

# 28



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## TABLE OF OILING

Functions	Calibres		
	Sizes 5''' - 18'''	Large sizes (clock, alarm clock)	Quartz Movements
Balance staff, fast wheels with low torque	9010 8000 9030 (low temperature) 9040 (ultra-low temperature)	9020 8030	9000 9024
Pivoting wheels with moderate to high torque	Synt-HP * D-5	Synt-HP * D-5	
Pallets, escape wheel tothing	9415 941, 9010	9415 9020	
Barrel mainspring	8200, 8141, 8201		
Barrel wall	8217 8212 (Aluminium), 8213 (Brass)	8141 8201	
High friction, cannon pinion, time setting, various chrono mechanisms	9501, 9504 K-6 **, L-5 **	9504 K-6 **	
Winding mechanism, calendar	Synt-HP *, D-5 K-6 **, L-5 **		
Setting lever, pusher, winding, spring pin	8300, 8301, 8302		8300, 8301, 8302
O-ring, waterproof gasket and casing	8513, 8516, H-10	8513, 8516, H-10	8513, H-10
Ball bearing, springs	V106		
Reversing wheel, clicks	V105		

\* : The choice of viscosity depends on the power reserves. Synt-HP oils are preferably used for ruby bearings. For brass bearings we recommend Microgliss D-4 or D-5.

\*\* : Under certain conditions, these products may be preferred to standard products. For optimal efficiency, these products can also be diluted in a benzene-type solvent and applied when dipping before lubrication with the standard product.

## Natural oils for watchmaking and micromechanics.



MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.8000-001	1	-15...+80	280	95	41	0.005
28.8000-010	10	-15...+80	280	95	41	0.022

Natural oil for general purposes.

Suitable for wristwatches and pocket watches, except springs and winding mechanisms.

*Light yellow aspect.*

## Moebius 8000



MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.8030-020	20	-18...+80	440	115	47	0.055
28.8030-100	100	-18...+80	440	115	47	?

Natural oil for clocks, music box movements and any other kind of precise mechanisms.

See 8031 for lower temperatures.

*Light yellow aspect.*

## Moebius 8030



MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.8031-020	20	-25...+80	390	110	45	0.054

Natural oil for clocks, music box movements and any other kind of precise mechanisms.

*Limpid yellow aspect.*

## Moebius 8031



MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.8040-020	20	-27...+80	570	150	56	0.055
28.8040-100	100	-27...+80	570	150	56	?

Natural oil for cuckoo-clocks as well as from small until tower clocks, and any other kind of precise mechanisms.

*Light yellow aspect.*

## Moebius 8040



MSA	ml	Temp. °C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.8141-020	20	-4...+100	11000	1250	310	0.057
28.8141-100	100	-4...+100	11000	1250	310	?

Natural oil with excellent stability and resistance qualities, used for mechanisms under high pressures. Suitable for cup-bearings, centre wheels, barrel arbours, canon-pinions and certain parts of automatic winding mechanisms. *Yellow-brown aspect.*

**Moebius 8141**

**Synthetic oils for watchmaking and micromechanics.**



MSA	ml	Temp. °C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9010-002	2	-30...+70	625	150	52	0.015
28.9010-010	10	-30...+70	625	150	52	0.037
28.9010-050	50	-30...+70	625	150	52	0.119
28.9010-1L	1000	-30...+70	625	150	52	1.615
-	-	-	-	-	-	-
28.9014-002	2	-35...+70	400	100	36	0.011
28.9014-010	10	-35...+70	400	100	36	0.033
28.9014-050	50	-35...+70	400	100	36	0.206

**Moebius Synt-A-Lube 9010 - 9014**

100% synthetic universal fluid thin oil based on ether and aliphatic alcohol with excellent resistance to ageing and good resistance to pressure. Also very effective for use under wet conditions. With excellent lubricity and outstanding grip, this oil is ideal for regulating parts and fast mobiles with low torque (pendulum pivots, escapements, certain wheels, etc.). *Aspect light blue-green (9010) and light yellow (9014).*

**9010-B**

MSA	ml	Temp. °C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9010-B/002	2	-30...+70	625	150	52	0.015
28.9010-B/010	10	-30...+70	625	150	52	0.037
28.9010-B/050	50	-30...+70	625	150	52	0.206

**9010-FL**

MSA	ml	Temp. °C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9010-002F	2	-30...+70	625	150	52	0.015
28.9010-01F	10	-30...+70	625	150	52	0.054
28.9010-050F	50	-30...+70	625	150	52	0.206



--- 9010-B dark blue



9010-FL fluorescent ---



**Moebius Synt-Visco-Lube 9020**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9020-002	2	-25...+80	1450	270	78	0.015
28.9020-010	10	-25...+80	1450	270	78	0.037
28.9020-050	50	-25...+80	1450	270	78	0.207

100% synthetic universal fluid thin oil based on ether and aliphatic alcohol with excellent resistance to aging and good resistance to pressure. Also very effective for use under wet conditions. With excellent lubricity and outstanding grip, this oil is mainly used for precision micromechanics. Can also be used for bearing lubrication of small calibres used instead of 9010 if the pressure resistance is not sufficient. Also particularly used for big calibres with higher pressure resistance, for oscillating weights and any other mobile parts of automatic movements.  
*Light yellow aspect.*



**--- 9020-FL fluorescent**

#### 9020-FL

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9020-002FL	2	-25...+80	1450	270	78	0.032
28.9020-010FL	10	-25...+80	1450	270	78	0.055
28.9020-050FL	50	-25...+80	1450	270	78	0.207

#### 9020-RED

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9020-050R	50	-25...+80	1450	270	78	0.207



**Moebius Synta-Visco-Lube 9024.**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9024-010	10	-25...+80	1450	270	80	0.037

100% synthetic rather fluid oil based on ether and aliphatic alcohol with excellent resistance to ageing. With excellent lubricity and outstanding grip, this oil is ideal for mobiles exposed to moderate pressure. Universal oil especially recommended for the lubrication of plastics.  
*Light yellow aspect.*



