	100° C
Flash point	Non-flammable
Toxicity	Non toxic
Atmospheric life time	< 10 days
Thickness epilame film	Approx. 3 - 5 nm
Superficial tension	Approx. 16 mN/m
Stability of the polymer	Until 150° C
Compatibility	All types of materials (ruby, steel, brass, etc.)



Moebius Fixodrop WR-S

MSA	ml	Type	Point d'ébullition
28.7060-250	250	WR-S	110 ° C
28.7061-1L	250	WR-S	110 ° C
28.7061-250	1000	WR-S	110 ° C
28.7062-1L	250	WR-S	110 ° C
28.7062-250	1000	WR-S	110 ° C

Fixodrop ES/WR-S are the first series of our "Wash Resistance" (WR) epilams that have been specifically developed to improve the washing resistance of standard materials (steel, ruby, copper, etc.). These epilams can be applied to all materials, but they will be the most effective on these standard materials for which they have excellent resistance to washing.

- 7060 : concentrated solution, may only be dissolved with solvent MSA28.5700-1L
- 7061 : ready-to-use solution
- 7062 : ready-to-use solution recommended only at a production level with excellent working conditions and regular checks.

Technical features :

Nano metric film	Invisible
Active material	Fluorinated polymer
Diluent	Ecosolv (MSA28.5700-1L)
Density at 20° C	1.59 g/ml
Boiling point	110° C
Flash point	Non-flammable
Toxicity	Non toxic
Ozone depletion potential	0 (ODP)
Atmospheric life time	< 10 days
Thickness epilame film	Approx. 3 - 5 nm
Superficial tension	Approx. 20 mN/m
Stability epilame film	Until 150° C
Compatibility	All types of materials



Moebius Fixodrop WR-P

MSA	ml	Type	Point d'ébullition
28.7070-250	250	WR-P	110° C
28.7071-1L	250	WR-P	110° C
28.7071-250	1000	WR-P	110° C
28.7072-1L	250	WR-P	110° C
28.7072-250	1000	WR-P	110° C

Fixodrop ES/WR-P are the second series of our "Wash Resistance" (WR) epilams that have been specifically developed to improve the washing resistance of special or precious materials (gold, rhodium-plated, nickel, DLC, etc).
These epilams can be applied to all materials, but they will be the most effective on these standard materials for which they have excellent resistance to washing.

- 7070 : concentrated solution, may only be dissolved with solvent MSA28.5700-1L
- 7071 : ready-to-use solution
- 7072 : ready-to-use solution recommended only at a production level with excellent working conditions and regular checks.

Technical features :

Nano metric film	Invisible
Active material	Fluorinated polymer
Diluent	Ecosolv (MSA28.5700-1L)
Density at 20° C	1.59 g/ml
Boiling point	110° C
Flash point	Non-flammable
Toxicity	Non toxic
Ozone depletion potential	0 (ODP)
Atmospheric life time	< 10 days
Thickness epilame film	Approx. 3 - 5 nm
Superficial tension	Approx. 20 mN/m
Stability epilame film	Until 150° C
Compatibility	All types of materials



Moebius solvent for Fixodrop

MSA	ml	Visc. 20° C	Kg
28.5700-1L	1000	0.83	1.620

EcoSolv is suitable for replacing PFCs, PFPEs, HFEs, HFCs and HCFSs in specialized applications. The fa-vorable viscosity and density characteristics of this product allow superior cleaning as well as perfor-mances as carrier fluid.
- Solvent for diluting Fixodrop epilames MSA28.7060-250, MSA28.7070-1L et MSA28.8980-x (10% of concentrate solution / 90% of solvent)
- Cleaning agent
- Coating agent (carrier fluid) for fluorinated materials.

Technical features :

Solvent class	Hydrofluoroolefin
Density at 20° C	1.59 g/ml
Boiling point	110° C
Freezing point	< -90° C
Thermal conductivity	0.065 W/m-K
Surface tension	18 dyne/cm
Vapour pressure	2.9 kPa
Heat of vaporization	115 kJ/kg
Flammability point	Non-flammable
Toxicity	Non toxic
Ozone depletion potential	0 (ODP)
Atmospheric life time	< 10 days

Test oils to control the quality of the epilame.



1



2



3



4



5



6

Moebius test oil

MSA	No.	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C
28.9701-005	1	5	-20...+10(	150	40	18
28.9702-005	2	5	-40...+10(	59	55	39
28.9703-005	3	5	-40...+10(	99	56	35
28.9704-005	4	5	-30...+10(	145	48	21
28.9705-005	5	5	-30...+90	162	44	19
28.9706-005	6	5	-20...+80	233	63	21

There are 6 test oils to control the quality of the epilame (Fixodrop) deposited on a surface.

No. 1 (colourless) : this fluorinated oil is a positive control to confirm that the surface is epilamated. A spreading of this oil confirms the presence of the epilame.

No. 2 (orange) : without epilame on the surface, this oil spreads extremely easily compared to a classic watch oil. If this oil forms a drop and does not spread entirely on the surface, this confirms the good quality of the epilame.

No. 3 (red) : without epilame on the surface, this oil spreads extremely easily compared to a classic watch oil. If this oil forms a drop and does not spread on the surface, this confirms the good quality of the epilame.

No. 4 (yellow) : without epilame on the surface, this oil spreads easily like a standard watch oil with a moderate grip would do. If this oil forms a drop and does not spread on the surface, this confirms the good quality of the epilame.

No. 5 (blue) : without epilame on the surface, this oil spreads significantly like a watch oil with very good grip would do. If this oil forms a drop and does not spread on the surface, this confirms the good quality of the epilame.

No. 6 (green) : without epilame on the surface, this oil spreads very slightly like a watch oil with an excellent grip would do. If this oil forms a drop and does not spread on the surface, this confirms the good quality of the epilame.

LRCB Epilames.



MSA	ml	Point d'ébullition	Kg
28.8983-020	20	76° C	?
28.8983-100	100	76° C	0.245
28.8983-1L	1000	76° C	?

Epilame ECO-50 is a solution of a fluorinated compound that lowers the surface tension of watch components. The contact angle of the lubricants is increased to ensure their remain-in-place over time.

- Can be used on all metal substrates and on ruby
- Ready to use
- Non-flammable under normal conditions of use, no flash point
- Does not contain any persistent solvents as defined by Swiss and European law
- Contains no ozone-depleting solvents
- Compatible with common plastics.

Characteristics :

Dry extract : 50 mg/litre	50 mg/litre
Flash point : none	none
Density : 1.43 g/cm3	1.43 g/cm3
Boiling point : 76° C	76° C