

Table of Contents

Foreword	v
<u>HIGH-STRENGTH P/M ALUMINUM ALLOYS</u>	
Rapid Solidification of Metallic Particulates Nicholas J. Grant	3
Fatigue Crack Initiation and Microcrack Propagation in X7091 Type Aluminum P/M Alloys S. Hirose and M. E. Fine	19
The Effects of ITMT's and P/M Processing on the Microstructure and Mechanical Properties of the X7091 Alloy Victor W. C. Kuo and E.A. Starke, Jr.	41
Fatigue of High-Strength Powder Metallurgy Aluminum Alloys M. Rafalin, A. Lawley, and M.J. Koczak	63
Investigation of the Fatigue and Crack Propagation Properties of X7091-T7E69 Extrusions S.L. Langenbeck	87
Effects of Microstructure and Aging Treatment on the Fatigue Crack Growth Behavior of High Strength P/M Aluminum Alloy X7091 Young-Won Kim and L.R. Bidwell	107
Effect of Defects in Aluminum P/M W.M. Griffith and J.S. Santner	125
The Effect of Recrystallization on the Microstructure and Fatigue Properties of a 2XXX-Type P/M Alloy J.I. Petit and P.E. Bretz	147
Fatigue Crack Tip Plasticity and Crack Growth Mechanics in Powder Metallurgy and Wrought Aluminum Alloys D. L. Davidson and J. Lankford	163
Stress-Corrosion Cracking and Hydrogen Embrittlement in P/M X7091 and I/M 7075 J.R. Pickens, J.R. Gordon, and L. Christodoulou	177
Consolidation of Metalworking Preforms of X7091 (CT-91) Aluminum Powder J. T. Morgan et al.	193

DISPERSION-STRENGTHENED ALUMINUM ALLOYS

Elevated Temperature Aluminum Alloys for Aerospace Applications 209
W. M. Griffith, R. E. Sanders, Jr., and G. J. Hildeman

Applications of High-Temperature Powder Metal Aluminum Alloys
to Small Gas Turbines 225
P. P. Millan, Jr.

Microstructure/Strength/Fatigue Crack Growth Relations in High
Temperature P/M Aluminum Alloys 237
S. D. Kirchoff et al.

Influence of Powder Morphology on the Mechanical Properties
of Rapidly Solidified Aluminum Alloys 249
G. J. Hildeman, D. J. Lege, and A. K. Vasudevan

The Effect of Solidification Microstructure on the Strength, Ductility
and Toughness of Dispersion-Hardened Al P/M Alloys 277
Henry G. Paris, J. W. Mullins, and T. H. Sanders, Jr.

Development of Duplex Al-Zn-Mg/Al-Mn High Modulus
P/M Aluminum Alloys 297
M. J. Koczak and M. J. Topolski

The Mechanical Behavior of Mechanically Alloyed Al Alloys 317
S. K. Kang, D. L. Erich, and H. F. Merrick

The Effect of Heat Treatment on the Mechanical Properties of a
Mechanically Alloyed 2000 Series Aluminum Alloy 329
M. J. Nilsen and R. G. Stang

ALUMINUM-LITHIUM P/M ALLOY DEVELOPMENT

Heat Treatment, Microstructure and Mechanical Property
Correlations in Al-Li-Cu and Al-Li-Mg P/M Alloys 341
G. Chanani, G. Hari Narayanan, and I. J. Telesman

Development of Al-Li-X Alloys Using Rapidly Solidified Powders 369
I. G. Palmer, R. E. Lewis, and D. D. Crooks

A High Strength Al-Li-Mn Powder Alloy with High Modulus 391
Victor A. Phillips

Subject Index 407

Author Index 411