**Moebius Synta-Visco-Lube 9026**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9026-010	10	-25...+90	1800	235	72	0.030

Rather fluid 100% synthetic oil based on ether and aliphatic alcohol with excellent resistance to ageing. This oil provides both excellent lubricity and grip. The addition of molybdenum disulphide (MoS<sub>2</sub>) enhances its lubricity and improves its resistance to pressure.  
*Black aspect.*



**Moebius Synta-Visco-Lube 9027**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
<b>28.9027-005</b>	<b>5</b>	<b>-7...+80</b>	<b>7600</b>	<b>1050</b>	<b>242</b>	<b>0.022</b>

Viscous 100% synthetic oil based on ether and aliphatic alcohol with excellent resistance to ageing and excellent grip. Providing an excellent lubricity at high viscosity this oil is particularly suitable for noise attenuation. It is especially recommended for metal/plastic as well as for plastic/plastic contacts.  
*Yellow aspect.*



**Moebius Synt-Frigo-Lube 9030**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
<b>28.9030-002</b>	<b>2</b>	<b>-40...+60</b>	<b>180</b>	<b>60</b>	<b>25</b>	<b>0.015</b>
<b>28.9030-010</b>	<b>10</b>	<b>-40...+60</b>	<b>180</b>	<b>60</b>	<b>25</b>	<b>0.037</b>
<b>28.9030-050</b>	<b>50</b>	<b>-40...+60</b>	<b>180</b>	<b>60</b>	<b>25</b>	<b>0.205</b>

100% synthetic fluid thin oil based on ether and aliphatic alcohol, exhibiting an excellent behavior under low temperatures conditions. Also very effective for use under wet conditions. With excellent lubricity and outstanding grip, this oil is ideal for high precision micromechanics. Recommended for the lubrication of mechanisms exposed to low temperatures such as watches, counters, weather instruments, car, aircraft and boat instruments. It is advisable to epilame movements that also operate at normal or slightly higher temperatures.  
*Orange-yellow aspect.*

**9030-FL**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
<b>28.9030-002FL</b>	<b>2</b>	<b>-40...+60</b>	<b>180</b>	<b>60</b>	<b>25</b>	<b>0.030</b>
<b>28.9030-050FL</b>	<b>50</b>	<b>-40...+60</b>	<b>180</b>	<b>60</b>	<b>25</b>	<b>0.205</b>

**9030-GREEN**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
<b>28.9030-050V</b>	<b>50</b>	<b>-40...+60</b>	<b>180</b>	<b>60</b>	<b>25</b>	<b>0.205</b>



**Moebius Synt-Frigo-Lube 9034**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
<b>28.9034-002</b>	<b>2</b>	<b>-40...+60</b>	<b>180</b>	<b>60</b>	<b>24</b>	<b>0.010</b>
<b>28.9034-010</b>	<b>10</b>	<b>-40...+60</b>	<b>180</b>	<b>60</b>	<b>24</b>	<b>0.032</b>

100% synthetic fluid thin oil based on ether and aliphatic alcohol. Exhibiting a very good lubrication and an outstanding grip, this oil is ideal for use under low temperatures conditions. This universal product is especially recommended for the lubrication of plastics. The resistance of oil on plastics is dependent of its surface layer, therefore the need for an epilame has to be checked each time.  
*Light yellow aspect.*



**Moebius Arctic 9040**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9040-002	2	-52...+120	65	24	12	0.015
28.9040-010	10	-52...+120	65	24	12	0.044

100% synthetic very fluid and unctuous fine oil based on esters having a very good resistance to aging and having an extremely low degree of volatility.

This oil is specially designed for watches and precision instruments on boats and air crafts, parking meters and meteorological instruments working in low temperature conditions. It is also suitable for higher temperatures.

Due to low viscosity, this oil tends of spreading at normal temperature and it is recommended to do an epilame-coating.

*Light yellow aspect.*



**Moebius Syntescap 941**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.941-002	2	-15...+70	340	105	42	0.011
28.941-010	10	-15...+70	340	105	42	0.034
28.941-050	50	-15...+70	340	105	42	0.207

Special synthetic oil for pallets lubrication. Suitable for any watch and clock calibres.

100% synthetic fluid thin oil based on ether and aliphatic alcohol with excellent resistance to ageing. With excellent lubricity and outstanding grip, this oil is ideal for lubrication of pallets.

Suitable for all watch calibres, clocks and timepieces within the limits of the usual alternatives.

*Light yellow aspect.*

#### 941-FL

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.941-002FL	2	-15...+70	340	105	42	0.011
28.941-050FL	50	-15...+70	340	105	42	0.207



**Moebius Synt-HP 500 (9101)**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9101-002	2	-30...+100	2300	500	156	0.017
28.9101-020	20	-30...+100	2300	500	156	0.070
28.9101-050	50	-30...+100	2300	500	156	0.100

Synthetic oil for mechanical watches (train wheels, barrels, steel/steel friction), on-board instruments, micromotors, miniature ball bearings, etc. The SYNT-HP is convenient for high pressure where stability is needed on precise mechanisms and where high demands are placed on the oil's ageing stability.

*Red and fluorescent (-FL) red aspect. Light yellow aspect for colourless items (-SC).*

#### 9101-SC

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9101-02S	2	-30...-100	2300	500	156	0.017
28.9101-20S	20	-30...-100	2300	500	156	0.070

#### 9101-FL

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9101-002FL	2	-30...+100	2300	500	156	0.017
28.9101-020FL	20	-30...+100	2300	500	156	0.070





**Moebius Synt-HP 750 (9102)**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9102-002	2	-35...+100	3300	750	220	0.017
28.9102-020	20	-35...+100	3300	750	220	0.070
28.9102-050	50	-35...+100	3300	750	220	0.100

Synthetic oil for mechanical watches (train wheels, barrels, steel/steel friction), on-board instruments, micromotors, miniature ball bearings, etc. The SYNT-HP is convenient for high pressure where stability is needed on precise mechanisms and where high demands are placed on the oil's ageing stability.

