

# 低温タイプ鉛フリー無電解Ni-Pめっき液

Low Bath Temperature Type, Lead-free Electroless Ni-P Plating Process

# トップニコロンMSH-LF

TOP NICORON MSH-LF

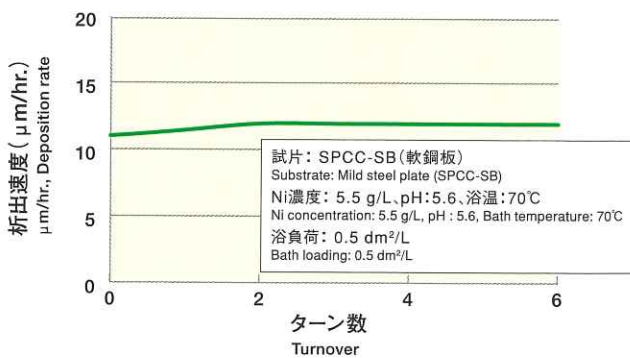
- 低温(70℃)で使用できるため、燃料費を削減でき、作業環境にも優しい
- 連続使用時の析出速度がほぼ一定で、浴管理しやすい
- 皮膜応力が低く、連続使用による応力の変動も少ない
- 鉛を使用していないため、ELV、RoHS指令などの環境規制に対応できる

- Can be used at 70°C of low bath temperature, so that the fuel cost can be reduced. This product is friendly to the working environment.
- The deposition rate is almost constant even if the bath is aging gradually.
- Stress of deposited film is low and a variation of the stress is less when the bath is aging gradually.
- No containing lead compound, so that this product can respond to environmental regulations involving ELV, RoHS directive and others.

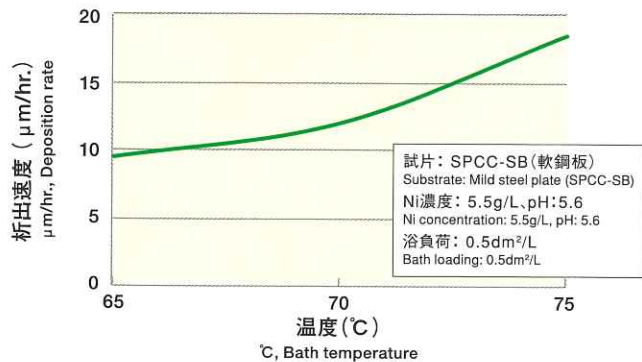
## 作業条件 Working condition

建浴濃度 Makeup	トップニコロンMSH-SLF TOP NICORON MSH-SLF 200ml/L
ニッケル濃度 Ni concentration	5.5g/L
pH	5.6
温度 Bath temperature	70°C

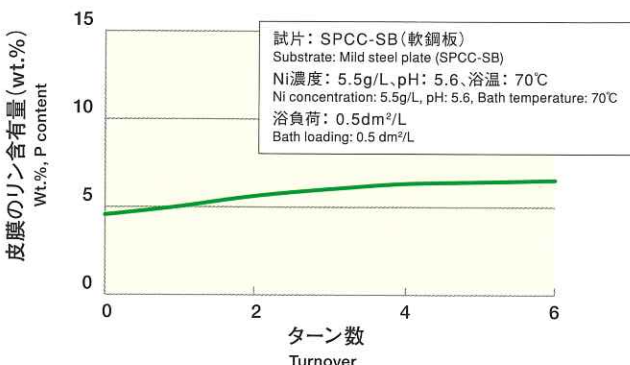
## 性能 Performance



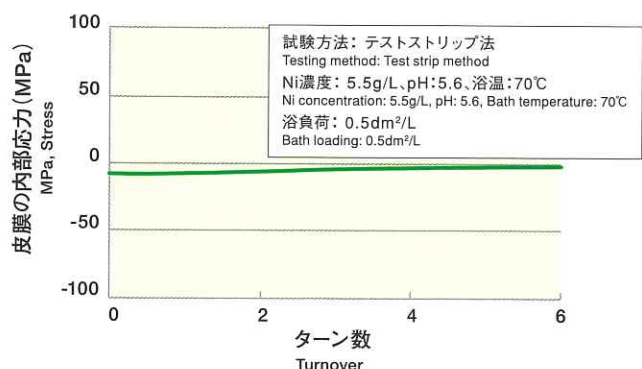
連続使用時の析出速度の変化  
Relation between deposition rate and aging of the bath



温度と析出速度の関係  
Relation between deposition rate and bath temperature



連続使用時のリン含有量の変化  
Relation between P content and aging of the bath



連続使用時の内部応力の変化  
Relation between internal stress and aging of the bath