

FERRO CORP  
Form 10-K  
February 29, 2012  
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**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**Form 10-K**

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended December 31, 2011

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number 1-584

**FERRO CORPORATION**

*(Exact name of registrant as specified in its charter)*

**Ohio**  
*(State of Corporation)*  
**6060 Parkland Blvd.**

**34-0217820**  
*(IRS Employer Identification No.)*

**Mayfield Heights, OH**  
*(Address of principal executive offices)*

**44124**  
*(Zip Code)*

**Registrant's telephone number, including area code: 216-875-5600**

**Securities Registered Pursuant to section 12(b) of the Act:**

**Title of Each Class**  
Common Stock, par value \$1.00

**Name of Each Exchange on Which Registered**  
New York Stock Exchange

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Securities Registered Pursuant to Section 12(g) of the Act:

**6.50% Convertible Senior Notes due August 15, 2013**

**7.875% Senior Notes due August 15, 2018**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES  NO

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. YES  NO

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES  NO

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). YES  NO

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained here, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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  Accelerated filer  Non-accelerated filer  Smaller reporting company   
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). YES  NO

The aggregate market value of Ferro Corporation Common Stock, par value \$1.00, held by non-affiliates and based on the closing sale price as of June 30, 2011, was approximately \$1,138,630,000.

On January 31, 2012, there were 86,567,317 shares of Ferro Corporation Common Stock, par value \$1.00 outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the Proxy Statement for Ferro Corporation's 2012 Annual Meeting of Shareholders are incorporated into Part III of this Annual Report on Form 10-K.

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**PART I**

**Item 1 Business**

***History, Organization and Products***

Ferro Corporation was incorporated in Ohio in 1919 as an enameling company. When we use the terms Ferro, we, us or the Company, we are referring to Ferro Corporation and its subsidiaries unless we indicate otherwise. Today, we are a leading producer of specialty materials and chemicals that are sold to a broad range of manufacturers who, in turn, make products for many end-use markets. We operate approximately 40 facilities around the world that manufacture the following types of products:

Electronic, Color and Glass Materials Conductive metal pastes and powders, polishing materials, glazes, enamels, pigments, decoration colors, and other performance materials; and

Polymer and Ceramic Engineered Materials Polymer additives, engineered plastic compounds, pigment dispersions, glazes, frits, porcelain enamel, pigments, and high-potency pharmaceutical active ingredients.

We refer to our products as performance materials and chemicals because we formulate them to perform specific functions in the manufacturing processes and end products of our customers. The products we develop often are delivered to our customers in combination with customized technical service. The value of our products stems from the benefits they deliver in actual use. We develop and deliver innovative products to our customers through our key strengths in:

Particle Engineering Our ability to design and produce very small particles made of a broad variety of materials, with precisely controlled characteristics of shape, size and size distribution. We understand how to disperse these particles within liquid, paste and gel formulations.

Color and Glass Science Our understanding of the chemistry required to develop and produce pigments that provide color characteristics ideally suited to customers applications. We have a demonstrated ability to provide glass-based coatings with properties that precisely meet customers needs in a broad variety of applications.

Surface Chemistry and Surface Application Technology Our understanding of chemicals and materials used to develop products and processes that involve the interface between layers and the surface properties of materials.

Product Formulation Our ability to develop and manufacture combinations of materials that deliver specific performance characteristics designed to work within customers particular manufacturing processes.

We deliver these key technical strengths to our customers in a way that creates additional value through our integrated applications support. Our applications support personnel provide assistance to our customers in their material specification and evaluation, product design and manufacturing process characterization in order to help them optimize the efficient and cost-effective application of our products.

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We divide our operations into eight business units, which comprise six reportable segments. We have grouped these units by their product group below:

**Polymer and Ceramic Engineered Materials**

Polymer Additives  
 Specialty Plastics  
 Pharmaceuticals  
 Tile Coating Systems(1)  
 Porcelain Enamel(1)

**Electronic, Color and Glass Materials**

Electronic Materials  
 Glass Systems(2)  
 Performance Pigments and Colors(2)

- (1) Tile Coating Systems and Porcelain Enamel are combined into one reportable segment, Performance Coatings, for financial reporting purposes.
- (2) Glass Systems and Performance Pigments and Colors are combined into one reportable segment, Color and Glass Performance Materials, for financial reporting purposes.

