



**Annual Metallocene and Single-Site
Catalyst (SSC) Program - Volume XV**

- Proposal -

March 2007

Introduction...

The Catalyst Group Resources (TCGR) is pleased to announce the continuation of its **Annual Metallocene and Single-Site Catalyst (SSC) Program—Volume XIV**. In previous years, this service was known as the **Annual Polyolefin Metallocene Program: Key Developments**, but the technology has expanded well beyond the early metallocenes to include a broad range of novel and robust single-site catalysts.

This full-service, on-going program assists subscribing clients in monitoring and assessing the development and commercialization of metallocene and single-site catalysts (SSCs) as well as the polymers derived from them. This program has been providing valuable information to client subscribers since October 1992.

Subscribers to the program receive several timely services that are essential for successfully keeping abreast of developments in this increasingly important commercial technology. These services include, based on an annual subscription:

- A full year's subscription to *The Metallocene and Single-Site Catalyst Monitor*: twelve monthly reports of 18-24 pages focused solely on essential and up-to-date technical, commercial, market, and application developments in metallocenes, SSCs, and their products. For convenience and portability, these are available in both hard-copy and e-mail formats.
- Benchmark reports of 60-80+ pages which present a broader, more comprehensive perspective on industry developments over longer periods of time. These *Update* reports are published on an "as needed" basis to cover certain periods of significant evolution over longer timeframes (months to years) or to achieve a more in-depth analysis of a particular critical topic.
- A fax/e-mail service for immediate relay of critically important industry news releases—as they happen.

This is truly a unique and timely service. The program provides detailed and insightful information that is completely focused on critical developments as they occur. The focus is designed to supplement existing client in-house monitoring programs (e.g., detailed patent abstracts) and provide leading items not obvious in commercial and technical events in the metallocene/SSC polymer industry. The program offers the advantages of a retainer service at a multi-client cost—an excellent overall value.

A major focus of the program is commercial opportunities (i.e., emerging markets) which are identified and evaluated from various perspectives including producers, developers, and end-users, through direct interviews with major industry participants. The Catalyst Group Resources further provides analysis and insights into the on-going developments in this fast-paced industry.

The Annual Metallocene and Single-Site Catalyst (SSC) Program underscores TCGR's commitment to maintaining our leadership position in this field. No one else is positioned like TCGR to provide this service.

The Need...

The need for this unique service is clear. Never before has a technology so impacted the polyolefins and polymeric materials industries. The potential for several participants to capture a major share of this new business is significant. As well, the pace of developments is staggering, reflecting a need for constant watch. This service will provide that monitoring.

Ongoing market trials with metallocene and SSC polymers, as well as other developmental materials (e.g., ESIs, ETP-like resins, etc.), have shown customers reluctant to pay significant premiums for the higher performance polymers, even with the better strength, clarity, flexibility, and purity that these catalyst advancements offer. Nonetheless, metallocenes and “next generation” SSCs are rapidly penetrating markets served by Z/N and other conventional catalyst systems. Capacity commitments already exceed millions mt/yr for both metallocene PE and PP, and capacity announcements have either been made or are expected for other metallocene- and SSC-catalyzed resins like cyclic-olefin copolymers (COCs), syndiotactic polystyrene (sPS), polyolefin plastomers (POPs) and elastomers (POEs), plus EPDM. With new developments taking place so rapidly, clients cannot wait the usual 6-8 months for a multi-client report.

The Service...

The Metallocene and Single-Site Catalyst Monitor summarizes the month-to-month events in the industry, in reports of 18-24 pages. It is published in the second/third week of each month, includes 12 issues for an annual subscription, and can be delivered in hard copy and e-mail (as PDF file) formats. Features include:

- Market and product application developments (real interviews)
- Commercial announcements (with implications)
- Interviews with major regional polyolefin producers and consumers
- Critical new metallocene/SSC patent alerts
- Industry rumors/speculations
- TCGR’s input/analysis of the above

The Catalyst Group Resources also provides *Update* reports (on an “as needed” basis) that summarize new developments in the technical and commercial aspects of the metallocene/SSC field. These are typically 60-80+ pages in length and will be distinguished by original analysis of items compiled from our service and/or more in-depth coverage of selected commercial/technological topics.

