

Materials List for:

Imaging Corrosion at the Metal-Paint Interface Using Time-of-Flight Secondary Ion Mass Spectrometry

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Materials

Name	Company	Catalog Number	Comments
0.05 µm Colloidal Silica polishing Solution	LECO	812-121-300	Final polishing solution
1 µm polishing solution	Pace Technologies	PC-1001-GLB	Water based polishing solution
15 µm polishing solution	Pace Technologies	PC-1015-GLBR	Water based polishing solution
3 µm polishing solution	Pace Technologies	PC-1003-GLG	Water based polishing solution
6 µm polishing solution	Pace Technologies	PC-1006-GLY	Water based polishing solution
Balance	Mettler Toledo	11106015	It is used for measuring the chemicals.
Epothin 2 epoxy hardener	Buehler	20-3442-064	Used for casting sample mounts
Epothin 2 epoxy resin	Buehler	20-3440-128	Used for casting sample mounts
Fast protein liquid chromatography (FPLC) conductivity sensor	Amersham	AKTA FPLC	Used to measure the conductivity of the salt solution.
Final B pad	Allied	90-150-235	Used for 1 µm and 0.05 µm polishing steps
KCl	Sigma-Aldrich	P9333	Used to make the salt solution.
Low speed saw	Buehler Isomet	11-1280-160	Used to cut the Al coupons that are fixed in the epoxy resin.
MgCl ₂	Sigma-Aldrich	63042	Used to make the salt solution.
MgSO ₄	Sigma-Aldrich	M7506	It is used to make the salt solution.
NaCl	Sigma-Aldrich	S7653	It is used to make the salt solution.
NaOH	Sigma-Aldrich	306576	It is used for adjusting pH of the salt solution.
Paint	Rust-Oleum	245217	Universal General Purpose Gloss Black Hammered Spray Paint. It is used to spray on the Al coupons.
Pan-W polishing pad	LECO	809-505	Used for 15, 6, and 3 µm polishing steps
pH meter	Fisher Scientific	13-636-AP72	It is used for measuring the pH of the salt solution.
Pipette	Thermo Fisher	Scientific	Range: 10 to 1,000 µL
Pipette tip 1	Neptune	2112.96.BS	1,000 µL
Pipette tip 2	Rainin	17001865	20 µL
Silicon carbide paper	LECO	810-251-PRM	Grinding paper, 240 grit
Sputter coater	Cressington	108 sputter coater	It is used for coating the sample.
Tegramin-30 Semi-automatic polisher	Struers	6036127	Coarse/fine polishing/grinding

ToF-SIMS	IONTOF GmbH, Münster, Germany	ToF-SIMS V, equipped with Bi liquid metal ion gun and flood gun	It is used to acquire mass spectra and images of a specimen.
Vibromet 2 vibratory polisher	Buehler	67-1635-160	Final polishing step