

# DRY FILM PHOTORESIST: REMOVAL

## INTRODUCTION

This Technical Note will focus on the removal of features following UV exposure with special consideration paid to the necessary methods and solvents. Full removal and clearing of features will be the critical focus. Users will need to optimize the removal process to ensure results meet the needs of their application with adequate removal of the Dry Film Photoresist.

## OVERVIEW

Nagase Chemtex Dry Film has found use in etch and plating applications. Typical application of the Nagase ChemteX Dry Film is utilized when the photoresist being utilized does not meet the chemical requirements of the etch bath. Nagase Dry Film is also utilized when a high aspect ratio, thick resist is necessary. In these applications, it is important to selectively cure the Dry Film. The process is tuned by determining the necessary degree of cure and ability to remove the Dry Film. It is important the resolution requirement is met as well as full removal of the Dry Film resist ensuring no scum or residue remains. Customer will need to optimize the process to ensure it meets the requirements of the application.

## INITIAL GUIDELINE\*

LAMINATION	<ul style="list-style-type: none"><li>• Pretreat the surface</li><li>• Substrate must reach 45°C</li><li>• See Nagase ChemteX Technical Note: Lamination</li></ul>
EXPOSURE	<ul style="list-style-type: none"><li>• Expose at 200-300mJ/cm<sup>2</sup> I-Line 365nm (Exposure Based on material/Thickness)</li></ul>
POST EXPOSURE BAKE (PEB)	<ul style="list-style-type: none"><li>• Bake at 80-100°C for 3-8mins</li><li>• This should be modified to accommodate etch process needs.</li><li>• Goal is to find the lowest time at temp that allows adhesion and resolution after develop</li></ul>
DEVELOP	<ul style="list-style-type: none"><li>• Cyclohexanone Solvent (See Developer Tech Note for other options)</li></ul>
PERFORM METALLIZATION/ ETCH	<ul style="list-style-type: none"><li>• Customer Process</li></ul>
RESIST REMOVAL	<ul style="list-style-type: none"><li>• Plasma/Heavy Ion Etch</li><li>• NMP bath, 40-100°C (dependent upon thickness/removal rate)</li><li>• Piranha etch</li></ul>

\* DF-1050 used as a guideline.