



## Technical Report PolymerMetal®

### TEC-# 003

Laboratory test behaviour of VP 10-500 in liquid medium at 300 °C

### Used products

VP 10-500

### Description

Samples of VP 10-500, pasty, applied on substrate

Substrate:	Sheets of steel St37 and stainless steel V4A, 60 x 60 mm
Surface preparation:	Sheets have initially been roughened with sand paper (grit P180), surface blown off and cleaned with MM-Degreaser Z
VP 10-500:	For easier processing warmed up to 30 °C; then applied on sheets in coating thicknesses of 2 and 4 mm Partly curing 2 hours at 150 °C (After)Curing 2 hours at 200 °C

### Test

After cooling down (to room temperature) the cured samples were immersed in a liquid medium and then the fluid was heated together with the inlaid samples. At the end of the test period the samples were examined.

Type of medium:	Heat transfer fluid WU340
Temperature (medium / VP 10-500):	300 °C (for a short time 310 °C)
Test period (storage period):	8 hours
Note:	With a heat transfer fluid there was consciously chosen a neutral fluid that means there is no medium-typical interaction.

### Result

After the curing the samples darkened slightly (to colour middle brown). This colour change is normal at higher temperatures. There were not located any cracks, other damages or any increase in weight of the samples. The coating is solid and fixed permanently with the substrate. A mechanical removal of the VP 10-500 is difficult and there can be removed only small pieces of the coating material from the substrate (chisel test). The bonding / adhesion on substrate stainless steel V4A is marginally better than the adhesion on substrate steel St37.





VP 10-500 shows very good properties at high temperatures. Further tests showed that there are in practise no diversifications, too, when samples are immersed at high temperatures in acid. Even after dipping samples in boiling toluol over a test period of 25 hours there was just measured a smaller weight increase of 1,95 %, which speaks for a good resistance of VP 10-500 against hydrocarbons.

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