

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934

LYONDELL CHEMICAL COMPANY

(Name of Issuer)

Common Stock, par value \$1.00 per share

(Title of Class of Securities)

552078107

(CUSIP Number)

May 9, 2007

(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this
Schedule is filed:

Rule 13d-1(b)

Rule 13d-1(c)

Rule 13d-1(d)

* The remainder of this cover page shall be filled out for a reporting
person's initial filing on this form with respect to the subject class of
securities, and for any subsequent amendment containing information which
would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be
deemed to be "filed" for the purpose of Section 18 of the Securities Exchange
Act of 1934 ("Act") or otherwise subject to the liabilities of that section of
the Act but shall be subject to all other provisions of the Act (however, see
the Notes).

Continued on following pages

1. Names of Reporting Persons.

I.R.S. Identification Nos. of above persons (entities only).

MERRILL LYNCH & CO., INC.

2. Check the Appropriate Box if a Member of a Group

(a) []

(b) []

3. SEC Use Only

4. Citizenship or Place of Organization

Delaware

Number of Shares 5. Sole Voting Power None

Beneficially Owned by Each Reporting Person With	6.	Shared Voting Power	7,934,753 (*)
	7.	Sole Dispositive Power	None
	8.	Shared Dispositive Power	7,934,753 (*)

9. Aggregate Amount Beneficially Owned by Each Reporting Person
7,934,753 (*)

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
3.138% (*)

12. Type of Reporting Person:
HC, CO

(*)Merrill Lynch International or an affiliate may acquire up to an additional 14,000,000 shares or approximately 5.6% of the class in connection with the transactions described below in Item 4(a) of this report.

1. Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

MERRILL LYNCH, PIERCE, FENNER & SMITH INCORPORATED

2. Check the Appropriate Box if a Member of a Group
(a)
(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Delaware

Number of Shares Beneficially Owned by Each Reporting Person With	5.	Sole Voting Power	7,818,008
	6.	Shared Voting Power	None
	7.	Sole Dispositive Power	7,818,008

8. Shared Dispositive Power None

9. Aggregate Amount Beneficially Owned by Each Reporting Person
7,818,008

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
3.091% (*)

12. Type of Reporting Person:
BD, IA, CO

1. Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).
MERRILL LYNCH INTERNATIONAL

2. Check the Appropriate Box if a Member of a Group
(a)
(b)

3. SEC Use Only

4. Citizenship or Place of Organization
England and Wales

Number of Shares Beneficially Owned by Each Reporting Person With	5.	Sole Voting Power	87,933 (*)
	6.	Shared Voting Power	None
	7.	Sole Dispositive Power	87,933 (*)
	8.	Shared Dispositive Power	None

9. Aggregate Amount Beneficially Owned by Each Reporting Person
87,933 (*)

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
0.03% (*)

12. Type of Reporting Person:
BD, CO

(*Merrill Lynch International or an affiliate may acquire additional shares in connection with the transactions described below in Item 4(a) of this report.

1. Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

MERRILL LYNCH BANK & TRUST CO., FSB

2. Check the Appropriate Box if a Member of a Group
(a)
(b)

3. SEC Use Only

4. Citizenship or Place of Organization
Federal Savings Bank under US Federal law

Number of Shares Beneficially Owned by Each Reporting Person With
5. Sole Voting Power 3,007

6. Shared Voting Power None

7. Sole Dispositive Power 3,007

8. Shared Dispositive Power None

9. Aggregate Amount Beneficially Owned by Each Reporting Person
3,007

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)
0.00%

12. Type of Reporting Person:
BK

1. Names of Reporting Persons.
I.R.S. Identification Nos. of above persons (entities only).

MERRILL LYNCH FINANCIAL MARKETS, INC.

2. Check the Appropriate Box if a Member of a Group

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization

Delaware

Number of 5. Sole Voting Power 25,805
Shares

Beneficially -----
Owned by Each 6. Shared Voting Power None
Reporting
Person With

7. Sole Dispositive Power 25,805

8. Shared Dispositive Power None

9. Aggregate Amount Beneficially Owned by Each Reporting Person

25,805

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See
Instructions)

11. Percent of Class Represented by Amount in Row (9)

0.01%

12. Type of Reporting Person:

BD, CO

Item 1(a). Name of Issuer:

Lyondell Chemical Company (the "Issuer")

Item 1(b). Address of Issuer's Principal Executive Offices:

1221 McKinney Street,
Suite 700, Houston, Texas 77010

Item 2(a). Name of Persons Filing:

Merrill Lynch & Co., Inc.
Merrill Lynch, Pierce, Fenner & Smith Incorporated
Merrill Lynch International
Merrill Lynch Bank & Trust Co., FSB
Merrill Lynch Financial Markets, Inc.