*Red and fluorescent (-FL) red aspect. Light yellow aspect for colourless items (-SC).*

**9102-SC**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9102-02S	2	-35...-100	3300	750	220	0.030
28.9102-20S	20	-35...-100	3300	750	220	0.070

**9102-FL**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9102-002FL	2	-35...+100	3300	750	220	0.030
28.9102-020FL	20	-35...+100	3300	750	220	0.070



**Moebius Synt-HP 1000 (9103)**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9103-002	2	-30...+100	4700	1000	312	0.017
28.9103-020	20	-30...+100	4700	1000	312	0.070
28.9103-050	50	-30...+100	4700	1000	312	0.100

Synthetic oil for mechanical watches (train wheels, barrels, steel/steel friction), on-board instruments, micromotors, miniature ball bearings, etc. The SYNT-HP is convenient for high pressure where stability is needed on precise mechanisms and where high demands are placed on the oil's ageing stability.

*Red, light yellow (-SC) and fluorescent light yellow (-FL) aspects.*

**9103-SC**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9103-02S	2	-30...-100	4700	1000	312	0.029
28.9103-20S	20	-30...-100	4700	1000	312	0.070
28.9103-50S	50	-30...-100	4700	1000	312	0.100

**9103-FL**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9103-002FL	2	-30...+100	4700	1000	312	0.017
28.9103-020FL	20	-30...+100	4700	1000	312	0.070
28.9103-050FL	50	-30...+100	4700	1000	312	0.100





**Moebius Synt-HP 1300 (9104)**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9104-002	2	-25...+100	5900	1250	380	0.017
28.9104-020	20	-25...+100	5900	1250	380	0.070
28.9104-050	50	-25...+100	5900	1250	380	0.100

Synthetic oil for mechanical watches (train wheels, barrels, steel/steel friction), on-board instruments, micromotors, miniature ball bearings, etc. The SYNT-HP is convenient for high pressure where stability is needed on precise mechanisms and where high demands are placed on the oil's ageing stability.

*Red, light yellow (-SC) and fluorescent light yellow (-FL) aspects.*

#### 9104-SC

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9104-02S	2	-25...-100	5900	1250	380	0.017
28.9104-20S	20	-25...-100	5900	1250	380	0.070
28.9104-50S	50	-25...-100	5900	1250	380	0.100

#### 9104-FL

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9104-02F	2	-25...+100	5900	1250	380	0.017
28.9104-20F	20	-25...+100	5900	1250	380	0.070
28.9104-50F	50	-25...+100	5900	1250	380	0.100



**Moebius OSI-220 9800**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9800-250	250	-30...+120	745	220	86	-

100% synthetic universal oil exhibiting with very good stability and lubricity. With an excellent viscosity index, this silicone-free oil has a stable viscosity even at low temperatures.

This product is ideal for an efficient lubrication over a wide temperature range.

*Ligth yellow aspect.*

**"Microgliss" oil made of classic and silicon oils, for watchmaking and precision micromechanics. The complete range of Microgliss lubricants is composed of 5 groups and was specifically conceived for watchmaking and precision mechanics. Each group contains several products of different viscosities but with the same base.**



**Moebius Microgliss C-7**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.C7-1L	1000	-15...+100	2600	350	103	1.625

The Microgliss C-7 oil is a mixture of mineral and vegetable oils especially selected for their good lubricity. It presents both very good grip and very good ageing resistance.

Application : micromotors and lubrication problems in watchmaking (cup-bearings and centre wheels).

*Yellow-brown aspect.*



D-3



D-4



D-5

**Moebius Microgliss (Group D)**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.D2-050	50	-30...+70	260	75	29	0.110
-	-	-	-	-	-	-
28.D3-020	20	-22...+80	900	190	64	0.055
28.D3-050	50	-22...+80	900	190	64	0.112
-	-	-	-	-	-	-
28.D4-020	20	-15...+80	1900	330	100	0.055
28.D4-050	50	-15...+80	1900	330	100	0.112
-	-	-	-	-	-	-
28.D5-020	20	-5...+80	7300	1200	295	0.055
28.D5-050	50	-5...+80	7300	1200	295	0.113
28.D5-1L	1000	-5...+80	7300	1200	295	0.899

The Microgliss D group is declined with several increasing viscosities from D-2 to D-5. These oils are a mixture of mineral and refined vegetable oils with special additives to provide very good stability and good resistance to pressure.

Oil D2 works well at low temperatures but a surface pre-treatment against spreading is needed (with epilame).

Oils D3, D4 and D5 are used in bearings exposed to high pressures according to safety margins.

*Blue-green (D2 and D3) and brown-green (D4 and D5) aspects.*



**Moebius Silicone H-10**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.H10-015	15	0...+120	17000	11000	9500	-
28.H10-100	100	0...+120	17000	11000	9500	-
28.H10-1L	1000	0...+120	17000	11000	9500	0.858

Dimethyl type silicon oil rarely used as lubricant.

Application : used as bathing solutions or as water resistant agents due to their hydrophobic properties.

This oil is used as water resistant product and anti-vibration agent.

*Colourless aspect.*



**Moebius Silicone I-31-B**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.I31-B-1L	1000	-35...+200	1500	500	210	-

Low viscosity silicone oil, exhibiting a good lubricity with respect to standard silicone oils. This lubricant exhibits exceptional stability and an excellent phase separation with regards to water. It is ideal for high temperature applications requiring sufficient lubricity.



**Moebius Silicone I-4**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
<b>28.I4-100</b>	<b>100</b>	-35...+200	3100	1000	405	-

Rather viscous silicone oil, exhibiting good lubricity with respect to silicone standard oils. This lubricant exhibits exceptional stability and an excellent phase separation with regards to water. It is ideal for high temperature applications requiring sufficient lubricity.

*Light green aspect.*



**Moebius Silicone TH7-SC**

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
<b>28.TH7-002</b>	<b>2</b>	-30...+110	440	290	198	0.030

This product is a mixture of polysiloxanes. With moderate to low lubricity, it is ideally suited for the lubrication of plastics.

