General Recommendation for Transport, Storage and Handling of Semi-finished Products and Parts of Plastic Materials

1. Scope
The high performance plastic materials e.g. TECAPEEK, TECATRON, TECASON are valuable construction materials for high demanded products like in the semiconductor, aerospace and nuclear industry, machine construction and food and medical technology. Therefore, it is required a suitable and careful handling from everybody.
TECAPEEK and TECATRON stand as a representative for semi-crystalline materials with very good chemical resistance and high wear resistance.
TECASON P MT (PPSU) and TECANAT PC stand a representative for amorphous materials with good dimensional stability but something with stress cracking sensitivity by using solvents.

2. Marking
Semi-finished products and cut pieces have to be marked well defined to avoid confusion with the same appearances material TECAPEEK to TECAPEEK GF 30 (glass fiber 30 % filled) or TECATRON to TECATRON GF 40 (nat. colour). Identification e.g. on the difference of the density. Natural colour of TECAPEEK twice is yellowish beige or white like for TECATRON.
ENSINGER products have a clear identification code printed on the product surface of rods, plates and tubes down to dia. 20 mm including material name, size and batch number for traceability.
Following are defined these ENSINGER products as products.

3. Storage
Storage well defined and sorted in a closed room or under a roof as protection from weathering. Light discolouring the surface caused by UV radiation may have no marginal effects on the properties because only some microns of thickness are met. The surface will be machined later, anyway. No direct full sun light to avoid thermal caused deformation or material stress.

4. Temperatures
Minus up to plus temperature from (- 30 to + 60 °C) have no negative influence at the properties. As the most of the plastics at extremely minus temperatures, TECAPEEK and TECATRON are tending to brittleness. Because this handle it careful and do not throw to avoid cracks.

5. Placing
Store dry, lay it flat and even good supported to avoid deformation from the own weight or place it upright in a rack. Short tubes should be stored upright to avoid oval deformation. Give enough time for acclimatization in a warm room before machining. Handle it careful and with fine feeling. No hard kicks or throw or falls.

6. Chemical influences
No contact with chemicals and water. Clean water has no negative influence. Store separate from chemicals.

7. Radiation
No uncontrolled high-energy radiation unless TECAPEEK and TECATRON are very high resistant against that radiation. TECANAT PC is more sensitive and tends to yellowing. TECAFORM (POM) and Fluorine plastics like PTFE materials are extremely sensitive.

8. Fire safety
Do not store together with other flammable products like fuel, oil, solvent or other chemicals. TECAPEEK and TECATRON are self extinguishing acc. to UL 94 V-0 and have because of that a low risk of flammability. TECANAT PC is UL 94 HB classified. From these ENSINGER plastic products does not come a danger of self ignation in a normal environment.

9. Handling device
The use of suitable and stable store, safe striking and lifting systems and device, untiltable and fall safe store and staple. The products have a low friction coefficient on the surface and therefore, clamps could slide.

10. Cleaning operation
Cleaning of wasted surfaces with a mild household cleaner, alcoholic solution. If oil and grease have to be replaced take a typical solvent. TECAPEEK and TECATRON are not sensitive against the typical technical solvents.
For TECANAT PC take high care and absolutely don’t contact with harsh solvent like acetone, toluene, benzene or other hydrocarbons. Stress cracks and breaks are caused and means the end of the product.

11. Storage time / properties
If all recommendations are careful handled, the storage time is unlimited without a retention of the properties because the materials don’t contain any migrating elastifier or solvents.

On machined or injection moulded parts should be taken care because possible discoloration on natural uncolored material and it could be released internal stress if the production method was not really careful. Residual stress could change the geometry by warpage or on the measure and tolerances. Climate could influence the measure and tolerance normally not significant. For Polyamide parts has to be taken high care because high water absorption.

12. Specific
Any specific storage requirements concerning condition and storage time could be defined for specific applications and user, e.g. in semicon, aerospace industry or nuclear and defence industry.

The recommendations of this guideline only are valid by acceptance of all usual legal instructions for safety and health in the transporting and storage industry.