Financial information about our segments is included herein in Note 19 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K.

***Markets and Customers***

Ferro's products are used in a variety of product applications in markets including:

Appliances  
 Automobiles  
 Building and renovation  
 Electronics  
 Household furnishings

Industrial products  
 Packaging  
 Pharmaceuticals  
 Photovoltaic products

Many of our products are used as coatings on our customers' products, such as glazes and decorations on tile, glass and dinnerware. Other products are applied as pastes in products such as solar cells and other electronic components. Still other products are added during our customers' manufacturing processes to provide desirable properties to their end product. Often, our products are a small portion of the total cost of our customers' products, but they can be critical to the appearance or functionality of those products.

Our leading customers include manufacturers of ceramic tile, major appliances, construction materials, automobile parts, glass, bottles, vinyl flooring and wall coverings, solar cells, and pharmaceuticals. Many of our customers, including makers of major appliances and automobile parts, purchase materials from more than one of our business units. Our customer base is well diversified both geographically and by end market.

We generally sell our products directly to our customers. However, a portion of our business uses indirect sales channels, such as agents and distributors, to deliver products to market. In 2011, no single customer or related group of customers represented more than 10% of net sales. In addition, none of our reportable segments is dependent on any single customer or related group of customers.

***Backlog of Orders and Seasonality***

Generally, there is no significant lead time between customer orders and delivery in any of our business segments. As a result, we do not consider that the dollar amount of backlogged orders believed to be firm is material information for an understanding of our business. We also do not regard any material part of our business to be seasonal. However, customer demand has historically been higher in the second quarter when building and renovation markets are particularly active, and this quarter is normally the strongest for sales and operating profit.

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### ***Competition***

In most of our markets, we have a substantial number of competitors, none of which is dominant. Due to the diverse nature of our product lines, no single competitor directly matches all of our product offerings. Our competition varies by product and by region, and is based primarily on price, product quality and performance, customer service and technical support, and our ability to develop custom products to meet specific customer requirements.

We are a worldwide leader in the production of glass enamels, porcelain enamels, ceramic glaze coatings, and conductive metal pastes used in solar cells. There is strong competition in our markets, ranging from large multinational corporations to local producers. While many of our customers purchase custom products and formulations from us, our customers could generally buy from other sources, if necessary.

### ***Raw Materials and Supplier Relations***

Raw materials widely used in our operations include:

#### **Metal Oxides:**

Aluminum oxide(3)  
Cerium oxide(3)  
Cobalt oxide(1)(2)  
Nickel oxide(1)(2)  
Titanium dioxide(1)(2)(3)(4)  
Zinc oxide(2)

#### **Precious and Non-precious Metals:**

Aluminum(2)(3)  
Bismuth(1)  
Chrome(1)(2)  
Copper(1)(3)  
Gold(1)(3)  
Palladium(3)  
Platinum(3)  
Silver(3)

#### **Polymers:(4)**

Polyethylene  
Polypropylene  
Polystyrene  
Unsaturated polyester

#### **Other Inorganic Materials:**

Boric acid(2)  
Clay(2)  
Feldspar(2)  
Fiberglass(4)  
Lithium(2)  
Silica(2)  
Zircon(2)

#### **Other Organic Materials:(5)**

Butanol  
Phthalic anhydride  
Soybean oil  
Tallow  
Toluene

#### **Energy:**

Electricity  
Natural gas

- (1) Primarily used by Color and Glass Performance Materials.
- (2) Primarily used by Tile Coating Systems and Porcelain Enamel.
- (3) Primarily used by Electronic Materials.
- (4) Primarily used by Specialty Plastics.
- (5) Primarily used by Polymer Additives.

These raw materials make up a large portion of our product costs in certain of our product lines, and fluctuations in the cost of raw materials may have a significant impact on the financial performance of the related

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businesses. We attempt to pass through to our customers raw material cost increases, including those related to precious metals.

We have a broad supplier base and, in many instances, multiple sources of essential raw materials are available worldwide if problems arise with a particular supplier. We maintain many comprehensive supplier agreements for strategic and critical raw materials. We did not encounter raw material shortages in 2011 that significantly affected our manufacturing operations, but we are subject to volatile raw material costs that can affect our results of operations.