Contents of the reports include items such as: a comprehensive analysis of key new patents; an update on joint ventures, commercial announcements, and other major trends, on a company by company basis. Further representative topics include:

- Company developments
- Applications developments/trends
- Processing breakthroughs

- JV partner developments
- Legal environment and actions
- TCGR's analysis regarding the strategic implications of the above

In addition, our fax/e-mail service keeps clients abreast of any news, press releases, or related events that could have a major impact on the business. This service insures that clients are not left out of rapid flow of announcements that seem to be occurring at an ever-increasing pace, and could impact your strategies.

TCGR's service also plays a supporting role for producers in developing and expanding new application opportunities for the industry. In this regard, TCGR's independent role fosters polymer producers' and processors' efforts in evaluating new materials and markets. The competitive position of the metallocene- and SSC-based materials, however, is always stated in reference to those available from current technologies (e.g., Ziegler/Natta resins, engineered and functionalized materials, compounds, etc.).

The Catalyst Group Resources, Inc....

The Catalyst Group Resources, Inc. (TCGR) is uniquely qualified to assist clients in this area of metallocene and single-site catalysis and process technology. TCGR has released an array of major multi-client reports on metallocene- and SSC-based polymers. Our original work in metallocenes dates back to 1987, and includes both multi-client and client-confidential reports.

TCGR's metallocene/SSC reports are on "the cutting edge" of this technology, and will continue to be in future multi-clients during this decade. TCGR draws on a pool of leading technical experts worldwide in this field, who are routinely consulted for input into our periodic technology status reports. Recent examples of such metallocene multi-client publications are:

- *Integrated Catalyst & Process Technologies for Value-Added Polyolefins* (Published October 2003).
- *Combinatorial Approaches to Polymer Catalyst Discovery and Optimization: Technologies, Providers, and Resin Producer Strategies* (Proposed May 2001).
- *Strategic Implications of Polyolefin Industry Structural Change and Recent Metallocene Catalyst Patent Resolutions* (Published March 2000).
- *Polyolefin Technology Choices*, a study which links catalyst and process selections to products made and markets served (Published July 1999).
- *Polymers In Transition*, a program delineating the competitive impacts of new technologies on the polymers industry (Published November 1997).
- *Polypropylene: The Status, the Challenges, and the Strategies to Survive and Excel in the 1990s and Beyond* (Published May 1995).
- *Polyvinyl Chloride—Technology, Legislative Issues and Competing Advanced Polyolefins* (Published October 1994).
- *Biopolymers—Rapidly Evolving Competitive Processes* (Published April 1993).

- *Styrene and Diene Metallocene Polymer Technology—Technical/Commercial Advances* (Published August 1992).
- *Advanced Comonomer Polyolefins Using Metallocene Catalysis—The Third Generation* (Published May 1992).
- *Advanced Manufacturing Techniques for Homogeneous Stereocontrolled Polymerizations—An Economic Evaluation* (Published March 1991).
- *Technical Advances and Commercial Opportunities in Syndiotactic, UHMW, Copolymer and Block Copolymerization—The Next Decade* (Published June 1990).

TCGR conducts the most comprehensive independent in-depth market interviews on metallocenes and SSCs with leading polymer producers and processors, to gauge the long-run commercial potential of these novel technologies. We have assisted in commercial development of metallocene catalysts and resins for major producers and end users (in novel applications), and are therefore best positioned to provide the industry with accurate, up-to-date information, with sophisticated commercial/technical analysis. We are fully committed to continuing our metallocene and SSC industry consulting service well into the future.

The service is separate and distinct from TCGR's ongoing multi-client program in polymer catalysis. It is important to note that our service will not cover, other than through analysis and/or speculation, information that will continue to be protected by specific product/end-user secrecy development agreements.

This service is available for \$US14,500 for a one year subscription. Our "Order Form and Secrecy Agreement" can be found at the back of this proposal. If you have any further questions, please do not hesitate to contact us.