This oil has an excellent stability at high and low temperatures as well as to oxidation.

*Colourless aspect.*

Natural greases for watchmaking and micromechanics.



MSA	ml	Temp. ° C	Visc. 40° C	Visc. 50° C	Visc. 60° C	Visc. 80° C	Kg
28.8200-015	15	-40...+80	Solid	30	20	13	-
28.8200-050	50	-40...+80	Solid	30	20	13	0.130
28.8200-1L	1000	-40...+80	Solid	30	20	13	1.410

Very soft natural grease with important thixotropic properties. With vegetable oils as additive, it is ideal for the lubrication of springs, friction of large surfaces, slow mobiles and ball bearings. Fusible, it can be used hot for hardening lubrication. *Cloudy yellow aspect.*

Moebius 8200



--- 8200-FL fluorescent

8200-FL

MSA	ml	Temp. ° C	Visc. 40° C	Visc. 50° C	Visc. 60° C	Visc. 80° C	Kg
28.8200-015FL	15	-40...+80	Solid	30	20	13	-
28.8200-1FL	1000	-40...+80	Solid	30	20	13	1.410



Moebius 8201

MSA	ml	Temp. ° C	Visc. 40° C	Visc. 60° C	Visc. 80° C	Kg
28.8201-015	15	-40...+80	Solid	22	13	-
28.8201-050	50	-40...+80	Solid	22	13	0.150

Very soft natural grease with remarkable thixotropic properties. Can be used in molten state. Vegetable oils as additive provide it excellent lubricity as well as performance. The addition of molybdenum disulphide (MoS2) further enhances its lubricity and improves its resistance to pressure. *Black aspect.*



Moebius 8203

MSA	ml	Temp. ° C	Visc. 20° C	Visc. 40° C	Visc. 60° C	Kg
28.8203-015	15	-40...+80	210	-	-	-
28.8203-050	50	-40...+80	210	-	-	-

Thixotropic grease with a gelatinous consistency. With vegetable oils as additive, it offers a good lubricating power and a very good grip. It is ideal for bearings and applications submitted to moderate to large pressures. Not to be used hot. *Red aspect.*



MSA	ml	Visc. 40° C	Visc. 60° C	Visc. 80° C	Kg
28.8207-015	15	Solid	20	13	-
28.8207-050	50	Solid	20	13	0.140

Very flexible and thixotropic classic grease. The vegetable oils used as an additive give it a very good lubricating power. The addition of graphite enhances its lubricity and its resistance to pressure. *Black aspect.*

Moebius 8207



**Moebius 8212**



--- 8212-SC colourfree

MSA	ml	Temp. ° C	Visc. 20° C	Visc. 40° C	Visc. 60° C	Kg
28.8212-015	15	-40...+80	200	-	-	-

Soft grease (Glissalube B). The vegetable oils used as additive give it a good lubricating power. Developed for the lubrication of barrel drums, it provides moderate braking.

Specially recommended for aluminium barrel walls.

*Red aspect.*

**8212-SC**

MSA	ml	Temp. ° C	Visc. 20° C	Visc. 40° C	Visc. 60° C	Kg
28.8212-50S	50	-40...+80	200	-	-	0.160



**Moebius 8213**

MSA	ml	Temp. ° C	Visc. 20° C	Visc. 40° C	Visc. 60° C	Kg
28.8213-015	15	-40...+80	205	-	-	-

Hard grease (Glissalube A). The vegetable oils used as an additive give it a good lubricating power. Developed for the lubrication of barrel drums, it provides effective braking.

Specially recommended for brass barrel walls.

*Orange aspect.*



**Moebius 8217**

MSA	ml	Temp. ° C	Visc. 20° C	Visc. 40° C	Visc. 60° C	Kg
28.8217-015	15	-40...+80	-	-	-	-

Very soft grease (Glissalube 20) which has a good lubricity. Developed for the lubrication of barrel drums, it assures efficient braking.

This grease is recommended for the lubrication of all types of barrels.

*Brown aspect.*



Moebius 8300

MSA	ml	Temp. ° C	Visc. 40° C	Visc. 60° C	Visc. 80° C	Kg
28.8300-015	15	-40...+80	Solid	-	11	-
28.8300-050	50	-40...+80	Solid	-	11	0.130
28.8300-1L	1000	-40...+80	Solid	-	11	1.410

Soft grease with notable thixotropic properties. With vegetable oils as additive, this grease has a very good lubricating power and is specially recommended for springs and winder functions or any other applications subject to heavy friction.

*Colourless-yellowish aspect.*



--- 8300-FL fluorescent

8300-FL

MSA	ml	Temp. ° C	Visc. 40° C	Visc. 60° C	Visc. 80° C	Kg
28.8300-015F	15	-40...+80	Solid	-	11	-



Moebius 8301

MSA	ml	Temp. ° C	Visc. 40° C	Visc. 60° C	Visc. 80° C	Kg
28.8301-015	15	-40...+80	Solid	-	11	-
28.8301-1L	1000	-40...+80	Solid	-	11	-

Hard grease, slightly thixotropic. With vegetable oils as additive, as well as graphite as a solid additive, this grease has a very good lubricating properties and a good resistance to pressure.

With its excellent grip, this grease is recommended for applications subject to heavy friction.

*Black aspect.*



Moebius 8302

MSA	ml	Temp. ° C	Visc. 40° C	Visc. 60° C	Visc. 80° C	Kg
28.8302-015	15	-40...+80	Solid	-	14	-

Hard grease, slightly thixotropic. With vegetable oils as additive, as well as molybdenum disulphide graphite (MoS<sub>2</sub>) as a solid additive, this grease has a very good lubricating properties and a good resistance to pressure.

With its excellent grip, this grease is recommended for applications subject to heavy pressure.

*Grey-black aspect.*

Synthetic greases for watchmaking and micromechanics.



