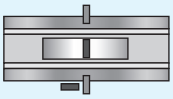
Dr. Tillwich GmbH
Werner Stehr

Product Specifications

Type 3-5
Article No. TK2235
Partially Synthetic Clock and Instrument Oil

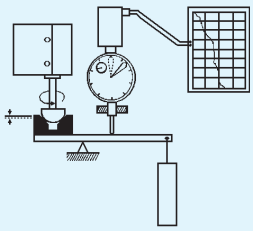
Laboratory Data:

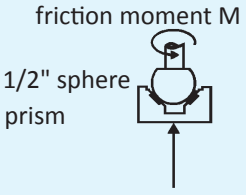
Viscosity		
Stabinger (ASTM D7042)	**Temperature**	**ν (mm²/s)**
	0 °C [32 °F]	600
	20 °C [68 °F]	140
	40 °C [104 °F]	50
Viscosity-Index (ISO)		110
Viscosity-Temperature-Behaviour		good

Color	yellow
Permanent Low Temperature 72 hrs fluid	-15 °C [+5 °F]
Application Temperature	-10 °C to +80 °C [+14 °F to +176 °F]
Density 20 °C [68 °F] (DIN)	0.91 g/cm³
Surface Tension	31 mN/m
Evaporation Rate 24 hrs/105 °C [221 °F]	0.4 % very low
Drop Stability	good
Durability	good
Corrosion Resistance	brass: very good steel: very good
Compatibility with Plastics	on request
Composition	partially synthetic oil on base of esters and hydrocarbons with additives

Tribological Data:

Test System: sphere on prism (ISO 7148/2)





Friction Behaviour
dependent on sliding speed

v (mm/s)	**f**	friction coefficient f (0.1 0.2 0.3 0.4)
0	0.17	
20	0.05	
50	0.03	
200	0.03	
materials:	steel/brass, load 3 N, 25 °C [77 °F]	
lubricant:	Type 3-5	

Wear Behaviour
comparison: dry and lubricated with Type 3-5

materials	wear (in mm) (0.01 0.03 0.1 0.3 1.0)
St/brass: TK2235	
dry	
St/steel: TK2235	
dry	
test parameters:	load 30 N, distance 10 km, 25 °C [77 °F], v=28.1 mm/s

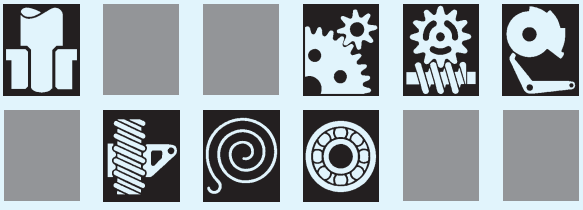
Comments:

Partially synthetic clock and instrument oil on base of different synthetic ester oils, natural hydrocarbons and polyalphaolefines. Type 3-5 is equipped with an additive package for high ageing and oxidation stability as well as corrosion resistance, which ensures its application in the field of horology.

The partially synthetic clock and instrument oil Type 3-5 replaces the ancient classical watch and instrument oils Type 3, 4 and 5.

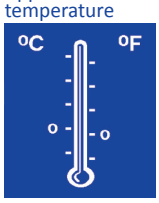
Application:

Watch and instrument oil for metallic sliding combinations in precision instruments. For springs and pivot bearings from 1 to 5 mm diameter (0.04 to 0.20 inches) in alarm clocks, wall-clocks, domestic clocks or switch-clocks.



Product


Bearing material


Application temperature


Bearing load


Sliding speed


Durability


Viscosity


Wetting


P119b

Dr. Tillwich GmbH Werner Stehr
Murber Steige 26
D-72160 Horb (Ahldorf)

Phone: +49 (0) 7451 5386-0
Telefax: +49 (0) 7451 5386-70
info@tillwich-stehr.com

Certified acc. to ISO 9001