### ***Environmental Matters***

As part of the production of some of our products, we handle, process, use and store hazardous materials. As a result, we operate manufacturing facilities that are subject to a broad array of environmental laws and regulations in the countries in which we operate, particularly for plant wastes and emissions. In addition, some of our products are subject to restrictions under laws or regulations such as California Proposition 65 or the European Union's (EU) chemical substances directive. The costs to comply with complex environmental laws and regulations are significant and will continue for the industry and us for the foreseeable future. These routine costs are expensed as they are incurred. While these costs may increase in the future, they are not expected to have a material impact on our financial position, liquidity or results of operations. We believe that we are in substantial compliance with the environmental regulations to which our operations are subject and that, to the extent we may not be in compliance with such regulations, non-compliance will not have a materially adverse effect on our financial position, liquidity or results of operations.

Our policy is to operate our plants and facilities in a manner that protects the environment and the health and safety of our employees and the public. We intend to continue to make expenditures for environmental protection and improvements in a timely manner consistent with available technology. Although we cannot precisely predict future environmental spending, we do not expect the costs to have a material impact on our financial position, liquidity or results of operations. Capital expenditures for environmental protection were \$2.0 million in 2011, \$1.5 million in 2010, and \$2.4 million in 2009.

We also accrue for environmental remediation costs when it is probable that a liability has been incurred and we can reasonably estimate the amount. We determine the timing and amount of any liability based upon assumptions regarding future events, and inherent uncertainties exist in such evaluations primarily due to unknown conditions, changing governmental regulations and legal standards regarding liability, and evolving technologies. We adjust these liabilities periodically as remediation efforts progress, the nature and extent of contamination becomes more certain, or as additional technical or legal information becomes available.

### ***Research and Development***

We are involved worldwide in research and development activities relating to new and existing products, services and technologies required by our customers' continually changing markets. Our research and development resources are organized into centers of excellence that support our regional and worldwide major business units. We also conduct research and development activities at our Posnick Center of Innovative Technology in Independence, Ohio. These centers are augmented by local laboratories that provide technical service and support to meet customer and market needs in various geographic areas.

Total expenditures in continuing operations for product and application technology, including research and development, customer technical support and other related activities, were \$42.4 million in 2011, \$37.2 million in 2010, and \$34.9 million in 2009. These amounts include expenditures for company-sponsored research and development activities of approximately \$30.4 million in 2011, \$27.3 million in 2010, and \$28.3 million in 2009.

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***Patents, Trademarks and Licenses***

We own a substantial number of patents and patent applications relating to our various products and their uses. While these patents are of importance to us and we exercise diligence to ensure that they are valid, we do not believe that the invalidity or expiration of any single patent or group of patents would have a material adverse effect on our businesses. Our patents will expire at various dates through the year 2031. We also use a number of trademarks that are important to our businesses as a whole or to a particular segment. We believe that these trademarks are adequately protected.

***Employees***

At December 31, 2011, we employed 5,120 full-time employees, including 3,432 employees in our foreign consolidated subsidiaries and 1,688 in the United States ( U.S. ). Total employment increased by 42 in our foreign subsidiaries and by 44 in the U.S. from the prior year end due to the net effect of additions related to new business opportunities and reductions made in areas where sales activity declined.

Collective bargaining agreements cover approximately 18% of our U.S. workforce. Approximately 9% of the U.S. employees are affected by labor agreements that expire in 2012, and we expect to complete renewals of these agreements without significant disruption to the related businesses. We consider our relations with our employees, including those covered by collective bargaining agreements, to be good.

Our employees in Europe have protections afforded them by local laws and regulations through unions and works councils. Some of these laws and regulations may affect the timing, amount and nature of restructuring and cost reduction programs in that region.