Moebius 9415

MSA	ml	Temp. ° C	Visc. 20° C	Kg
28.9415-002	2	-30...+80	110	0.016
28.9415-010	10	-30...+80	110	0.038
28.9415-100	100	-30...+80	110	0.370

100% synthetic soft thixotropic grease presenting an excellent stability and a very good lubricity allowing effective wear reduction. Specially developed for the lubrication of the escapement, it allows the formation of an efficient lubrication film. For micromechanics, it is used in the following areas : miniature ball bearings, step-by-step motors, high frequencies, synchronies, etc. *Yellow aspect.*

--- 9415-FL fluorescent



9415-FL

MSA	ml	Temp. ° C	Visc. 20° C	Kg
28.9415-2F	2	-30...+80	110	-
28.9415-01F	10	-30...+80	110	0.054



Moebius 9500

MSA	ml	Temp. ° C	Visc. 20° C	Kg
28.9500-010	10	-20...+100	1350	-

100% synthetic firm braking grease based on a polyol ester, developed for the lubrication of the barrel. With a very good crush-ing stability and with special additives, it presents an excellent grip and allows to protect surfaces against wear. Suitable for appli-cations at high pressure. Grease particularly adapted to the lubrication of barrel drums. *Black aspect.*





**Moebius 9501**

- \* Syringe
- \*\* Bottle

MSA	ml	Temp. °C	Visc. 20° C	Kg
28.9501-010-B **	10	-30...+80	176	0.053
28.9501-010-S *	10	-30...+80	176	0.021
28.9501-050 **	50	-30...+80	176	0.064

100% synthetic and thixotropic soft grease, developed to resolve friction problems like time setting, winding and calendar mechanisms, rotating bezels of diving watches and other frictions between steels. The base is a mixture of synthetic oils of high stability, acquiring the necessary consistency of a grease by adding an Aerosil. Suitable for medium loads for a wide range of applications.

*Blue aspect.*

**9501-R**



**9501-R rouge**

MSA	ml	Temp. °C	Visc. 20° C	Kg
28.9501-R-010 *	10	-30...+80	176	0.021

**9501-SC**



**9501-FL fluorescent**

MSA	ml	Temp. °C	Visc. 20° C	Kg
28.9501-10S *	10	-30...+80	176	0.022

**9501-FL**

MSA	ml	Temp. °C	Visc. 20° C	Kg
28.9501-01F-B **	10	-30...+80	176	0.021
28.9501-01F-S *	10	-30...+80	176	0.021
28.9501-05F **	50	-30...+80	176	0.064



**Moebius 9520 fluorescent**

MSA	ml	Temp. °C	Visc. 20° C	Kg
28.9520-10F	10	-20...+100	305	-

Partially synthetic soft grease with very good lubricity under high to very high pressure conditions. It is formulated with a high performance solid lubricant to significantly reduce wear.

Suitable for a wide range of applications (cannon-pinion friction, time setting friction, winding mechanism, calendar, date, chronograph).

The addition of a fluorescent tracer makes it possible to visualize the presence of small amounts of grease under UV illumination.

*Black aspect.*



**Moebius 9550**

MSA	ml	Temp. °C	Visc. 20° C	Kg
28.9550-010	10	-20...+100	1350	-

100% synthetic soft grease with a high crush stability presenting a very good lubricity under high pressure conditions allowing to reduce notably the wear. This grease is made with a lithium-based soap.

Suitable for a wide range of applications : time setting friction, winding mechanism, calendar and chronograph.

*Red aspect.*



**Moebius 9504**  
\* Syringe

MSA	ml	Temp. ° C	Visc. 20° C	Kg
28.9504-005	5	-20...+100	305	0.047
28.9504-10	10	-20...+100	305	0.057
28.9504-10-S *	10	-20...+100	305	0.024
28.9504-50	50	-20...+100	305	0.125

100% synthetic soft grease with a high crush stability presenting a very good lubricity under high pressure conditions allowing to reduce notably the wear. Grease 9501 is the basic component.

The addition of a grease based on a metal soap increases the consistency and improves adhesion. A neutral additive provides excellent high-pressure resistance and guarantees a good reduction in wear.

Suitable for any metal/metal friction of medium and high pressures.

Applications : time setting friction, winding mechanism, calendar and chronograph.

*Light blue aspect.*

**9504-SC**



--- 9504-SC colourless

MSA	ml	Temp. ° C	Visc. 20° C	Kg
28.9504-05S	5	-20...+100	305	0.047
28.9504-10S	10	-20...+100	305	0.057
28.9504-10S-S *	10	-20...+100	305	0.020
28.9504-50S	50	-20...+100	305	0.125

**9504-FL**



--- 9504-FL fluorescent

MSA	ml	Temp. ° C	Visc. 20° C	Kg
28.9504-05F	5	-20...+100	305	0.047
28.9504-10F	10	-20...+100	305	0.057
28.9504-50F	50	-20...+100	305	0.125

**Waterproof silicon greases.**



**Moebius 8513**

MSA	ml	Temp. ° C	Visc. 20° C	Kg
28.8513-010	10	-60...+150	Solid	0.015
28.8513-050	50	-60...+150	Solid	0.067
28.8513-100	100	-60...+150	Solid	0.145
28.8513-200	200	-60...+150	Solid	0.320

Firm sealant grease. Based on its chemical nature, this silicone grease exhibits very high inertia and resistance to external aggressions such as UV light or oxidative stress. Moreover, this product has very good demixing properties for water. Ideal for repairing and control of waterproof watches. *Transparent white aspect.*



MSA	Contents	Kg
28.002	2 g	0.030

Box with grease Moebius® 8513.



**Moebius 8516**

MSA	ml	Temp. ° C	Visc. 20° C	Kg
28.8516-10	10	-60...+120	Soft	0.015
28.8516-50	50	-60...+120	Soft	0.072
28.8516-200	200	-60...+120	Soft	0.550

Sealing grease softer than 8513. Based on its chemical nature, this silicone grease exhibits very high inertia and resistance to external aggressions such as UV light or oxidative stress. Moreover, this product has very good demixing properties for water. Ideal for repairing and control of waterproof watches. *Transparent white aspect.*

## Moebius® Quartz Oil.



## Moebius Quartz Oil 9000

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.9000-002	2	-35...+65	395	100	35	0.010

Universal synthetic lubricant for quartz analogue watches. Suitable for plastic like polyacetal (Delrin®), polyamides, polycarbonates.

