

Technical Data Sheet

Ready to Use Electrolyte for Aluminum Plating Based on 1-Butyl-3-methylimidazolium tetrachloroaluminate

Revision Date: 1/19/2012

Date Issued: 1/26/2012

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name	Ready to use electrolyte for aluminum plating EP-0004
Product code	EP-0004
CAS	not available
Supplier	IoLiTec Ionic Liquids Technologies GmbH Salzstrasse 184 D – 74076 Heilbronn Germany
Telephone	+49 (0)7131-89839-0
Fax	+49 (0)7131-89839-109
Emergency telephone	+49 (0)179-5322578
Email	info@iolitec.de

2 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient name	1-Butyl-3-methylimidazolium tetrachloroaluminate, aluminum chloride and additives
CAS No.	not available
Empirical Formula	not available
Structure	not available
Molecular weight	not available
Purity	>98%

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3 PROPERTIES

Color	Brown
Physical state (25 °C)	liquid
Melting point	<10 °C
Glass transition temperature	not available
Decomposition temperature	not available
Density (25 °C)	not available
Viscosity (25 °C)	not available
Heat capacity (25 °C)	not available
Conductivity (20 °C)	not available
Electrochemical stability window	not available
Anodic limit	not available
Cathodic limit	not available

4 CO-SOLVENT MISCIBILITY

Water	not miscible
Acetone	miscible
Acetonitrile	not available
Isopropanol	not available
Toluene	not available
Hexane	not available

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5 APPLICATION GUIDELINES

This ready to use electrolyte should be stored and handled under dry, inert gas like argon or nitrogen. After filling the electrolyte into the plating bowl it should be mixed for at least 15 min. The material of the plating bowl should be glass or teflon coated metal. For the plating process the cathode should be the workpart and the anode should be out of aluminum (99.99+%). The anode to cathode ratio should be approximately 1:1. To receive an optimal performance of the electrolyte, the electrode materials should be cleaned prior to use. Therefore we suggest to sonicate the plates for 20 min with hexane and for another 20 min with acetone. After that the aluminum plate should be dipped in a mixture of 30% phosphoric acid, 30% sulfuric acid and 40% nitric acid. The further cleaning process of the workpart depends on its material. We suggest to clean copper or steel with a solution of 10 M hydrochloric acid. The electrode materials should be cleaned first with water and then with acetone after the handling with acids. The last step of the cleaning procedure is drying of the electrode materials. The optimal distance between the electrodes is determined by the dimensions of the electrodes. For small plates of 5.25 cm² the optimal distance is 1.5 cm. We received the best plating results by using a current density of 57 A/m² at 25 °C without stirring. The cleaning of the workparts should be performed by rinsing them with 1-butyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide (IL-0029-HP). This solution can be added to the electrolyte without reducing its performance. After that the workpart should be cleaned over a separate bowl with acetone. It is important that you do not add a big amount of acetone to the electrolyte because this will reduce the performance of the electrolyte.

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6 ORDER INFORMATION

EP-0003-HP can be obtained in the following standard quantities:

Quantity	Price
25 g	Please enquire
50 g	Please enquire
100 g	Please enquire
250 g	Please enquire
500 g	Please enquire
1 kg	Please enquire
Bulk	Please enquire

Please send your order via email to order@iolitec.de or fax +49 (0)7131 – 89839109.

6 OTHER INFORMATION

DISCLAIMER

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