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ARGUNA[®] 630 GAM

HARD SILVER ELECTROLYTE

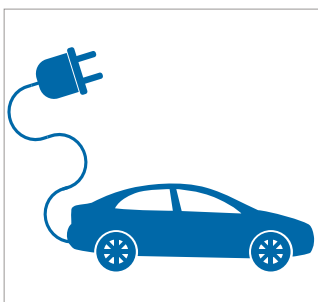


For the Deposition of Silver Layers with High Hardness

ARGUNA[®] 630 GAM is an alkaline cyanide hard silver electrolyte for (electro) technical applications. The additives increase the wear resistance compared to conventional silver layers significantly: The layers obtain a stable hardness of 120 to 130 HV, even after thermal aging.

In particular, ARGUNA[®] GAM 630 is, suitable for electromechanical components that are exposed to increased mechanical stress. The higher hardness and improved wear resistance allow significantly more mating cycles. Additionally, the reliability and durability of the contact systems increase.

According to the operating parameters, the electrolyte is suitable for continuous lines, rack and barrel systems.



Advantages

- Perfect silver layers for highly stressed electro-mechanical components
- High, stable coating hardness between 120 to 130 HV, even after thermal aging
- Low wear, thus significantly more mating cycles
- Suitable for continuous lines, rack and barrel plating
- Good electrical properties, even for high voltage

Applications

- Electromechanical connectors
- High voltage contacts
- Plug-in chargers for electric vehicles

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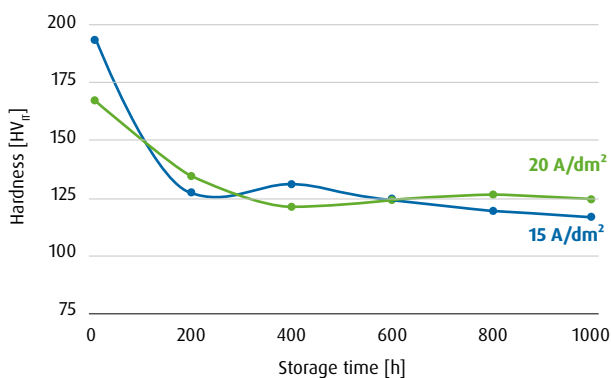


TECHNICAL SPECIFICATIONS

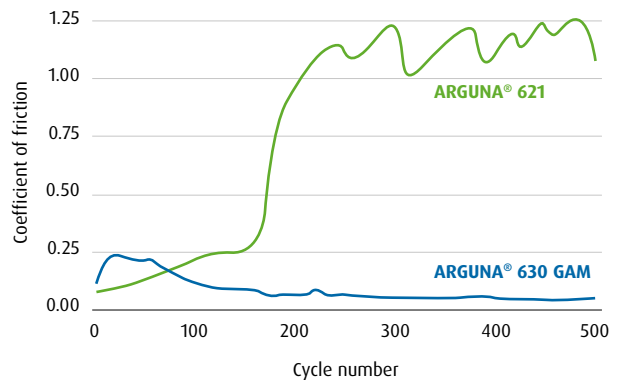
Electrolyte characteristics	
Electrolyte type	Alkaline-cyanide
Metal content	30 - 60 g/l Ag
KCN content	130 (110 - 140) g/l
pH value	12.5
Operating temperature	25 - 40 °C
Current density range	
Rack operation	0.5 - 5 A/dm ²
Barrel operation	0.5 - 2 A/dm ²
Continuous lines	10 - 40 A/dm ²
Plating speed	
Rack operation at 1 A/dm ²	1 µm in 1.5 min
Rack operation at 5 A/dm ²	1 µm in 0.3 min
Continuous lines at 20 A/dm ²	13 µm in 1 min
Anode material (fine silver, as Ag granules in titanium baskets or sheets)	Pt-Ti (type PLATINODE® Pt/Ti)

Coating characteristics	
Coating	Fine silver
Purity	99.9 wt.% Ag
Colour of deposit	White
Brightness	Bright
Hardness of deposit HV 0.015 (Vickers) approx. values	170 - 190 HV as plated
Max. coating thickness	> 100 µm
Density of the coating	10.5 g/cm ³

Stable Hardness over Heat Treatment Time
Heat treatment 150 °C / oven



Coefficient of Friction over 500 Wear Cycles



Test conditions

Test equipment	UNAT (ZWICK/ASMEC)
Test mode:	Cyclic wear trial
Contact force (normal force):	50 mN
Lateral excursion (track length):	2 x 50 µm
Wear frequency:	16 Hz
Wear cycles:	500
Specimen:	Hard gold

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