

INTRODUCING THE ALL NEW CUSUN 2000 HDC - Acid copper system



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Introduction

New acid copper process
CUSUN 2000 HDC

Advantages CUSUN 2000 HDC



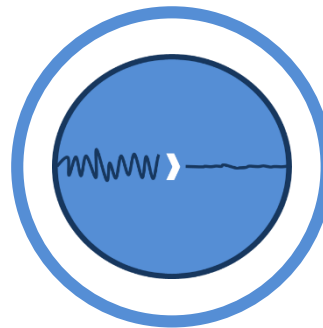
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The advantages of the all new acid copper process CUSUN 2000 HDC.



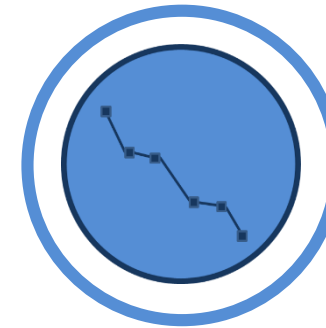
Cost saving

High concentrated
additives
= Lower transportation costs
= Lower consumption



Guaranteed, even surfaces

- Highest levelling performance



Reduction of rejects

- Reduction of pores
- Reduction of milkyness

Levelling Performance

Automotive key part – Base material



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Automotive key part. – Base material.



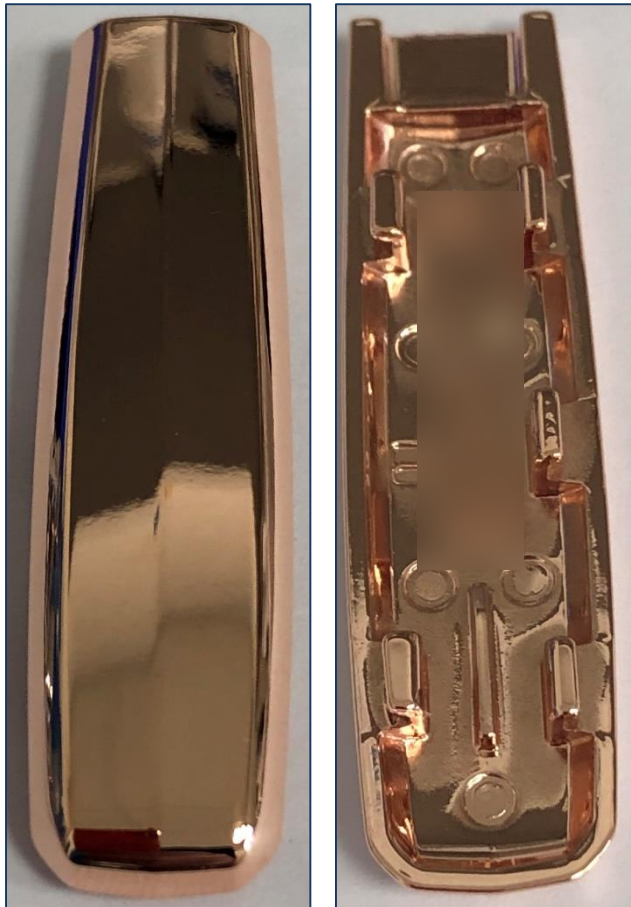
Levelling Performance

Automotive key part – CUSUN 2000 HDC



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Automotive key part. – After plating with CUSUN 2000 HDC.



Process:	Exposition time:	Agitation:	Further parameters:
FETTEX MQ Hot degreasing	1Min	Flooding	Temp.: ~50°C
FETTEX EN Electrolytic degreasing (Cathodic)	1Min	Flooding	Temp.: 40°C 10V
PICKLING SALT K Acidic pickling	10s	Flooding	Temp.: 20°C
PRIMUS HAG-90 Cyanide copper	10Min	Flooding	Temp.: 50°C ~1A/dm ²
FETTEX EN Electrolytic degreasing (Cathodic)	10s	Flooding	Temp.: 40°C 10V
PRIMUS SK ACTIVATION Copper activation	30s	Flooding, Air	Temp.: 25°C
CUSUN 2000 HDC Acid copper	17Min	Flooding, Air	Temp.: 27°C ~4A/dm ²



