



Hoekstra Trading LLC  
November 1, 2017

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# *Hoekstra Research Report 7*

## Catalyst testing for gasoline desulfurization

Hoekstra Trading LLC is pleased to offer our *Hoekstra Research Report 7* for a price of \$50,000:

The report includes the following:

1. Section 1 – Field tests on commercial gasoline desulfurizers
2. Section 2 – Analyzing octane loss with detailed chemical analysis
3. Section 3 – Competitive analysis
4. Attachments
5. PowerPoint presentation for client meeting.

Items 1-4 will be delivered immediately upon receipt of a purchase order. Item 5 will be delivered in a face-to-face meeting or remote web conference to last at least one hour at a time that is convenient for you.

In addition, your purchase of this report will include six months of unlimited phone and E-mail consultation on your use of the information in the report.

There are no restrictions on what the recipient can do with the information in this report.

Attached are the Table of Contents and a sample invoice showing the information needed to issue a purchase order. This offer is valid until December 31, 2024.

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# Hoekstra Research Report 7

## Field Testing for Gasoline Desulfurization

### Table of Contents

#### Summary

#### Section 1 Field tests on commercial gasoline desulfurizers

- PBF Delaware gasoline desulfurizer - July 8, 2016
- PBF Toledo gasoline desulfurizer - June 1, 2016
- PBF Toledo gasoline desulfurizer - September 14, 2016
- PBF Toledo gasoline desulfurizer - May 21, 2014
- PBF Paulsboro gasoline desulfurizer - July 28, 2016
- Citgo Lemont gasoline desulfurizer - June 16, 2016
- Lukoil Bulgaria gasoline desulfurizer
- One Rock Kapolei gasoline desulfurizer - September 23, 2016
- Conclusions

#### Section 2 Analyzing octane loss with detailed chemical analysis

- Comparing FCC gasoline feeds
- Causes of octane loss
- A modeling tool for octane loss in gasoline desulfurizers
- Conclusions
- Field test data tables

#### Section 3 – Competitive analysis

- Tier 3 sulfur regulations and industry impact
- Octane demand and price
- Value of octane to a refinery
- Industry expectation for octane loss with Tier 3 gasoline
- Conclusions

#### Attachments

1. “Integration of the processes FCC feed hydrotreatment and FCC gasoline posttreatment through the Prime G process”
2. “Pushing the limits of FCC gasoline desulfurization”
3. “A Higher Tier”,
4. “U.S. refiner postponement of cleaner fuel output comes with costs”
5. “Preserving octane for a Tier 3 market”
6. “Why is premium gas getting more pricey?”
7. “2015 Retain fuels report”
8. “Value of octane to a refinery”
9. “Recent Gasoline Blending Optimization Project, Experience at Valero”
10. “Gasoline production in the age of shale oil, renewable fuel mandates, and Tier 3 regulations”
11. “The Light Naphtha Surplus and the Potential Impact of Tier 3 Sulfur”
12. “Refinery Configuration & Design Aspects”
13. “Innovative options for Tier 3 regulations”
14. “ICT 2016 hydrocarbon type distribution charts”
15. “Hoekstra octane modeling tool”
16. “Development of a Detailed Gasoline Composition-Based Octane Model”

17. "Structural Group Contribution Method for predicting the octane number of pure hydrocarbons and their mixtures"
18. "Turning a Tier 3 Profit"



Hoekstra Trading LLC

# SAMPLE INVOICE

DATE: SAMPLE  
INVOICE NUMBER: SAMPLE

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PNC Bank of Ohio ABA number 071921891 account number **4712186382**

swift code pncus33

EIN 26-3221486

<b>TO:</b> _____	
Payment terms	<b>Due date</b>
<b>30 days from invoice</b>	

quantity	description	unit price USD	line total USD
	<b>Reference PO Number</b> _____		
1	Report, Hoekstra Research Report 7	\$50,000	\$50,000
1	Client presentation delivered in remote web conference	No charge	
1	Unlimited phone and E-mail consultation for 6 months on matters related to use of the report	No charge	
		<b>Total</b>	<b>\$50,000</b>