

## Grease 9504

Moebius 9504 is a synthetic grease with high fulling stability and a very good lubricating capacity.

The grease 9501 is used as basic product. By the addition of a grease, with a metal-soap as thickener, it obtains an increase of consistency and a stronger adherence. A neutral additive grants an excellent resistance to high pressure as well as a good reduction of wear and tear.

A carefully selected addition of boron nitride (BN) improves the onctuousity of the grease. The boron nitride (a white colour compound) shows the same qualities, or even better than molybdenum disulphide (MoS<sub>2</sub>).

With these properties Moebius 9504 can be applied in a large field of metal/metal couplings from medium to high pressure.

### Field of application

- Time setting/Canon-pinion
- Winding mechanism
- Calendar mechanism
- Chronograph mechanism

### Technical characteristics of the grease

Density at 20 °C in g/ml	0.96
Penetration after fulling 1/10 mm	340
Penetration after 3 days 1/10 mm	333
Penetration after 5 days 1/10 mm	332
Separation of oil %	< 1
Acidity mgKOH/g	2,6
Flashpoint °C	> 180
Temperature range in °C	-20 to +100

### Technical characteristics of the basic oil

Viscosity at 0 °C / cSt	1300
Viscosity at 20 °C / cSt	305
Viscosity at 40 °C / cSt	103
Viscosity at 100 °C / cSt	13,4
Viscosity Index	152
Pour point °C	- 25
Evaporation test: 10g oil /100 °C/ Surface 19cm <sup>2</sup> Loss after 5 days	0,5%
Baader ageing test: Change in viscosity after 50 days	+ 4,5%

# Material Safety Data Sheet: (RL 91/155/EWG)

Date: 30.03.2009

## 1. Substance and Manufacturer Identification:

**Trade Name:** **Art. 9504**  
**Material Type:** Grease with synthetic paraffinic hydrocarbons and boron nitride

## 2. Composition:

**Substance:**  **Composition:**   
**CAS-Nr.:** None  
**Chemical Characteristics:** Mixture of a synthetic branched hydrocarbon (isomers) and a saturated trimethylolpropane-ester  
**Thickener:** 10 % Boron nitride (BN)  
approx. 3 % amorphous silicon dioxide  
approx. 3 % Ca-Stearate  
**Additifs:** Viscosity-improver (poly alcyle-methacrylate)  
Approx. 2 % EP-Additiv  
< 1 % 2,6-Di-tert.-butyl-4-methylphenole  
p,p'-Dioctyldiphenylamine  
Bariumsulfonate-mixture  
Dye

## 3. Possible Hazards:

The product, when properly handled and stored, according to the good working and hygienic practices, is not dangerous for the human health and nature.

## 4. First Aid Measures:

**Inhalation:** Move to fresh air  
**Skin contact:** Wash off with soap and water  
**Eye contact:** Rinse thoroughly with water. Obtain medical attention if adverse symptoms arise.  
**Ingestion:** Do not induce vomiting. Keep respiratory tracts clear. Affected persons are to be calmed down and consult a physician at once.

## 5. Fire Fighting Measures:

**Suitable extinguishers:** CO<sub>2</sub>, foam, dry chemical  
**Unsuitable extinguishers:** Water jet  
**Special hazards:** None  
**Special protective equipment:** For firemen positive pressure self-contained breathing apparatus.  
**Further Measures:** Do not allow spillage to enter drains and watercourse.

**Product: Art. 9504****6. Accidental Release Measures:**

<i>Personal Protection:</i>	Avoid skin and eye contact
<i>Environmental precautions:</i>	Avoid pollution of drains and watercourse
<i>Cleaning Measures:</i>	Collect with oil absorbent (e.g.sand) and dispose in the manner prescribed by Federal, State and Local regulations. Remains and small amounts of the product have to be removed with water and cleaning agent (slippery floor).

