

**LMFS-94-18**  
**CHEMICAL MARKETS FOR CATECHOLS**

**CONTRACTOR:** Dakota Gasification Company

**PRINCIPAL INVESTIGATOR:** Alfred Kuhn  
Phone: 701-873-6652

**CONTRACT AMOUNT:** \$12,000

**Project Schedule - 5 Months**

Contract Date - 10/25/94

Start Date - 10/15/94

Completion Date - 3/1/95

**Project Deliverables**

Status Report - 12/31/94 ✓

Status Report - 2/1/95 ✓

Final Report - 3/1/95 ✓

**OBJECTIVE / STATEMENT OF WORK**

The purpose of the project is to survey potential markets for catechol, 3-methyl catechol and 4-methyl catechol. The approach is to identify potential applications and markets where these catechol derivatives occur as intermediates of feedstocks in chemical synthesis. Dakota Gasification will use Norse Associates as a subcontractor.

**STATUS**

The catechols of primary interest are catechol (1,2-dihydroxybenzene), 3-methyl catechol and 4-methyl catechol. These catechols are used in the manufacture of 1) flavors and fragrances, 2) insecticides, and 3) pharmaceuticals. For example, catechol is used in the manufacture of the artificial flavors vanillin and ethyl vanillin. Naturally occurring vanillin and ethyl vanillin are extracted from the vanilla bean and commonly known as "vanilla extract." Catechol is also used in the manufacture of the insecticides carbofuran and propoxur. The pharmaceuticals used in the treatment of Parkinson's disease and hypertension, L-dopa and methyl L-dopa, are manufactured from catechol. Catechol sells on the world market for about \$1.25 to \$4.10 per pound.