

鉛フリー低リンタイプ無電解ニッケル/PTFE複合めっき液

# トップニコジットLPFE

Lead-free, Low-phosphorus Electroless Nickel / PTFE Composite Plating Solution

## TOP NICOSITE LPFE

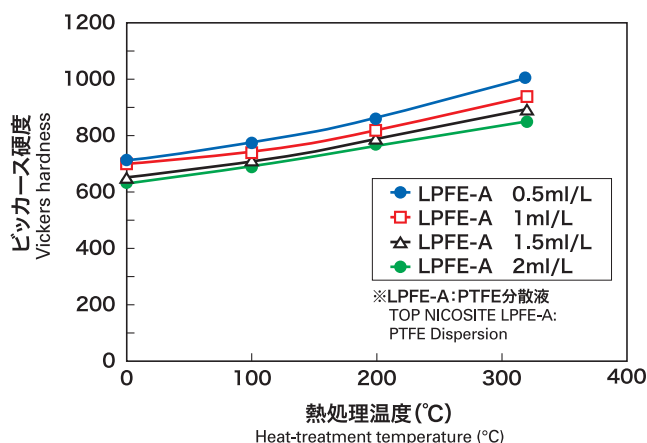
- 析出皮膜は硬度が高く、摺動性に優れる
- リン含有率が1～3wt%と低く、PTFE共析量も5vol%以下で硬度が高い
- 析出皮膜は、Hv650～700で320℃の熱処理により約Hv1000が得られる

- Excellent in film hardness, sliding performance
- High hardness comes available • Ni-P (P ratio: 1 to 3% by weight), PTFE ratio: below 5% by volume
- Film hardness: Hv 650 to 700 (as deposited) • Approx. Hv 1,000 (after heat-treatment at 320°C)

### 高い硬度 Great hardness

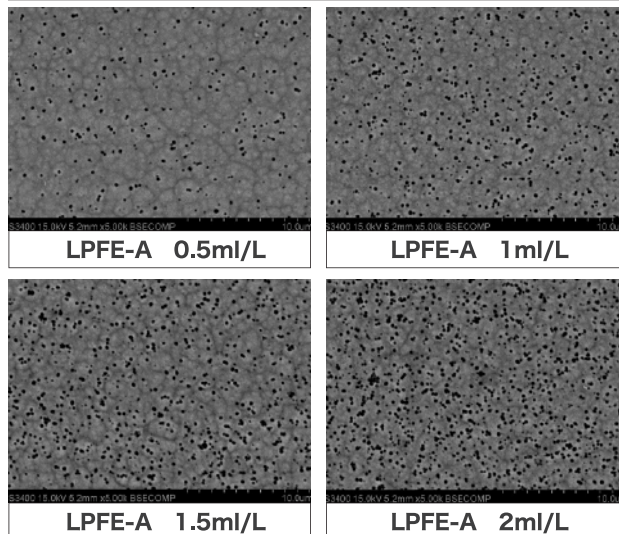
#### 熱処理温度と皮膜硬度の関係

Relationship of heat-treatment temperature and film hardness



### 均一な共析性 Uniformly co-deposit

#### めっき皮膜の表面SEM写真 SEM image (Surface of the deposit)



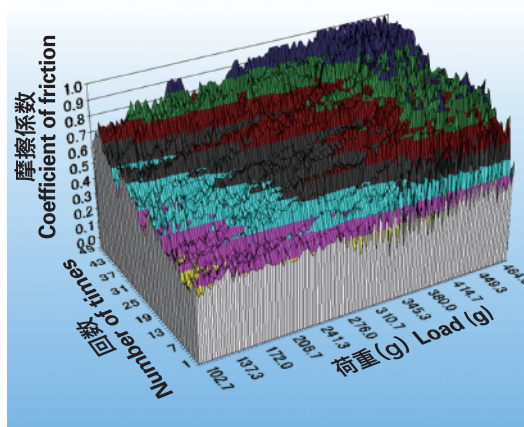
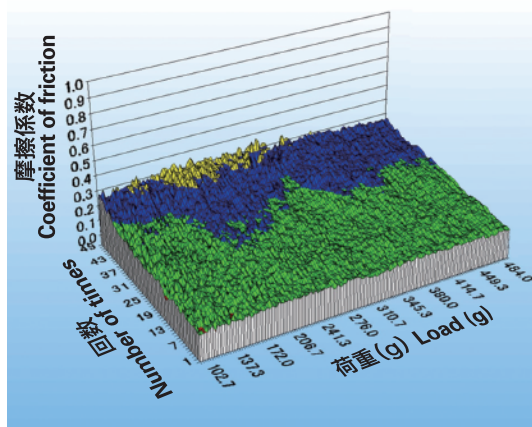
### 優れた摺動性 Excellent in sliding performance

#### トップニコジットLPFE皮膜および低リン無電解ニッケル皮膜の摩擦係数

Coefficient of friction of low phosphorus type electroless nickel plating film and plating film by TOP NICOSITE LPFE

**トップニコジットLPFE-A 1ml/L**  
TOP NICOSITE LPFE-A 1ml/L

**低リン無電解ニッケル**  
Low-phosphorus electroless nickel plating



#### 測定機器 Evaluation method

荷重変動型摩擦摩耗試験機  
トライボギアHHS-2000  
新東科学株製  
Friction and wear testing machine  
Tribo Gear (HHS-2000),  
Made by SHINTO Scientific Co., Ltd.

#### 測定モード Evaluation mode

加減重往復測定  
Addition and subtraction weight,  
reciprocating-motion measurement

#### 測定子 Measuring point

φ10mmSUSボール  
Measuring point:  
Stainless steel ball, diameter 10mm

#### 荷重 Weight

100gf (0.98N)~500gf (4.90N)

#### 往復回数 Reciprocating-motion

50回 50 times