**7. Handling and Storage:**

<i>Handling:</i>	No special protection measurements necessary.
<i>Storage:</i>	Store in original closed container at 16 - 22 °C

**8. Exposure Controls / Personal Protection:**

<i>Technical Protection:</i>	No special measures necessary
------------------------------	-------------------------------

<b>Exposure Limits:</b>	None
-------------------------	------

**Personal Protective Equipment:**

<i>Breathing protection:</i>	not necessary
<i>Skin protection:</i>	not necessary
<i>Eye protection:</i>	not necessary
<i>Body protection:</i>	not necessary

<i>Further information:</i>	please follow the usual hygienic measures
-----------------------------	---

**9. Physical and Chemical Properties:**

<i>Appearance:</i> soft grease	<i>Colour:</i> light blue	<i>Odour:</i> poor
<i>Boiling point:</i>	> 200 °C	<i>Tested after:</i> DIN 51 751
<i>Pour point (basic oil):</i>	- 25 °C	ISO 3016
<i>Flash point:</i>	> 180 °C	DIN 51 755
<i>Fire point:</i>	NA	DIN 51 794
<i>Explosion limit:</i>		
<i>lower</i>	NA	
<i>upper</i>	NA	
<i>Vapor pressure (20 °C):</i>	< 0.01 mbar	
<i>Density (20 °C):</i>	0.96 g/cm <sup>3</sup>	DIN 51 757
<i>Solubility 20 °C (in H<sub>2</sub>O):</i>	Not soluble	
<i>pH-value:</i>	NA	
<i>Viscosity (20 °C) basic oil:</i>	305 mm <sup>2</sup> /s	DIN 51 562
<i>Penetration:</i>	332 1/10 mm	

Product: **Art. 9504**

## 10. Stability and Reactivity:

<i>Thermal Decomposition:</i>	None at proper usage.
<i>Conditions to avoid:</i>	High temperatures, naked flames
<i>Substances to avoid:</i>	Strong oxidising agents
<i>Dangerous Decomposition products:</i>	not to be expected
<i>Dangerous Reactions:</i>	none at proper usage.

## 11. Toxicological Information:

<i>Acute Oral Toxicity (LD 50):</i>	> 5'000 mg/kg (rat)
<i>Primary Skin irritation:</i>	Moderate (rabbit)
<i>Primary Eye irritation:</i>	Moderate (rabbit)
<i>Skin sensitivity:</i>	not sensibilising
<i>Further information:</i>	Carcinogenic effects are not known

## 12. Ecological Information:

<i>Acute Fishtoxicity:</i>	Not determined
<i>Bioaccumulation:</i>	Not to be expected
<i>Biological Decomposition:</i>	Slow
<i>Water hazard class:</i>	1, poor danger for water (self estimation)

## 13. Disposal Considerations:

<i>Product:</i>	Dispose off in a manner prescribed in Federal, State and Local regulations.
<i>Packing:</i>	Uncleaned packing to be disposed like the product.
<i>Wastedisposalcode:</i>	54401, synthetic cooling and lubricating products

## 14. Transport Information:

<i>UN-Nr.:</i>	-----
<i>RID / ADR:</i>	not classified
<i>GGVSee / IMDG-Code:</i>	not classified
<i>ICAO / IATA-DGR:</i>	not classified
<i>Further Information:</i>	This product is not dangerous.

## 15. Regulatory Information:

<i>Classification after European guidelines:</i>	Not dangerous
<i>Hazard Symbol:</i>	Not required
<i>Risk phrases:</i>	None
<i>Safety phrases:</i>	S 2: Keep away from children
	S 3: Keep in a cool place
	S 8: Keep container dry
	S 15: Keep away from heat

Product: **Art. 9504**

#### **16. Other Informations:**

The recommendations given in this material safety data sheet are put together from actual tests (if available), comparisons with similar products as well as informations on different products or components bought from other manufacturers.

The information given here refers only to the mentioned product. These informations are not accurate, if the product is beeing used together with other materials or in a working process. This report corresponds to our knowledge and experience at the given date. However, we do not give any warranty for faultlessness, reliability and completeness.