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Comparison

CUSUN 2000 HDC
vs.
Competitors

Performance comparison

CUSUN 2000 HDC vs. competitors

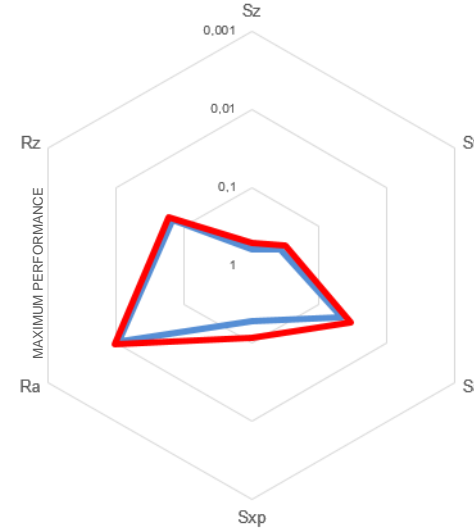
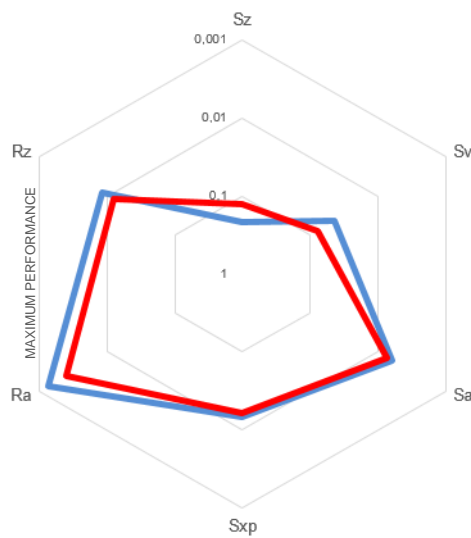
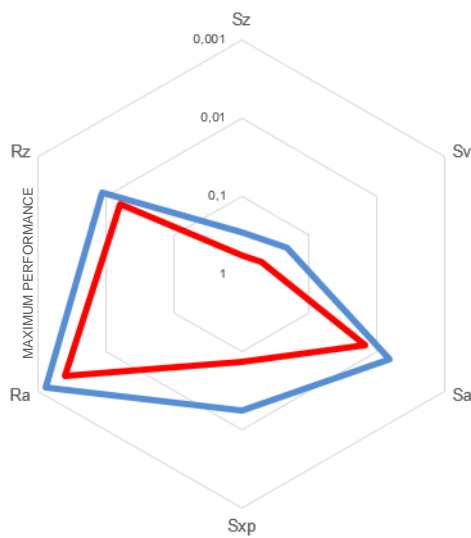


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Levelling performance

CUSUN 2000 HDC vs. competitors

— HCD - 2cm
 — Competitor, set to max. perform. - 2cm
 — MCD - 6cm
 — Competitor, set to max. perform. - 6cm
 — LCD - 9cm
 — Competitor, set to max. perform. - 9cm





