



LUVOCOM[®] XTF

The New Generation of PTFE-Modified Compounds

Key properties:

- Low coefficient of friction
- Reduced wear – especially at high loads
- Short running-in behaviour
- Improved mechanical properties
- Less deposition on tools

The frictional and wear characteristics of thermoplastics can be improved by the addition of lubricants such as PTFE. Generally a reduction in the coefficient of friction is the result. Under normal loads there is also a decrease in wear. However, beyond a certain load – and depending on the tribological system – wear may increase significantly. Including further additives and reinforcing materials provides a means of countering this effect.

In the case of thermoplastic compounds modified with PTFE, it has now been possible to achieve a reduction in wear under high loads by optimizing the processing technology and using innovative raw materials. During trials, the high-performance compounds thus developed exhibit significantly improved tribological properties compared with the formulations used to date. The corresponding results are recorded on this and the following page.

LUVOCOM XTF comparison of wear factor ($10^{-6} \text{ mm}^3/\text{Nm}$)* (constant pV value but different velocities and loads)

Material	Polymer/ modification	Standard adjustment 21 N / 75 mm/s	Adjustment with high load 40 N / 40 mm/s	Difference
PEEK	PEEK/ neat	340	200	- 41 %
1105/TF/15	PEEK/ PTFE	100	470	+ 370 %
1105-9098/XTF	PEEK/PTFE/ Additive	150	100	- 33 %
1105-9182/XTF	PEEK/PTFE/ Aramid	10	0,5	- 95 %



*Vibration wear test against 100 Cr6 steel

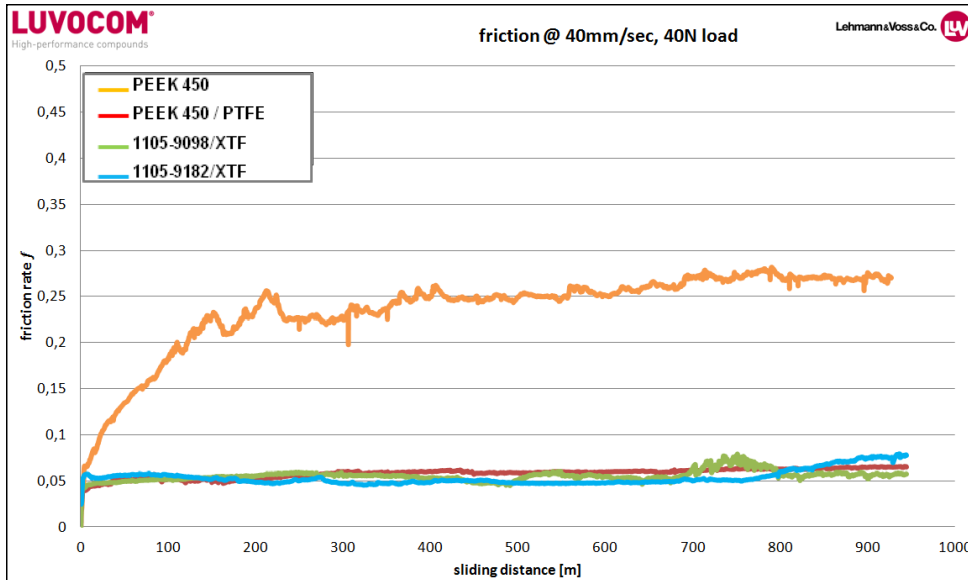
Material properties*

LUVOCOM [®]	Tensile strength ISO 527 MPa	E-modulus ISO 527 GPa	Charpy impact strength ISO 179 1eU kJ/m ²	Specific gravity ISO 1183 g/cm ³
1105-9098/XTF	85	4	95	1,37
1105-9182/XTF	92	7,8	20	1,40

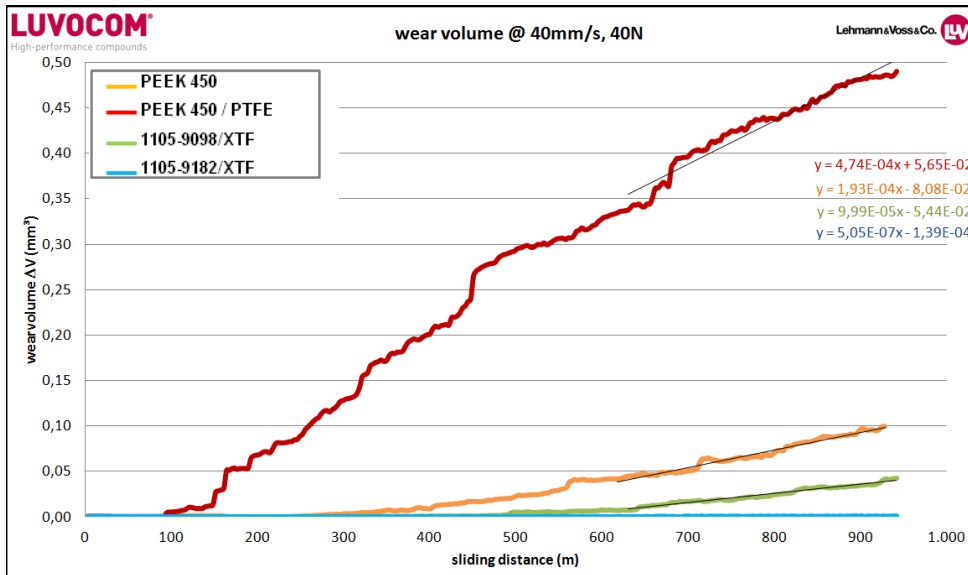
* further materials on request



Tribological properties of PEEK, PEEK/PTFE and LUVOCOM XTF compounds in comparison*



PEEK compounds with PTFE or XTF modification show low friction levels



PEEK compounds with XTF modification - compared to neat PEEK or PEEK with PTFE - exhibit significantly lower levels of wear

*Vibration wear test against 100 Cr6 steel

Solutions individually compounded

LUVOCOM ensures reliable performance under even the most severe conditions. The materials are based on practically every available thermoplastic resin. Over the past +30 years we have developed most of them tailor-made to customer's specific requirements. The products can be broadly divided into 8 groups as follows:

- Carbon-fibre reinforced
- Lubricant modified
- Functional powders
- High-temperature resistant
- Thermally conductive
- Long-fibre reinforced
- Electrically conductive
- Detectable

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