***Domestic and Foreign Operations***

We began international operations in 1927. Our products are manufactured and / or distributed through our consolidated subsidiaries and unconsolidated affiliates in the following countries:

**Consolidated Subsidiaries:**

Argentina	Egypt	Japan	Spain
Australia	France	Malaysia	Taiwan
Austria	Germany	Mexico	Thailand
Belgium	India	Netherlands	United Kingdom
Brazil	Indonesia	Portugal	United States
China	Italy	Russia	Venezuela

**Unconsolidated Affiliates:**

Italy	Spain	South Korea	Thailand
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Financial information for geographic areas is included in Note 19 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K. More than 50% of our net sales are outside of the U.S. Our customers represent more than 30 industries and operate in approximately 100 countries.

Our U.S. parent company receives technical service fees and/or royalties from many of its foreign subsidiaries. As a matter of corporate policy, the foreign subsidiaries have historically been expected to remit a portion of their annual earnings to the U.S. parent company as dividends. To the extent earnings of foreign subsidiaries are not remitted to the U.S. parent company, those earnings are indefinitely re-invested in those subsidiaries.



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### ***Available Information***

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments, will be made available free of charge on our Web site, [www.ferro.com](http://www.ferro.com), as soon as reasonably practical, following the filing of the reports with the U.S. Securities and Exchange Commission ( SEC ). Our Corporate Governance Principles, Legal and Ethical Policies, Guidelines for Determining Director Independence, and charters for our Audit Committee, Compensation Committee, and Governance and Nomination Committee are available free of charge on our Web site or to any shareholder who requests them from the Ferro Corporation Investor Relations Department located at 6060 Parkland Blvd., Mayfield Heights, Ohio, 44124.

### ***Forward-looking Statements***

Certain statements contained here and in future filings with the SEC reflect our expectations with respect to future performance and constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements are subject to a variety of uncertainties, unknown risks and other factors concerning our operations and the business environment, which are difficult to predict and are beyond our control.

### **Item 1A Risk Factors**

Many factors could cause our actual results to differ materially from those suggested by statements contained in this filing and could adversely affect our future financial performance. Such factors include the following:

***We sell our products into industries where demand has been unpredictable, cyclical or heavily influenced by consumer spending, and such demand and our results of operations may be further impacted by macro-economic circumstances and uncertainty in credit markets.***

We sell our products to a wide variety of customers who supply many different market segments. Many of these market segments, such as building and renovation, major appliances, transportation, and electronics, are cyclical or closely tied to consumer demand. Consumer demand is difficult to accurately forecast and incorrect forecasts of demand or unforeseen reductions in demand can adversely affect costs and profitability due to factors such as underused manufacturing capacity, excess inventory, or working capital needs.

Our results of operations are materially affected by conditions in capital markets and economies in the U.S. and elsewhere around the world. General economic conditions around the world deteriorated sharply at the end of 2008, and difficult economic conditions continue to exist. Concerns over fluctuating prices, energy costs, geopolitical issues, government deficits and debt loads, the availability and cost of credit, the U.S. mortgage market and a declining real estate market have contributed to increased volatility, diminished expectations, and uncertainty regarding economies around the world. These factors, combined with reduced business and consumer confidence, increased unemployment, and volatile raw materials costs, precipitated an economic slowdown and recession in a number of markets around the world. As a result of these conditions, our customers may experience cash flow problems and may modify, delay, or cancel plans to purchase our products. Additionally, if customers are not successful in generating sufficient revenue or are precluded from securing financing, they may not be able to pay, or may delay payment of, accounts receivable that are owed to us. Any reduction in demand or inability of our current and/or potential customers to pay us for our products may adversely affect our earnings and cash flow.

***Uncertainty in the development of the solar energy market could reduce the revenue we generate from product sales to this market.***

Our conductive pastes are used in the manufacture of solar cells and income attributable to the solar energy market has been increasing. The solar energy market is at a relatively early stage of development and the extent

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to which solar energy technology will be widely adopted is uncertain. Solar industry demand is affected by the availability and size of government and economic incentives related to the use of solar power. Reductions in, or eliminations or expirations of, governmental and economic incentives could result in decreased demand for solar cells, and, consequently, our products, which could have an adverse impact on our results of operations.

The recent downturn in the global solar market has resulted in financial difficulty for a number of industry participants and manufacturers of solar panels, which impacts their ability to purchase our products or pay us on amounts owed. We expect these difficulties to continue and, as a result, bad debt expense may increase for our Electronic Materials segment.