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Hull-Cell
plating

CUSUN 2000 HDC

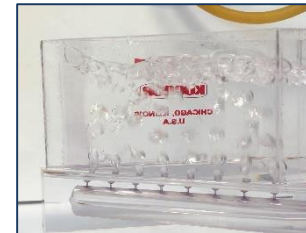
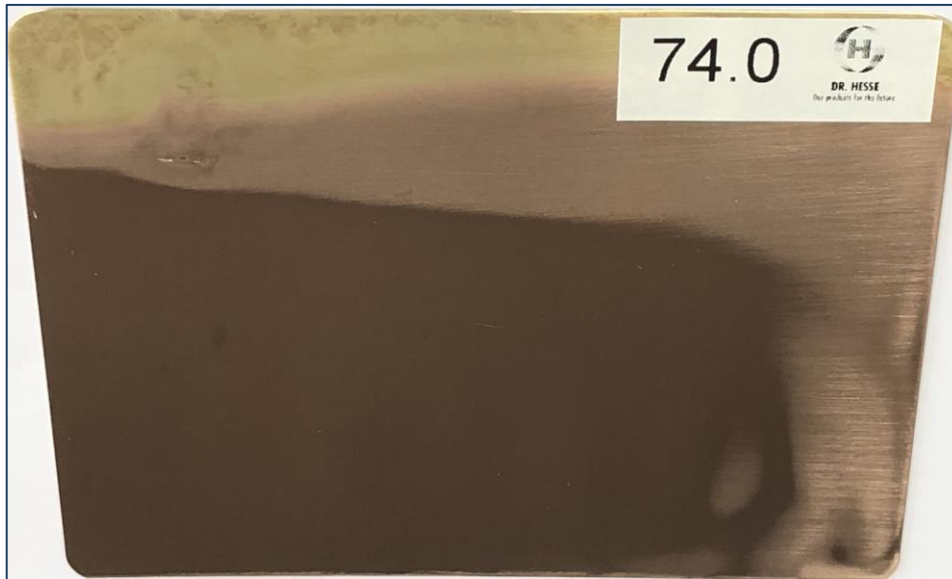
Hull-Cell plating

CUSUN 2000 HDC, 2A / 25°C / Max. Air



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Hull-Cell, 2A 10Min / 25°C / Max. Air – CUSUN 2000 HDC.



Homogenous air agitation



Sanded Hull-Cell panel
Grain size 800

Sample ID:

74.0

Process:	Exposition time:	Current:	Agitation:	Temp.:	Further parameters:
Manual degreasing	-	-	-	-	-
Activation Hydrochloric acid (~10%)	<10S	-	-	-	-
➔ Acid Copper CUSUN 2000 HDC	10Min	2,0A	Air	25°C	5,00ml/l CUSUN 2000 HDC, Make-Up 0,60ml/l CUSUN 2000 HDC, part B (0,5x conc.) 0,60ml/l CUSUN 2000 HDC, part A (0,25x conc.) 2ml/l PRIMUS SK-100 Wetting Agent part 6 NF

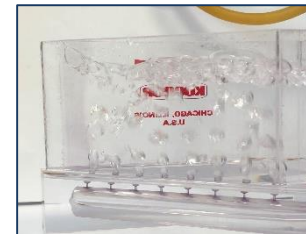
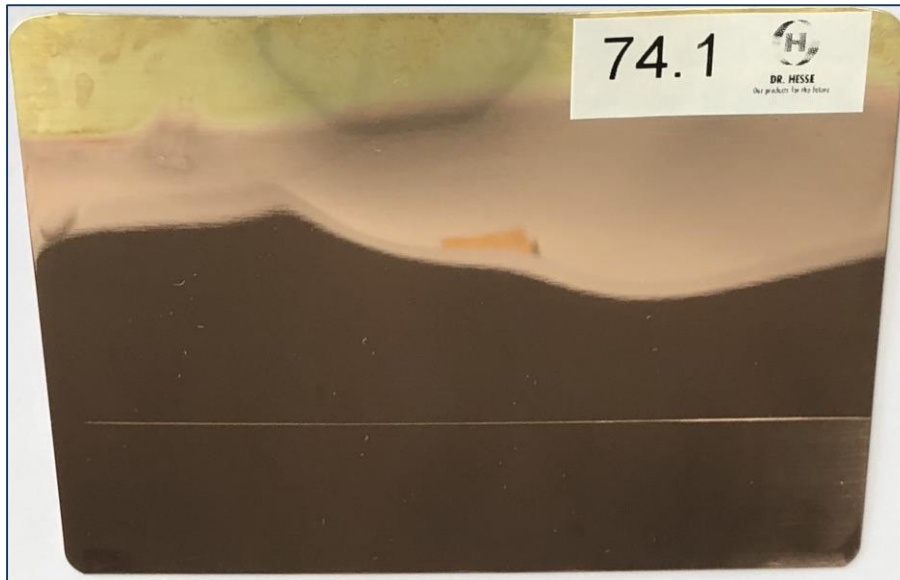
Hull-Cell plating

CUSUN 2000 HDC, 2A / 25°C / Max. Air



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Hull-Cell, 2A 10Min / 25°C / Max. Air – CUSUN 2000 HDC.



