



Hoekstra Trading LLC
November 1, 2017

Hoekstra Research Report 1

Catalyst testing for diesel desulfurization

Hoekstra Trading LLC is pleased to offer our *Hoekstra Research Report 1* for a price of \$50,000:

The report includes the following:

1. Section 1 – Results of pilot plant run GH-1
2. Section 2 – Results of pilot plant run GH-3
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, 2023.

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Hoekstra Research Report 1

Catalyst Testing for Diesel Desulfurization

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SUMMARY

SECTION 1: CATALYST TEST RESULTS – PILOT PLANT RUN GH-1

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- Desulfurization activity of test catalyst B
- Desulfurization activity of test catalyst D
- Temperature for 10 ppm product sulfur
- Effect of 20% LCO Addition
- Denitrogenation
- Hydrogen Consumption
- Conclusions
- Summary Tables of Results from Run GH-1

SECTION 2: CATALYST TEST RESULTS – PILOT PLANT RUN GH-3

- Test protocol
- Feeds
- Catalysts
- Benchmark catalyst activity and test reproducibility
- Desulfurization activity of the gold, black, and gray catalysts
- Temperature for 10 ppm product sulfur
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SECTION 3 COMPETITIVE ANALYSIS

- Identification of the catalysts
- Evolution of CoMo catalysts for low sulfur diesel
- Analysis of product performance claims
- Examples of vendor testing
- Examples of proprietary customer tests
- Examples of commercial testing
- Pitfalls in catalyst selection
- Conclusions

ATTACHMENTS

1. Akzo NPRA paper AM 99-40, "Low Cost Production of Clean Fuels"
2. ART NPRA paper AM05-17, "Custom Catalyst Systems"
3. Criterion NPRA paper AM05-15
4. ART Catalagram Bulletin
5. Criterion NPRA paper AM09-11, "Beyond ULSD"
6. Albemarle brochure, "Ketjenfine 767"



Hoekstra Trading LLC

SAMPLE INVOICE

DATE: SAMPLE
INVOICE NUMBER: SAMPLE

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TO: _____	
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quantity	description	unit price USD	line total USD
	Reference PO Number _____		
1	Report, Hoekstra Research Report 1	\$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	
		Total	\$50,000