Very adherent and doesn't spread out in normal use conditions.

*Red aspect*

## Moebius® Microgliss Oils.



## Moebius Microgliss K-6

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C
28.K6-100	100	-5...+120	2600	450	125

This Microgliss oil has both a very good lubricity and resistance to pressure. It includes as additive a very powerful anticorrosive agent. This oil is ideal for applications with severe corrosion risks.

This product is recommended for dip lubrication.



## Moebius Microgliss K-7

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.K7-1L	1000	-15...+100	630	130	42	1.630

This Microgliss oil has a very good lubricating power. Formulated with a wetting agent as well as an anti-corrosive agent, this product spreads perfectly. It is recommended for dip lubrication for applications with significant corrosion risk.



## Moebius Microgliss L5

MSA	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C	Kg
28.L5-100	100	-3...+80	8300	1200	310	?
28.L5-1L	1000	-3...+80	8300	1200	310	1.630

Lubricant based on refined mineral oils and vegetal oils.

With a very good lubricating power and remarkable grip, this product has been specially developed for applications with a significant corrosion risk and requiring good lubricity. Diluted in an alkane solvent, this oil is ideal for dip lubrication.

Moebius® oil and grease kits.



MSA	Packaging size	Kg
<b>28.QUA2017</b>	200 x 75 x 30 mm	0.350

Lubricating kit for quartz watches.

- Contents :*
- 2 ml oil 9014
  - 2 ml oil 9104-SC
  - 5 ml grease 8212-SC
  - 5 ml grease 8302
  - 5 ml grease 9501-SC.



MSA	Packaging size	Kg
<b>28.MEC2017</b>	200 x 75 x 30 mm	0.350

Lubricating kit for mechanical watches.

- Contents :*
- 2 ml oil 9010
  - 5 ml oil 9104
  - 2 ml grease 9415
  - 5 ml grease 9501
  - 5 ml grease 9504.

Lubeta oils.



MSA	ml	Kg
<b>28.V105-010</b>	10	0.052
<b>28.V105-100</b>	100	0.197

Ready-to-use solution Lubeta V105 for dip lubrication. Composed of a solid lubricant type fatty acid, this allows a homogeneous deposition of a thin lubricating film.

This product is typically recommended for the lubrication of inversion wheels and paws. Ideal for after-sales services.



MSA	ml	Kg
<b>28.V106-010</b>	10	0.052
<b>28.V106-100</b>	100	0.180

Ready-to-use solution Lubeta V106 for dip lubrication. This allows homogeneous deposition of a thin film of lubricant.

This product is typically recommended for lubrication of ball bearings and springs. Ideal for after-sales services.

## UV lamps.

PRECITEC  
QUALITY



MSA	Visc. 0° C	Kg
<b>00.682</b>	Ø 13 x 125 mm	0.033

UV lamp (pen light) for controlling fluorescent oils.  
Light colour : blue/violet. 395 Nm.

*Works with 2 AAA batteries (not included).*

PRECITEC  
QUALITY



MSA	Visc. 0° C	Kg
<b>00.683</b>	Ø 25 x 140 mm	0.215

UV flashlight for controlling fluorescent oils and detecting dust.  
Light colour : white. 365 Nm.

*Delivered with 1 rechargeable battery 18650 (2000 mAh - 3.7 V) and 1 charger.*

LRCB synthetic oils and greases for the watchmaking industry.



MSA	Packaging size	Kg
28.211	200 x 73 x 32 mm	0.140

Kit of 5 synthetic oils and greases (5 small bottles of 5 ml).

Contents :  
 - Oil MSA28.210-005  
 - Oil MSA28.275-005  
 - Grease MSA28.515-005  
 - Grease MSA28.620-005  
 - Grease MSA28.735-005.  
 Delivered in 1 plastic box.



MSA	ml	Temp. °C	Visc. 20° C	Kg
28.210-005	5	...-30	140	0.011

Fine oil for bearing of balance staff and pallet fork wheel. Contains a fluorescent additive.  
 Cyan colour.  
 See kit MSA28.211.



MSA	ml	Visc. 20° C	Kg
28.275-005	5	1300	0.012

Thick oil for bearing of train wheel axle and barrel arbor.  
 Red color.  
 See kit MSA28.211.



MSA	ml	Kg
28.515-005	5	0.012

Thixotropic grease for escapement. Contains a fluorescent additive.  
 Yellow colour.  
 See kit MSA28.211.



MSA	ml	Kg
28.620-005	5	0.012

Grease for mechanism and cannon pinion based on microsilica. Contains a fluorescent additive.  
 For ferrous alloys, not suitable for copper alloys.  
 Red color.  
 See kit MSA28.211.





MSA	ml	Kg
<b>28.735-005</b>	5	0.013

Thick grease for mechanism based on PTFE. Can be used in some barrels. Suitable for ferrous and copper alloys. Opaque white colour. See kit MSA28.211.



MSA	ml	Visc. 20° C	Kg
<b>28.272-005</b>	5	500	0.012
<b>28.273-005</b>	5	750	0.012
<b>28.274-005</b>	5	1000	0.012

Thick oil for bearing of train wheel axle and barrel arbor. Red color.

SEIKO® oil.

SEIKO



MSA	ml	Kg
28.103	2	0.010

SEIKO® AO-3 oil for train wheels and escapements.

SEIKO® greases.

SEIKO



MSA	Contents	Size	Kg
28.104	4 g	Ø 36 x 18 mm	0.014

SEIKO® TSF-451 silicon grease.

