



# Technical and Economic Feasibility of Preventing SCC through Control of Oxygen

DTPH56-10-T-000004

## PHMSA ACCOMPLISHMENTS

Pipeline and Hazardous Materials Safety Administration

Pipeline Safety Research and Development

Technology Development for Improved Corrosion Mitigation

### Project Abstract

A workshop conducted in 2007 identified the need to avoid oxygen contamination in ethanol and defining safe operating limits in terms of ethanol chemistry and oxygen concentration were identified as major gaps in the safe transportation of ethanol in pipelines. The project, tested the feasibility of oxygen removal methods for Fuel Grade Ethanol will be evaluated using the following methods: a) the performance of oxygen scavengers under flowing conditions; b) the consumption of oxygen under natural conditions (i.e., without using scavengers); c) a method for direct and rapid oxygen concentration determination; d) the feasibility of oxygen control in pipeline operations.

**PHMSA Funding:** \$ 259,275

**Public Project Page**  
[Click here](#)

### NET Improvement

As part of the broader scope, the project validated the use of oxygen probes for measuring oxygen levels in pure ethanol and in fuel grade/ neat ethanol. The project improved Polestar oxygen probes so that they could directly measure the oxygen

concentrations in ppm rather than in a partial pressure environment common with legacy systems.

**US Patent under DOT Contract:**  
N/A

### Commercial Partner

**Polestar Technologies**  
<http://polestartech.com/> &  
<https://polestartech.com/probes/>