Item 2(b). Address of Principal Business Office or, if None, Residence:

<TABLE> <CAPTION> <S>	<C>	<C>
Merrill Lynch & Co., Inc. 4 World Financial Center New York, New York 10080	Merrill Lynch, Pierce, Fenner & Smith Incorporated 4 World Financial Center New York, New York 10080	Merrill Lynch International 4 King Edward Street London, England EC1A 1HQ

Merrill Lynch Bank & Trust Co., FSB 1300 Merrill Lynch Drive, 3rd Floor Pennington, NJ 08534	Merrill Lynch Financial Markets, Inc. 4 World Financial Center New York, New York 10080
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Item 2(c). Citizenship:

See Item 4 of cover pages

Item 2(d). Title of Class of Securities:

Common Stock, par value \$1.00 per share

Item 2(e). CUSIP Number:

552078107

Item 3. If This Statement is Filed Pursuant to ss.240.13d-1(b) or 240.13d-2(b) or (c), Check Whether the Person Filing is a:

Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") is a broker-dealer registered under Section 15 of the Exchange Act and a direct wholly-owned subsidiary of Merrill Lynch & Co. Inc. ("ML&Co.").

Merrill Lynch International ("MLI") is a London-based broker-dealer in securities, a member of the International Securities Markets Association and its activities are regulated by the U.K. Securities and Futures Authority Limited and the London Stock

Exchange. MLI is eligible to file this statement of beneficial ownership on Schedule 13G pursuant to a November 24, 1993 no-action letter from the Securities and Exchange Commission's Division of Corporation Finance (1993 SEC No-Act. LEXIS 1121 (November 24, 1993)). MLI is an indirect wholly-owned subsidiary of ML&Co.

Merrill Lynch Bank & Trust Co. FSB ("MLB&T") is a Federal savings bank organized under U.S. Federal law and an indirect wholly-owned subsidiary of ML&Co.

Merrill Lynch Financial Markets, Inc. ("MLFM") is registered with the Securities and Exchange Commission to act as an OTC derivatives dealer and is a direct wholly-owned subsidiary of ML&Co.

ML&Co. is a parent holding company.

Item 4. Ownership:

(a) Amount Beneficially Owned:

As of the close of business on May 9, 2007, MLPF&S owned directly 7,818,008 shares of the Issuer's common stock. This includes 6,990,070 shares of the Issuer's common stock that MLPF&S acquired on May 9, 2007 pursuant to a Stock Purchase Agreement with Occidental Petroleum Corporation and Occidental Chemical Holding Corporation ("OCHC") dated May 4, 2007 (the "Purchase Agreement"). MLPF&S is also party to a total return swap agreement with OCHC dated May 4, 2007 with respect to 14,000,000 shares of the Issuer's common stock (the "Swap Agreement"). ML&Co. has guaranteed performance of MLPF&S's obligations under such Swap Agreement.

As of the close of business on May 9, 2007, MLI owned directly 87,933 shares of the Issuer's common stock. MLI entered into a postpaid share

forward agreement with AI Chemical Investments LLC dated May 4, 2007 with respect to 20,990,770 shares of the Issuer's common stock (the "Postpaid Share Forward Agreement"). The Postpaid Share Forward Agreement may be settled in cash, shares or net shares. ML&Co has guaranteed performance of MLI's obligations under such Postpaid Share Forward Agreement.

As of the close of business on May 9, 2007, MLB&T and MLFM owned directly 3,007 and 25,805 shares of the Issuer's common stock, respectively.

(b) Percent of Class:

See Item 11 of Cover Pages.

(c) Number of Shares of which such person has:

Sole Voting PowerSee Item 5 of Cover Pages

Shared Voting PowerSee Item 6 of Cover Pages

Sole Dispositive PowerSee Item 7 of Cover Pages

Shared Dispositive PowerSee Item 8 of Cover Pages

Item 5. Ownership of Five Percent or Less of a Class:

This Item 5 is not applicable.

Item 6. Ownership of More than Five Percent on Behalf of Another Person:

This Item 6 is not applicable.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person:

See Item 3 above.

Item 8. Identification and Classification of Members of the Group:

This Item 8 is not applicable.

Item 9. Notice of Dissolution of Group:

This Item 9 is not applicable.

Item 10. Certification:

By signing below each of the Reporting Persons certifies that, to the best of their knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

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SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: May 11, 2007

MERRILL LYNCH & CO., INC.

