

Rietveld Modeling of Eta and Gamma Alumina

R. W. Morton, Ph.D.¹

J. F. Geibel, Ph.D.

J. J. Gislason, Ph.D.

R. L. Heald, Ph.D.

D. E. Lauffer, Ph.D.

M. Sardashti, Ph.D. and

D. E. Simon, Ph.D.²

1. 225A Petroleum Laboratory
Phillips Petroleum Company - Corporate Technology
Bartlesville, OK 74004

2. DES Consulting
2409 South Elder Avenue
Broken Arrow, OK 74012

ABSTRACT

X-ray diffraction is commonly used to analyze catalyst materials containing alumina. Eta and gamma alumina are two alumina phases found in catalysts that show similar x-ray diffraction patterns. Rietveld modeling simplifies the differentiation of these two alumina phases by quantifying their unique calcination products. This paper discusses the analysis of eta and gamma alumina using Rietveld modeling.