Sam Cupp
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 **The Catalyst Group Resources**

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Partial List of The Catalyst Group (TCGR's Parent Company) Clients...

Consulting services are grouped into four segments: (1) marketing and business strategy services; (2) technical research, process and engineering assistance; (3) R&D contract management; and (4) catalyst research and business planning. Activities consist of confidential business services (65%), multi-client industry studies (25%), and business communications (10%). Catalyst Consultants Publishing Company produces the only commercial newsletter within the industry, "The Catalyst Review."

The Catalyst Group (TCG) has expanded rapidly since its beginning in 1984 to include an international client base of over 200 companies, represented by many major US, European and Pacific Rim firms. A partial list of clients includes:

ABB Lummus	Engelhard Corporation	Petroleos de Venezuela SA
Advanced Elastomer Systems	ENI Group	PQ Corporation
Air Products & Chemicals	Equistar	Repsol
Akzo Nobel	ExxonMobil	Rhodia
Albemarle	GE	Rohm and Haas
Alcoa	General Electric	RWE/Vista
Asahi Chemical	Goodyear	SASOL/SASTECH
AtoFina	Great Lakes Chemical	Saudi Arabian Ind. (SABIC)
Bayer AG	Hoechst AG	Shell International
BASF AG	Honeywell (AlliedSignal)	Solvay
B.F. Goodrich	ICI/Synetix	Sumitomo Chemical
BOC Group	IFP	Sunoco
BP Amoco	Idemitsu Petrochemicals	Symyx Technologies
Calgon Carbon	Intevap SA Venezuela	Texaco, Inc.
Chevron Phillips	Japan Polyolefins	TOSOH Corporation
Condea Chemie GmbH	Johnson Matthey Inc.	TotalFina
CRI International	Kyung In Energy Ltd.	Union Carbide Corporation
Criterion Catalyst LP	Lubrizol	United Catalyst/Süd Chemie
Cytec	Mitsubishi Chemical	UOP LLC
Degussa-Hüls	Mitsui Petrochemical	W.R. Grace & Company
Dow Chemical Company	Monsanto	Yukong
DSM	NIST	Zeochem
DuPont Company	Norsk Hydro	
Eastman Chemicals	Nova Chemicals	
Elf Aquitaine	Pennzoil Products	

Subscribers know these answers and more...

Do you know the differences in claims between the DuPont and BP Chemical patents on novel single-site organometallics? What are the impacts of metallocenes and SSCs on the flexible packaging industry? What is the commercialization status of MPOs for specific leading films manufacturers? What is being done to reduce the cost of metallocene catalyst preparation? Why is this the year for metallocene-based PP? Who's leading research in metallocenes which do not require aluminoxanes? Who's aggressive in fitting MPOs into rotomolding and injection molding applications?

Order Form and Secrecy Agreement



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A subscription to the *Annual Metallocene and Single-Site Catalyst Program—Volume XV, October 2006 to September 2007* (Note: subscription will begin on date below and will run one full year). This includes:

- 12 issues of *The Metallocene and Single-Site Catalyst Monitor* monthly newsletter
___ via hard-copy ___ via e-mail ___ via both
- *Update* reports (published on an “as needed” basis)
- Fax service on critical metallocene/SSC news events
- Additional printed copies of *The Metallocene and Single-Site Catalyst Monitor* \$250 each

_____ Please enter our subscription for your program. Enclosed is our payment of \$US14,500. Please courier with no charge for shipping and handling. (Customers in Pennsylvania add 6% sales tax.)

_____ Please enter our subscription for your program. Bill us \$US14,500 (plus shipping and handling) invoiced net 30 days.

_____ *We would like to subscribe to your program for two (2) years from October 2006 to September 2008 for \$US27,000 (a discount of \$US2,000). Enclosed is our payment of \$US27,000; please courier with no charge for shipping and handling.*

In signing this order form, our company agrees to hold this report(s) confidential and not make them available to subsidiaries unless a controlling interest (51%) exists.

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