UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, DC 20549

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

POLYONE CORPORATION

(Exact Name of Registrant as Specified in Its Charter)

OHIO
(State or Other Jurisdiction
of Incorporation or Organization)

34-1730488 (I.R.S. Employer Identification No.)

33587 Walker Road, Avon Lake, Ohio 44012 (Address of Principal Executive Offices Including Zip Code)

POLYONE RETIREMENT SAVINGS PLAN

(Full Title of the Plan)

Lisa K. Kunkle, Esq.
Vice President, General Counsel and Secretary
PolyOne Corporation
33587 Walker Road
Avon Lake, Ohio 44012
(440) 930-1000

(Name, Address and Telephone Number of Agent For Service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer o

Accelerated filer \square

Non-accelerated filer o

Smaller Reporting Company o

(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of		Proposed Maxi-	Proposed Maxi-	Amount of
Securities to	Amount to be	mum Offering	mum Aggregate	Registration
be Registered	Registered (1)(2)	Price Per Share (3)	Offering Price (3)	Fee
Common Shares, par value \$0.01 per share	10,000,000	\$2.29	\$22,900,000	\$899.97

- 1) Represents the maximum number of common shares of the Registrant, \$0.01 par value ("Common Shares"), issuable pursuant to the PolyOne Retirement Savings Plan (the "Plan") being registered hereon.
- (2) Pursuant to Rule 416(c) of the Securities Act of 1933 (the "Securities Act"), this Registration Statement also covers an indeterminate number of interests to be offered or sold pursuant to the Plan.
- (3) Estimated solely for calculating the amount of the registration fee, pursuant to paragraphs (c) and (h) of Rule 457 of the General Rules and Regulations under the Securities Act, on the basis of the average of the high and low sale prices of the Common Shares on the New York Stock Exchange on February 18, 2009, within five business days prior to filing.

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PolyOne Corporation, an Ohio corporation (the "Registrant"), hereby files this Registration Statement on Form S-8 to register an additional 10,000,000 Common Shares under the Plan for which a previously filed registration statement on Form S-8 relating to the Plan is effective. Pursuant to General Instruction E to Form S-8, this Registration Statement incorporates by reference the content of the Registration Statement on Form S-8 (Registration No. 333-141029) filed by the Registrant on March 2, 2007, with respect to the Plan and the DH Compounding Savings and Retirement Plan (which was merged into the Plan on December 31, 2008), including all attachments and exhibits thereto, except to the extent supplemented, amended or superseded by the information set forth herein

PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents have been filed by the Registrant, with the Securities and Exchange Commission (the "Commission") and are incorporated herein by reference:

- The Registrant's Annual Report on Form 10-K, filed February 23, 2009;
- Annual Report on Form 11-K for the year ended December 31, 2007, filed by the PolyOne Retirement Savings Plan on June 27, 2008;
- The Registrant's Current Reports on Form 8-K, filed January 22, 2009 and February 5, 2009; and
- The description of the Registrant's Common Shares contained in the registration statement on Form 8-A filed August 31, 2000, including any subsequently filed amendments and reports updating such description.

The Registrant will not, however, incorporate by reference any documents or portions thereof that are not deemed "filed" with the Commission, including any information furnished pursuant to Item 2.02 or Item 7.01 of its current reports on Form 8-K unless, and except to the extent, specified in such reports.

All documents filed by the Registrant with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934 subsequent to the date of this Registration Statement and prior to the filing of a post-effective amendment that indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, will be deemed to be incorporated by reference in this Registration Statement and to be part hereof from the date of filing of such documents. Any statement contained in any document incorporated or deemed to be incorporated by reference herein will be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded will not be deemed, except as modified or superseded, to constitute a part of this Registration Statement.

Item 8. Exhibits.

Exhibit Number	Description
23.1	Consent of Independent Registered Public Accounting Firm — Ernst & Young LLP.

Exhibit Number	Description	
23.2	Consent of Independent Registered Public Accounting Firm — KPMG LLP.	
23.3	Consent of Independent Registered Public Accounting Firm — Ernst & Young LLP.	
24	Power of Attorney.	
[Signatures on following page]		

SIGNATURES

The Registrant. Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Avon Lake, State of Ohio on February 24, 2009.

POLYONE CORPORATION

By: /s/ Lisa K. Kunkle

Lisa K. Kunkle

Vice President, General Counsel and

Secretary

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the date indicated.

Date: February 24, 2009	*
	Stephen D. Newlin
	Chairman of the Board, President and Chief
	Executive Officer (Principal Executive Officer)
Date: February 24, 2009	/s/ Robert M. Patterson
	Robert M. Patterson
	Senior Vice President and Chief Financial Officer
	(Principal Financial and Accounting Officer)
Date: February 24, 2009	*
	J. Douglas Campbell
	Director
Date: February 24, 2009	*
•	Carol A. Cartwright
	Director
Date: February 24, 2009	*
	Gale Duff-Bloom
	Director

Date: February 24, 2009	*
	Richard H. Fearon
	Director
Detail February 24, 2000	*
Date: February 24, 2009	
	Robert A. Garda Director
	Director
Date: February 24, 2009	*
•	Gordon D. Harnett
	Director
Date: February 24, 2009	*
	Richard A. Lorraine
	Director
Data, Eabruary 24, 2000	*
Date: February 24, 2009	Edward J. Mooney
	Director
	Director
Date: February 24, 2009	*
,	William H. Powell
	Director
Date: February 24, 2009	*
	Farah M. Walters
	Director

^{*} This registration statement has been signed on behalf of the above officers and directors by Lisa K. Kunkle, as attorney-in-fact pursuant to a power of attorney filed as Exhibit 24 to this registration statement.

