

低周波電磁波シールド向け電気めっき用添加剤

Additives For Electroplating For Low-frequency Electromagnetic Shielding

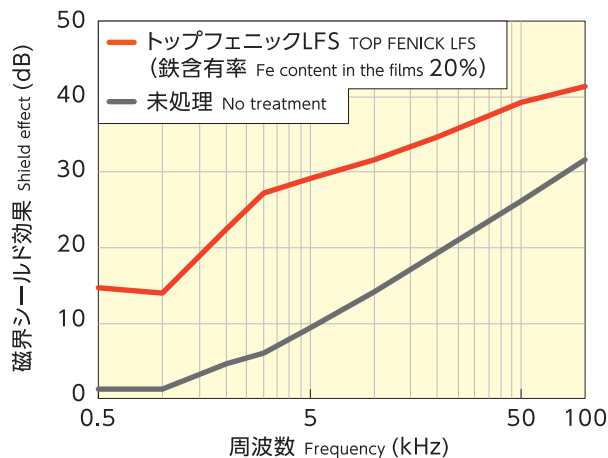
トップフェニックLFS

TOP FENICK LFS

- ▶ ニッケル-鉄合金めっきで100kHz以下の低周波(磁界)対策
Nickel-iron alloy plating films can prevent low frequency waves of 100kHz or less (magnetic field)
- ▶ 添加剤で三価鉄の発生を抑制し、浴の安定性が向上
Reduce occurrence of iron(III) with additives, improve bath stability
- ▶ 幅広い電流密度で安定した鉄合金比率が得られる
Maintain standard iron content in the deposition films at wide current density areas

低周波シールド効果が向上

Improve shield effect to low frequency waves



シールド材試験方法: KEC法
Shield material test method: KEC method

めっき膜厚: 15 μ m(両面) 素材: 銅板(板厚0.3mm)
Film thickness: 15 μ m(Both sides) Substrate: Copper plate (thickness 0.3mm)

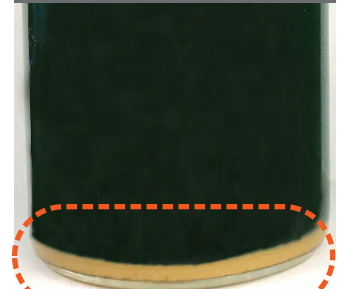
優れた浴安定性 Great bath stability

トップフェニックLFS
TOP FENICK LFS



沈殿なし
No precipitation

無添加
Additive-free bath



沈殿あり
Precipitation

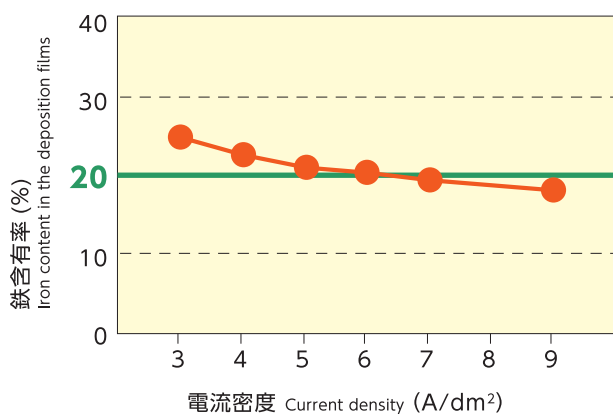
めっき液外観の比較

Comparison of solution appearance

浴安定性に優れ、管理が容易
Great bath stability, easy bath control

安定した鉄合金比率

Stable iron content in the deposition films



幅広い電流密度で

鉄合金比率20%前後を維持

Maintain about 20% by weight iron content
in the deposition films
at wide current density areas

標準条件 Standard condition

皮膜の鉄含有率: 20%
Iron content in the deposition films

硫酸ニッケル六水和物 Nickel (II) sulfate hexahydrate	180g/L
塩化ニッケル六水和物 Nickel (II) chloride hexahydrate	45g/L
硫酸第一鉄七水和物 Iron(II) sulfate heptahydrate	40g/L
ホウ酸 Boric acid	40g/L
トップフェニックLFS-S TOP FENICK LFS-S	5ml/L
トップフェニックLFS-G TOP FENICK LFS-G	40ml/L
アクナH ACNA H	3ml/L
陰極電流密度 Cathode current density	6A/dm ²
pH	2.2
浴温 Bath temperature	40°C

引っ張り応力: 48MPa 電流効率: 97%
Tensile stress Current efficiency