

**A PRACTICAL APPROACH TO UNDERSTANDING PROBLEMS
ASSOCIATED WITH COPPER-BASE INFILTRATION**

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Abstract

Infiltration problems and solutions are discussed from a practical point-of-view.

The program describes infiltrant properties such as:

Efficiency,
Mechanical properties of parts,
Dimensional Control,
Economics,
Comparisons of high, low and no
residue types.

Several case histories will be discussed covering problems and solutions. Graphs showing the infiltration process will be used as an aid in discussing properties.

Introduction

The technique of infiltration has been used by the Powdered Metal Industry for many years. In the early days, many powder metal parts fabricators would simply infiltrate their parts by using copper wire and some even used copper pennies.

Over the years, many specialized infiltrants were developed: copper-base alloys, admixed elemental blends and even combinations of the two. While most worked quite well under controlled laboratory conditions, many were sensitive to the often wide variations that commonly occurred in production sintering operations.