Homogenous air agitation



Fully bright polished Hull-Cell panel

Sample ID:

74.1

Process:	Exposition time:	Current:	Agitation:	Temp.:	Further parameters:
Manual degreasing	-	-	-	-	-
Activation Hydrochloric acid (~10%)	<10S	-	-	-	-
➔ Acid Copper CUSUN 2000 HDC	10Min	2,0A	Air	25°C	5,00ml/l CUSUN 2000 HDC, Make-Up 0,60ml/l CUSUN 2000 HDC, part B (0,5x conc.) 0,60ml/l CUSUN 2000 HDC, part A (0,25x conc.) 2ml/l PRIMUS SK-100 Wetting Agent part 6 NF



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Hull-Cell
plating

Competitors system

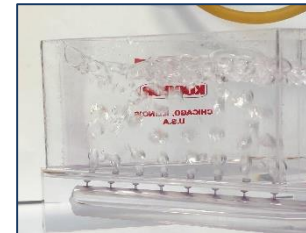
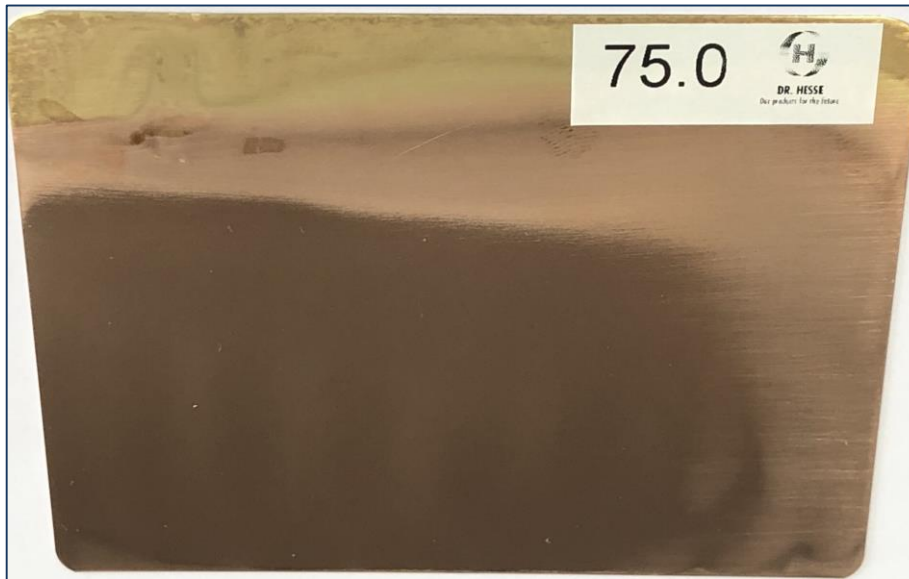
Hull-Cell plating

Competitors, 2A / 25°C / Max. Air



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Hull-Cell, 2A 10Min / 25°C / Max. Air – Competitors system.



Homogenous air agitation



Sanded Hull-Cell panel
Grain size 800

Sample ID:

75.0

Process:	Exposition time:	Current:	Agitation:	Temp.:	Further parameters:
Manual degreasing	-	-	-	-	-
Activation Hydrochloric acid (~10%)	<10S	-	-	-	-
➔ Acid Copper Competitors system	10Min	2,0A	Air	25°C	10,00ml/l -, Make-Up 0,6ml/l -, part B 0,6ml/l -, part A