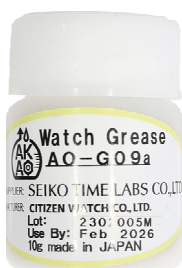
- Mainly used in the repair and control of waterproof watches
- Excellent lubricant with water-displacing property
- For the lubrication of crown gaskets, case backs and bezels.



MSA	Contents	Kg
28.004	2 g	0.030

Box with grease Seiko® TSF-451.

SEIKO



MSA	Contents	Size	Kg
28.109	10 g	Ø 30 x 45 mm	0.036

Grease Seiko® AO-G09a.

- Long service life with a durability of over 20 years
- High resistance to corrosion
- Highly versatile : suitable for both engineering plastics and metals.

**LA JURASSIENNE® oil.**



MSA	ml	Size	Kg
<b>28.J.0100</b>	100	Ø 45 x 105 mm	0.154

LA JURASSIENNE® mineral oil for wall clocks.  
 - Severely refined and compatible with strong oxidants  
 - Temperature of auto-inflammation at 200° C  
 - Stable product in usual stocking temperatures, manipulation and use.

**Lubristyl® precision oil pen.**



MSA	ml	Temp. ° C	Kg
<b>17.210</b>	Ø 13 x 155 mm	6 cc	0.028

Lubristyl® precision oil pen, pen shape.  
 Drop by drop lubricant dispenses thanks to the needle pump. Possibility to easily re-absorb the extra oil by briefly and rapidly pushing the needle.  
*Delivered with 6 cc oil.*

**Spare part :**

MSA	Item	Kg
<b>17.210-100</b>	Oil refill, 100 ml	0.113



**FOMBLIN® UT18 grease.**



MSA	Colour	Packaging	Size	Kg
28.UT18-020 (1)	White	Pot of 20 g	Ø 34 x 40.5 mm	0.025
28.UT18-100 (2)	White	Tube of 100 g	Ø 30 x 145 mm	0.115

FOMBLIN® UT18 grease. Advantages :

- Excellent lubricant for multiple uses
- Compatible with all sorts of material like plastic, metals, glass, etc.
- It resists to oxidation and other chemical products
- Used in watchmaking for greasing gaskets
- Temperatures use range : from -30° C to +250° C.



MSA	Contents	Kg
28.001	2 g	0.030

Box with grease Fomblin® UT18.

**SILCON-7® grease.**



MSA	Packaging	Size	Kg
28.652	Tube of 10 g	Ø 12 x 56 mm	0.012

SILCON-7® waterproofing grease.

- For watch cases
- It stops gaskets from drying and encrusting in the thread.



MSA	Contents	Kg
28.000	2 g	0.030

Box with grease Silicon-7®.

**BLASOLUBE® grease.**



MSA	) then 'Type'when 300 then '	Packaging	Kg
28.301	302	Tube of 250 g	0.277

BLASOLUBE® 302 universal lubricant grease for a very wide-ranging use.  
 - Soft/half-hard consistency  
 - Temperatures use range : from -20° C up to +150/200° C.



MSA	) then 'Type'when 300 then '	Packaging	Kg
28.307	301	Tube of 400 g	0.460

BLASOLUBE® 301 universal lubricant grease for a very wide-ranging use.  
 - Soft consistency  
 - Temperatures use range : from -30° C up to +120/150° C.

**CHRONOGREASE KLÜBER P125® grease.**



MSA	Packaging	Size	Kg
28.102	Pot of 5 g	Ø 22.5 x 31 mm	0.008

CHRONOGREASE KLÜBER P125® grease.  
 Recommended by ETA SA for greasing mainsprings (calibres 7750, A07111, etc.).

## LUBRIBOX GREASES

**LUBRIBOX : box with 2 foam cushions impregnated with silicone grease allowing to lubricate O-Ring gaskets up to Ø 60 mm.**



MSA	Contents	Kg
28.000	2 g	0.030

Box with grease Silicon-7®.



MSA	Contents	Kg
28.001	2 g	0.030

Box with grease Fomblin® UT18.



MSA	Contents	Kg
28.002	2 g	0.030

Box with grease Moebius® 8513.



MSA	Contents	Kg
28.003	2 g	0.030

Box with grease Molykote® 111.



MSA	Contents	Kg
28.004	2 g	0.030

Box with grease Seiko® TSF-451.



MSA	Contents	Kg
28.220		0.028

Box without grease.

**JISMAA® lubricants.**



MSA	Colour	Packaging	Size	Kg
28.200	Blue	Tube of 7 g	85 x 20 x 15 mm	0.009
28.205	Green	Tube of 7 g	85 x 20 x 15 mm	0.009

JISMAA® synthetic lubricant entirely mineral, specially recommended for precision instruments, measuring instruments, counters, quartz movements, optical instruments, etc. Its deterioration, spreading and evaporation are nil. This lubricant can accept extreme temperature variations (-50° C to +100° C), big centrifugal force (30,000 rpm) and strong friction. No oxidation.

*Recommended use :*  
 - BLUE for steel/steel (alloys frictions, iron alloy carbon/Mo/steel/Cr)  
 - GREEN for steel/brass (alloys frictions, iron alloy copper Cu/Be/Ni).  
 Recommended use with JISMAA® oilers illustrated in chapter 17 (MSA17.050...17.052 and MSA17.060...17.063).

**MOLYKOTE® lubricants.**



MSA	Colour	Packaging	Size	Kg
28.303	White	Tube of 100 g	Ø 35.5 x 170 mm	0.110

MOLYKOTE® 111 waterproofing paste based on silicone grease.

Advantages :

- Excellent water resistance, even see water
- Good resistance to most chemical products
- Low volatility
- The purpose is to avoid crowns and tubes gaskets sticking to metal
- Temperatures use range : from -40° C up to +200° C.



MSA	Contents	Kg
28.003	2 g	0.030

Box with grease Molykote® 111.



MSA	Colour	Packaging	Size	Kg
28.300	White	Tube of 50 g	Ø 35 x 130 mm	0.077
28.308	White	Box of 250 g	Ø 100 x 50 mm	0.280

MOLYKOTE® DX white consistent paste made of lithium grease.