By: /s/ Cara Londin

Name: Cara Londin
Title: Assistant Secretary

Date: May 11, 2007

MERRILL LYNCH, PIERCE, FENNER & SMITH
INCORPORATED

By: /s/ Cara Londin

Name: Cara Londin
Title: Assistant Secretary

Date: May 11, 2007

MERRILL LYNCH INTERNATIONAL

By: /s/ Brent Clapacs

Name: Brent Clapacs
Title: Managing Director

Date: May 11, 2007

MERRILL LYNCH BANK & TRUST CO., FSB

By: /s/ Jennifer Marre

Name: Jennifer Marre
Title: First Vice President

Date: May 11, 2007

MERRILL LYNCH FINANCIAL MARKETS, INC.

By: /s/ Thomas Watson

Name: Thomas Watson
Title: First Vice President

Exhibit A to Schedule 13G
Power of Attorney

The undersigned, Merrill Lynch & Co., Inc. (the "Corporation"), a corporation duly organized under the laws of Delaware, with its principal place of business at World Financial Center, North Tower, 250 Vesey Street, New York, New York 10281 does hereby make, constitute and appoint Richard B. Alsop, Richard D. Kreuder, Andrea Lowenthal, Gregory T. Russo, or any other individual from time to time elected or appointed as secretary or an assistant secretary of the Corporation, acting severally, each of whose address is Merrill Lynch & Co., Inc., World Financial Center, North Tower, 250 Vesey Street, New York, New York 10281, as its true and lawful attorneys in-fact, for it and in its name, place and stead (i) to execute on behalf of the Corporation and cause to be filed and/or delivered, as required under Section 13(d) of the Securities Exchange Act of 1934 (the "Act") and the regulations thereunder, any number, as appropriate, of original, copies, or electronic filings of the Securities and Exchange Commission Schedule 13D or Schedule 13G Beneficial Ownership Reports (together with any amendments and joint filing agreements under Rule 13d-1(f) (1) of the Act, as may be required thereto) to be filed and/or delivered with respect to any equity security (as defined in Rule 13d-1(d) under the Act) beneficially owned by the undersigned and which must be reported by the undersigned pursuant to Section 13(d) of the Act and the regulations thereunder, (ii) to execute on behalf of the Corporation and cause to be filed and/or delivered, any number, as appropriate, of original, copies or electronic filings of any forms (including without limitation), Securities and Exchange Commission Forms 3, 4 and 5) required to be filed pursuant to Section 16(a) of the Act and the regulations thereunder, and (iii) generally to take such other actions and perform such other things necessary to effectuate the foregoing as fully in all respects as if the undersigned could do if personally present.

This Power of Attorney shall remain in effect until revoked, in writing, by the undersigned.

IN WITNESS WHEREOF, the undersigned has executed this Power of Attorney, this 17th day of November 1995.

MERRILL LYNCH & Co., Inc.

By: /s/ David H. Komansky

Name: David H. Komansky
Title: President and Chief Operating Officer

Exhibit B to Schedule 13G
Power of Attorney

The undersigned, Merrill Lynch, Pierce, Fenner & Smith Incorporated, (the "Corporation") a corporation duly organized under the laws of Delaware, with its principal place of business at World Financial Center, North Tower, 250 Vesey Street, New York, New York 10281 does hereby make, constitute and appoint Richard B. Alsop, Richard D. Kreuder, Andrea Lowenthal, Gregory T. Russo, or any other individual from time to time elected or appointed as secretary or an assistant secretary of the Corporation, acting severally, each of whose address is Merrill Lynch & Co., Inc., World Financial Center, North

Tower, 250 Vesey Street, New York, New York, 10281 as its attorneys-in- fact, for it and in its name, place and stead (i) to execute on behalf of the Corporation and cause to be filed and/or delivered, as required under Section 13(d) of the Securities Exchange Act of 1934 (the "Act") and the regulations thereunder, any number, as appropriate, of original, copies, or electronic filings of the Securities and Exchange Commission Schedule 13D or Schedule 13G Beneficial Ownership Reports (together with any amendments and joint filing agreements under Rule 13d-1(f) (1) of the Act, as may be required thereto) to be filed and/or delivered with respect to any equity security (as defined in Rule 13d-1(d) under the Act) beneficially owned by the undersigned and which must be reported by the undersigned pursuant to Section 13(d) of the Act and the regulations thereunder, (ii) and generally to take such other actions and perform such other things necessary to effectuate the foregoing as fully in all respects as if the undersigned could do if personally present. This Power of Attorney shall remain in effect until revoked, in writing, by the undersigned.

IN WITNESS WHEREOF, the undersigned has executed this Power of Attorney, this 25th day of February, 1995.

MERRILL LYNCH, PIERCE, FENNER & SMITH INCORPORATED

By: /s/ David H. Komansky

Name: David H. Komansky

Title: President and Chief Operating Officer