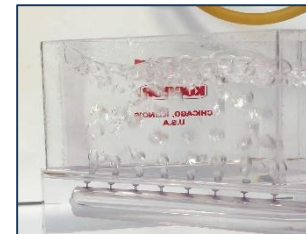
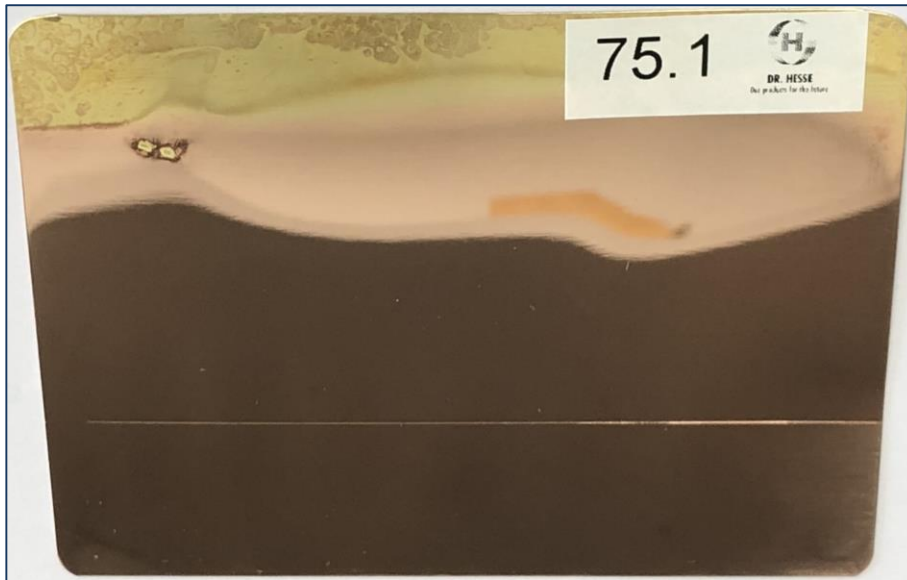
Hull-Cell plating

Competitors, 2A / 25°C / Max. Air



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Hull-Cell, 2A 10Min / 25°C / Max. Air – Competitors system.



Homogenous air agitation



Fully bright polished Hull-Cell panel

Sample ID:

75.1

Process:	Exposition time:	Current:	Agitation:	Temp.:	Further parameters:
Manual degreasing	-	-	-	-	-
Activation Hydrochloric acid (~10%)	<10S	-	-	-	-
➔ Acid Copper Competitors system	10Min	2,0A	Air	25°C	10,00ml/l -, Make-Up 0,6ml/l -, part B 0,6ml/l -, part A



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Handling

Hull-Cell guide
CUSUN 2000 HDC

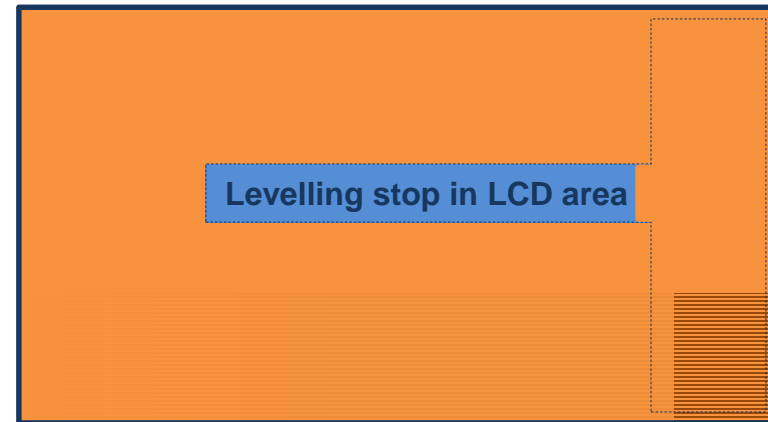
Hull-Cell guide

LCD – Levelling



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2A – 10Min Hull-Cell panel (Air agitated)



Reference Hull-Cell panel

2A – 10Min Hull-Cell panel (Air agitated)



Remedy:

1. Reduce dosing of CUSUN 2000 HDC, part A
2. Add max. 4ml/l
PRIMUS SK-100 Wetting Agent part 6 NF

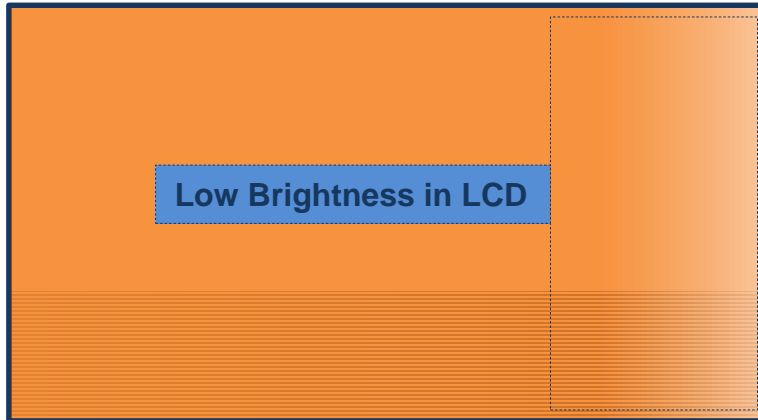
Hull-Cell guide

LCD – Brightness



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2A – 10Min Hull-Cell panel (Air agitated)



Reference Hull-Cell panel

2A – 10Min Hull-Cell panel (Air agitated)



Remedy:

1. Add max. 0,1ml/l CUSUN 2000 HDC, part A

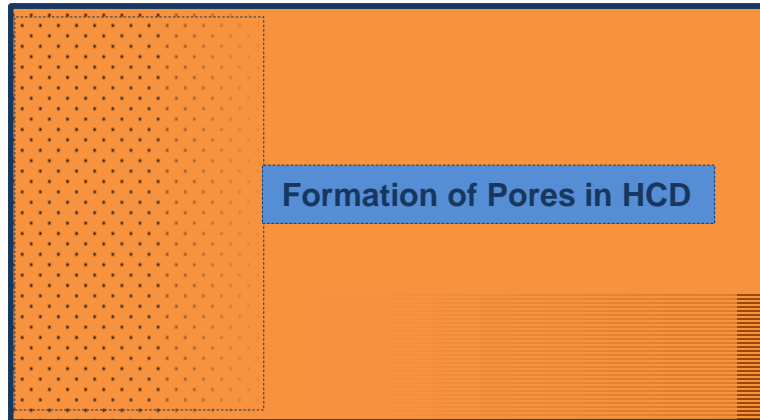
Hull-Cell Guide

HCD – Pores



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2A – 10Min Hull-Cell panel (Air agitated)



Reference Hull-Cell panel

2A – 10Min Hull-Cell panel (Air agitated)



Remedy:

1. Add max. 1ml/l CUSUN 2000 HDC, Make-Up
2. Add. Max. 0,1ml/l
PRIMUS SK-100 Wetting Agent part 7 AF

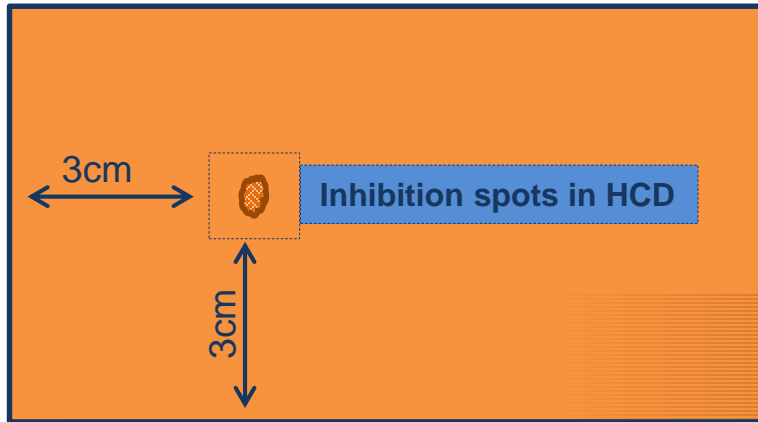
Hull-Cell Guide

Inhibition spots HCD



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2A – 10Min Hull-Cell panel (Air agitated)



Reference Hull-Cell panel

2A – 10Min Hull-Cell panel (Air agitated)



Remedy:

1. Stop dosing CUSUN 2000 HDC, Make-Up



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**ELECTRO-
PLATING**