In addition, the solar industry relies on continuous innovation to improve efficiency and lower cost. Our ability to lead or keep up with innovations will impact our market position and growth prospects in the solar market.

***We are subject to a number of restrictive covenants under our credit facilities and the indenture governing our senior notes, which could affect our flexibility to fund ongoing operations and strategic initiatives, and, if we are unable to maintain compliance with such covenants, could lead to significant challenges in meeting our liquidity requirements.***

Our credit facilities and the indenture governing our senior notes contain a number of restrictive covenants, including those described in more detail in Note 6 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K. These covenants include customary operating restrictions that limit our ability to engage in certain activities, including additional loans and investments; prepayments, redemptions and repurchases of debt; and mergers, acquisitions and asset sales. We are also subject to customary financial covenants under our credit facilities, including a leverage ratio and a fixed charge coverage ratio. These covenants under our credit facilities restrict the amount of our borrowings, reducing our flexibility to fund ongoing operations and strategic initiatives. These facilities and our senior notes are described in more detail in Capital Resources and Liquidity under Item 7 and in Note 6 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K.

Breaches of these covenants could become defaults under our credit facilities and the indenture governing our senior notes and cause the acceleration of debt payments beyond our ability to pay. Compliance with some of these covenants is based on financial measures derived from our operating results. If economic conditions in key markets deteriorate, we may experience material adverse impacts to our business and operating results, such as through reduced customer demand and inflation. A decline in our business could make us unable to maintain compliance with these financial covenants, in which case, our lenders could demand immediate payment of outstanding amounts and we would need to seek alternate financing sources to pay off such debts and to fund our ongoing operations. Such financing may not be available on favorable terms, if at all.

***We depend on external financial resources, and the economic environment and credit market uncertainty could interrupt our access to capital markets, borrowings, or financial transactions to hedge certain risks, which could adversely affect our financial condition.***

At December 31, 2011, we had approximately \$309.3 million of short-term and long-term debt with varying maturities and approximately \$207.4 million of off balance sheet arrangements, including consignment arrangements for precious metals, bank guarantees, and standby letters of credit. These arrangements have allowed us to make investments in growth opportunities and fund working capital requirements. In addition, we may enter into financial transactions to hedge certain risks, including foreign exchange, commodity pricing, and sourcing of certain raw materials. Our continued access to capital markets, the stability of our lenders, customers and financial partners and their willingness to support our needs are essential to our liquidity and our ability to meet our current obligations and to fund operations and our strategic initiatives. An interruption in our access to

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external financing or financial transactions to hedge risk could adversely affect our business prospects and financial condition. See further information regarding our liquidity in Capital Resources and Liquidity under Item 7 and in Note 6 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K.

*We strive to improve operating margins through sales growth, price increases, productivity gains, and improved purchasing techniques, but we may not achieve the desired improvements.*

We work to improve operating profit margins through activities such as growing sales to achieve increased economies of scale, increasing prices, improving manufacturing processes, and adopting purchasing techniques that lower costs or provide increased cost predictability to realize cost savings. However, these activities depend on a combination of improved product design and engineering, effective manufacturing process control initiatives, cost-effective redistribution of production, and other efforts that may not be as successful as anticipated. The success of sales growth and price increases depends not only on our actions but also the strength of customer demand and competitors pricing responses, which are not fully predictable. Failure to successfully implement actions to improve operating margins could adversely affect our financial performance.

*Our implementation of new business information systems and processes could adversely affect our results of operations and cash flow.*

We are designing and implementing a new enterprise-wide information system and related processes to consolidate our legacy operating systems into an integrated system. The objective is to standardize and streamline business processes. The first stage of implementation is scheduled to occur during 2012. We may be unable or choose not to complete the implementation in accordance with our timeline and we could incur additional costs. The implementation could result in operating inefficiencies and could impact our ability to perform business transactions. These risks could adversely impact our results of operations, financial condition, and cash flows.