- Very high load capacity
- Reduces friction and wearing
- Very good resistance to the washing out
- Protection against cold temperature soldering
- Good protection against oxidation and excellent protection against contact corrosion. It reduces incidents of grinding and seizing
- Temperatures use range : from -25° C to +125° C.



**KT-22® lubricants.**



MSA	Packaging	Size	Kg
28.651	Pot of 12 g	Ø 34 x 32 mm	0.017

KT-22® lubricant for multiple uses.  
For greasing gear trains on watches and various instruments, waterproofing crowns, pushers and case backs gaskets.

**Loosening lubricant.**



MSA	Packaging	Size	Kg
28.654	Syringe of 6 cc	Ø 15 x 155 mm	0.015

High-powered loosening lubricant for screws.

**SUPER LUBE® multi-use Syncolon® lubricant.**

Main features :

- The product is 100% synthetic and biodegradable / No petroleum and no silicon component
- Non-corrosive and non oxidable / Better lubrication thanks to PTFE suspension particles
- Totally neutral on plastic, paints, clothes, rubber or wood / It doesn't stain
- 100% hot, cold and saltwater resistant / It doesn't evaporate / Without odour
- Dielectric and prevent seizure / It doesn't dry / Efficient between -40° C and +232° C.



MSA	Packaging	Size	Kg
28.SL007	Pen 7 g (in blister)	Ø 15 x 120 mm	0.022



MSA	Packaging	Size	Kg
28.SL012	Tube of 12 g (in blister)	Ø 25 x 110 mm	0.025



MSA	Packaging	Size	Kg
28.SL085	Tube of 85 g (in blister)	Ø 55 x 145 mm	0.110



MSA	Packaging	Size	Kg
28.SL300	Spray 300 ml	Ø 65 x 200 mm	0.380



MSA	Packaging	Size	Kg
28.SL400	Pot 400 g	Ø 100 x 95 mm	0.455



MSA	Packaging	Size	Kg
28.SL-1L	1 litre with vaporizer	105 x 60 x 225 mm	0.875

**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 and EPISURF-MT60®.**



**EPISURF-NEO®**

MSA	ml	Type	Kg
28.405-020	20	Neo®	0.083
28.405-050	50	Neo®	0.151
28.405-100	100	Neo®	0.265
28.405-1L	1000	Neo®	2.360

**EPISURF-MT60®**

MSA	ml	Type	Kg
28.406-020	20	MT60®	0.083
28.406-050	50	MT60®	0.151
28.406-100	100	MT60®	0.265
28.406-1L	1000	MT60®	2.360

EPISURF® is a range of high-performance epilame products. An epilame product is a surface agent that prevents the spreading of oils by reducing the surface tension of the treated part. The EPISURF® product range includes :

- EPISURF-NEO®, a solution of a PFPE bisphosphonate in an HFO fluorinated solvent
- EPISURF-MT60®, a solution of a PFPE bisphosphonate in an HFE fluorinated solvent.

These two products have similar performances because the active molecule is the same, only the solvent is different. This allows them to be interchanged without modifying the usage procedure or the performance.

They fix themselves in self-assembled monolayers of constant thickness and are perfectly invisible on all surfaces used in watchmaking. Their properties make them the epilames reference for epilamizing watch parts, in movement production in watchmaking manufacturers or in after-sales service workshops, in Switzerland and all around the world. Their performance ensures effective, durable epilamizing, resistant to numerous washing cycles. They comply with environmental standards and meet European and Swiss regulations.

Ready-to-use solution.

Physico-chemical characteristics :	EPISURF-NEO®	EPISURF-MT60®
- Surface tension	18.0 dyn.cm-1	13.6 dyn.cm-1
- Appearance	Colourless	Colourless
- Flash point	None	None
- Boiling point	110° C	76° C
- Vapour pressure	2.8 kPa (@25° C)	14.5 kPa (@25° C)
- Freezing point	<-90° C	-138° C
- Density at 25° C	1.58	1.43
- Ozone depletion potential (ODP)	0	0
- Global warming potential (GWP)	2.5	55
- Atmospheric lifetime (ALT)	< 10 days	0.9 years
- Volatile organic compound (VOC)	100%	100%

**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	Boiling point	Kg
28.8980-100	100	BS	110° C	0.265
28.8980-1L	1000	BS	110° C	1.680
28.8981-010	10	BS-10	110° C	0.061
28.8981-100	100	BS-10	110° C	0.295
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 :*

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



**Moebius Fixodrop W**

MSA	ml	Type	Boiling point	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 :*

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



**Moebius Fixodrop WR-S**

MSA	ml	Type	Boiling point
28.7060-100	100	WR-S	110 ° C
28.7061-100	100	WR-S	110 ° C
28.7061-1L	1000	WR-S	110 ° C
28.7062-100	100	WR-S	110 ° C
28.7062-1L	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 :*

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



**Moebius Fixodrop WR-P**

MSA	ml	Type	Boiling point
28.7070-100	100	WR-P	110° C
28.7071-100	100	WR-P	110° C
28.7071-1L	1000	WR-P	110° C
28.7072-100	100	WR-P	110° C
28.7072-1L	1000	WR-P	110° C

Fixodrop ES/WR-P are the second series of our "Wash Resistance" (WR) epilames that have been specifically developed to improve the washing resistance of special or precious materials (gold, rhodium-plated, nickel, DLC, etc).

These epilames 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 :*

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



**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 favorable viscosity and density characteristics of this product allow superior cleaning as well as performances 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 :*

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



Test oils to control the quality of the epilame.



Moebius test oil

MSA	No.	ml	Temp. ° C	Visc. 0° C	Visc. 20° C	Visc. 40° C
28.9701-005	1	5	-20...+100	150	40	18
28.9702-005	2	5	-40...+100	59	55	39
28.9703-005	3	5	-40...+100	99	56	35
28.9704-005	4	5	-30...+100	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	Boiling point
28.8983-020	20	76° C
28.8983-100	100	76° C
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 :*

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

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