DATED: February 24, 2009 By: /s/ Lisa K. Kunkle

Lisa K. Kunkle Attorney-in-Fact

The Plan. Pursuant to the requirements of the Securities Act, the trustees (or other persons who administer the employee benefit plan) have duly caused this registration statement to be signed on their behalf by the undersigned, thereunto duly authorized, in the city of Avon Lake, State of Ohio, on February 24, 2009.

POLYONE RETIREMENT SAVINGS PLAN

By: PolyOne Retirement Plan Committee

By: /s/ Robert M. Patterson

Robert M. Patterson Plan Administrator

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Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the PolyOne Retirement Savings Plan of PolyOne Corporation of our reports (a) dated February 20, 2009, with respect to the consolidated financial statements of PolyOne Corporation and the effectiveness of internal control over financial reporting of PolyOne Corporation, included in its Annual Report (Form 10-K) for the year ended December 31, 2008, and (b) dated June 27, 2008, with respect to the financial statements and schedule of the PolyOne Retirement Savings Plan included in the Plan's Annual Report (Form 11-K), for the year ended December 31, 2007, filed with the Securities and Exchange Commission.

/S/ ERNST & YOUNG LLP

Cleveland, Ohio February 23, 2009

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this registration statement on Form S-8 of PolyOne Corporation of our report dated February 29, 2008, with respect to the consolidated balance sheet of Oxy Vinyls, LP and subsidiaries (the Partnership) as of June 30, 2007 and the related consolidated statements of operations, changes in partners' capital, and cash flows for the six months ended June 30, 2007 and the year ended December 31, 2006, which report appears in the December 31, 2008 annual report on Form 10-K of PolyOne Corporation. Our report refers to a change in the method of accounting for planned major maintenance activities effective January 1, 2007 and a change in the method of accounting for defined benefit pension and other postretirement plans effective December 31, 2006.

/s/ KPMG LLP KPMG LLP Dallas, Texas February 20, 2009

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the PolyOne Retirement Savings Plan of PolyOne Corporation of our report dated February 20, 2009, with respect to the financial statements of SunBelt Chlor Alkali Partnership included in the Annual Report (Form 10-K) of PolyOne Corporation for the year ended December 31, 2008, filed with the Securities and Exchange Commission.

/S/ ERNST & YOUNG LLP

Cleveland, Ohio February 23, 2009

POLYONE CORPORATION REGISTRATION STATEMENT ON FORM S-8 POWER OF ATTORNEY

Each undersigned officer and/or director of PolyOne Corporation, an Ohio corporation (the "*Registrant*"), does hereby make, constitute and appoint Stephen D. Newlin, Lisa K. Kunkle, John L. Rastetter and Robert M. Patterson, and each of them, as the true and lawful attorney-in-fact or attorneys-in-fact, with full power of substitution and resubstitution, for each of the undersigned and in the name, place and stead of each of the undersigned, to execute and file (i) a Registration Statement on Form S-8 (the "*Form S-8 Registration Statement*") with respect to the registration under the Securities Act of 1933, as amended, of Common Shares of the Registrant issuable in connection with the PolyOne Retirement Savings Plan, (ii) any and all amendments, including post-effective amendments, supplements and exhibits to the Form S-8 Registration Statement and (iii) any and all applications or other documents to be filed with the Securities and Exchange Commission or any state securities commission or other regulatory authority or exchange with respect to the securities covered by the Form S-8 Registration Statement, with full power and authority to do and perform any and all acts and things whatsoever necessary, appropriate or desirable to be done in the premises, or in the name, place and stead of the said director and/or officer, hereby ratifying and approving the acts of said attorneys and any of them and any such substitute.

IN WITNESS WHEREOF, the undersigned have subscribed these presents as of the 24th day of February, 2009.

/s/ Stephen D. Newlin	/s/ Robert M. Patterson	
Stephen D. Newlin	Robert M. Patterson	
Chairman, President and Chief Executive Officer	Senior Vice President and Chief Financial Officer	
/s/ J. Douglas Campbell	/s/ Carol A. Cartwright	
J. Douglas Campbell	Dr. Carol A. Cartwright	
Director	Director	
/s/ Gale Duff-Bloom	/s/ Richard H. Fearon	
Gale Duff-Bloom	Richard H. Fearon	
Director	Director	
/s/ Robert A. Garda	/s/ Gordon D. Harnett	
Robert A. Garda	Gordon D. Harnett	
Director	Director	
/s/ Richard A. Lorraine	/s/ Edward J. Mooney	
Richard A. Lorraine	Edward J. Mooney	
Director	Director	
/s/ William H. Powell	/s/ Farah M. Walters	
William H. Powell	Farah M. Walters	
Director	Director	