

## **ALTERNATE VAPOR PHASE HEAT TRANSFER FLUID REDUCES PLANT'S REPORTING REQUIREMENTS**

### **ABSTRACT**

A producer of polyester fiber heats its spinning manifolds and spinnerets with Therminol VP-1 (Dowtherm A) vapor. Therminol VP-1 (and Dowtherm A) consists of a mixture of biphenyl and diphenyl oxide (BP/DPO). The biphenyl component is listed as a highly hazardous chemical under OSHA, and carries reporting requirements under SARA, Section 313. Local and state authorities had expressed interest in the plant reducing its reportable emissions, with particular emphasis on biphenyl.

### **SERVICES PROVIDED**

An empirical study was undertaken in which the pressure ratings of all equipment was verified. Physical properties of several alternate vapor phase fluids were reviewed and three (3) candidates were selected to be used as possible replacements. Fluid samples were obtained and thermal stability ampule tests were run to verify the thermal stability of the fluids. The best replacement fluid candidate was used in an isolated trial on one spinning machine for one (1) year. The trial demonstrated acceptable thermal stability of the fluid and no discernable changes in the spinning process. The remaining BP/DPO fluid was then changed to the new fluid and reporting requirements for biphenyl were eliminated.

The study and trial work program described above took approximately 20 months to complete.

### **IMPROVEMENTS NOTED**

1. The spinning process operated as before.
2. Biphenyl reporting requirements required by regulatory authorities were significantly reduced.