*We depend on reliable sources of energy and raw materials, including petroleum-based materials, minerals and other supplies, at a reasonable cost, but the availability of these materials and supplies could be interrupted and/or their prices could escalate and adversely affect our sales and profitability.*

We purchase energy and many raw materials, including petroleum-based materials and other supplies, which we use to manufacture our products. Changes in their availability or price could affect our ability to manufacture enough products to meet customers demands or to manufacture products profitably. We try to maintain multiple sources of raw materials and supplies where practical, but this may not prevent unanticipated changes in their availability or cost and, for certain raw materials, there may not be alternative sources. We may not be able to pass cost increases through to our customers. Significant disruptions in availability or cost increases could adversely affect our manufacturing volume or costs, which could negatively affect product sales or profitability of our operations.

*The global scope of our operations exposes us to risks related to currency conversion rates, new and different regulatory schemes and changing economic, regulatory, social and political conditions around the world.*

More than 50% of our net sales during 2011 were outside of the U.S. In order to support global customers, access regional markets and compete effectively, our operations are located around the world. We may encounter difficulties expanding into additional growth markets around the world. Our operations have additional complexity due to economic, regulatory, social and political conditions in multiple locations and we are subject to risks relating to currency conversion rates. Other risks inherent in international operations include the following:

New and different legal and regulatory requirements and enforcement mechanisms in local jurisdictions;

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U.S. and other export licenses may be difficult to obtain and we may be subject to export duties or import quotas or other trade restrictions or barriers;

Increased costs of, and decreased availability of, transportation or shipping;

Credit risk and financial conditions of local customers and distributors;

Risk of nationalization of private enterprises by foreign governments or restrictions on investments;

Potentially adverse tax consequences, including imposition or increase of withholding and other taxes on remittances and other payments by subsidiaries; and

Local political, economic and social conditions, including the possibility of hyperinflationary conditions, deflation, and political instability in certain countries.

In particular, we have subsidiaries in Venezuela, a country that has established very rigid controls over the ability of foreign companies to repatriate cash, and in Egypt, a country with recent political instability. Such conditions could potentially impact our ability to recover both the cost of our investments and earnings from those investments. While we attempt to anticipate these changes and manage our business appropriately in each location where we do business, these changes are often beyond our control and difficult to forecast.

The consequences of these risks may have significant adverse effects on our results of operations or financial position, and if we fail to comply with applicable laws and regulations, we could be exposed to civil and criminal penalties, reputational harm, and restrictions on our operations.

***We have a growing presence in the Asia-Pacific region where it can be difficult for a multi-national company, such as Ferro, to compete lawfully with local competitors, which may cause us to lose business opportunities.***

Many of our most promising growth opportunities are in the Asia-Pacific region, especially the People's Republic of China. Although we have been able to compete successfully in those markets to date, local laws and customs can make it difficult for a multi-national company such as Ferro to compete on a level playing field with local competitors without engaging in conduct that would be illegal under U.S. or other countries' anti-bribery laws. Our strict policy of observing the highest standards of legal and ethical conduct may cause us to lose some otherwise attractive business opportunities to local competition in the region.

***Regulatory authorities in the U.S., European Union and elsewhere are taking a much more aggressive approach to regulating hazardous materials and other substances, and those regulations could affect sales of our products.***

Legislation and regulations concerning hazardous materials and other substances can restrict the sale of products and/or increase the cost of producing them. Some of our products are subject to restrictions under laws or regulations such as California Proposition 65 or the European Union's (EU) chemical substances directive. The EU REACH registration system requires us to perform studies of some of our products or components of our products and to register the information in a central database, increasing the cost of these products. As a result of such regulations, customers may avoid purchasing some products in favor of less hazardous or less costly alternatives. It may be impractical for us to continue manufacturing heavily regulated products, and we may incur costs to shut down or transition such operations to alternative products. These circumstances could adversely affect our business, including our sales and operating profits.

***Our businesses depend on a continuous stream of new products, and failure to introduce new products could affect our sales, profitability and liquidity.***

One way that we remain competitive in our markets is by developing and introducing new and improved products on an ongoing basis. Customers continually evaluate our products in comparison to those offered by our competitors. A failure to introduce new products at the right time that are price competitive and that provide the



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features and performance required by customers could adversely affect our sales, or could require us to compensate by lowering prices. In addition, when we invest in new product development, we face risks related to production delays, cost over-runs and unanticipated technical difficulties, which could impact sales, profitability and/or liquidity.

*Sales of our products to new customers or into new industries may expose us to different and complex regulatory regimes.*

As part of our growth strategy, we seek to expand our customer base and the industries into which we sell. Selling products to certain customers or into certain industries, such as governments or the defense industry, requires compliance with regulatory regimes that do not apply to sales involving other customers or industries and that can be complex and difficult to navigate. Our failure to comply with these regulations could result in liabilities or damage to our reputation with customers, which could negatively impact our business, financial condition, or results of operations.

*We have limited or no redundancy for certain of our manufacturing facilities, and damage to those facilities could interrupt our operations, increase our costs of doing business and impair our ability to deliver our products on a timely basis.*

If certain of our existing production facilities become incapable of manufacturing products for any reason, we may be unable to meet production requirements, we may lose revenue and we may not be able to maintain our relationships with our customers. Without operation of certain existing production facilities, we may be limited in our ability to deliver products until we restore the manufacturing capability at the particular facility, find an alternative manufacturing facility or arrange an alternative source of supply. Although we carry business interruption insurance to cover lost revenue and profits in an amount we consider adequate, this insurance does not cover all possible situations. In addition, our business interruption insurance would not compensate us for the loss of opportunity and potential adverse impact on relations with our existing customers resulting from our inability to produce products for them.

*We may not be able to complete future acquisitions or successfully integrate future acquisitions into our business, which could adversely affect our business or results of operations.*

As part of our growth strategy, we intend to pursue acquisitions. Our success in accomplishing this growth may be limited by the availability and suitability of acquisition candidates and by our financial resources, including available cash and borrowing capacity. Acquisitions involve numerous risks, including difficulty determining appropriate valuation, integrating operations, technologies, services and products of the acquired product lines or businesses, personnel turnover and the diversion of management's attention from other business matters. In addition, we may be unable to achieve anticipated benefits from these acquisitions in the time frame that we anticipate, or at all, which could affect adversely our business or results of operations.

*We have significant deferred tax assets, and if we are unable to utilize these assets, our results of operations may be adversely affected.*

To fully realize the carrying value of our net deferred tax assets, we will have to generate adequate taxable profits in various tax jurisdictions. At December 31, 2011, we had \$133.6 million of net deferred tax assets, after valuation allowances. If we do not generate adequate profits within the time periods required by applicable tax statutes, the carrying value of the tax assets will not be realized. If it becomes unlikely that the carrying value of our net deferred tax assets will be realized, the valuation allowances may need to be increased in our consolidated financial statements, adversely affecting results of operations. Further information on our deferred tax assets is presented in Note 8 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K.

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***The markets for our products are highly competitive and subject to intense price competition, which could adversely affect our sales and earnings performance.***

Our customers typically have multiple suppliers from which to choose. If we are unwilling or unable to provide products at competitive prices, and if other factors, such as product performance and value-added services do not provide an offsetting competitive advantage, customers may reduce, discontinue, or decide not to purchase our products. If we could not secure alternate customers for lost business, our sales and earnings performance could be adversely affected.

***If we are unable to protect our intellectual property rights or to successfully resolve claims of infringement brought against us, our product sales and financial performance could be affected adversely.***

Our performance may depend in part on our ability to establish, protect and enforce intellectual property rights with respect to our products, technologies and proprietary rights and to defend against any claims of infringement, which involves complex legal, scientific and factual questions and uncertainties. We may have to rely on litigation to enforce our intellectual property rights. In addition, we may face claims of infringement that could interfere with our ability to use technology or other intellectual property rights that are material to our business operations. If litigation that we initiate is unsuccessful, we may not be able to protect the value of some of our intellectual property. In the event a claim of infringement against us is successful, we may be required to pay royalties or license fees to continue to use technology or other intellectual property rights that we have been using or we may be unable to obtain necessary licenses from third parties at a reasonable cost or within a reasonable time.

***Our operations are subject to operating hazards and, as a result, to stringent environmental, health and safety regulations, and compliance with those regulations could require us to make significant investments.***

Our production facilities are subject to hazards associated with the manufacture, handling, storage, and transportation of chemical materials and products. These hazards can cause personal injury and loss of life, severe damage to, or destruction of, property and equipment and environmental contamination and other environmental damage and could have an adverse effect on our business, financial condition or results of operations.

We strive to conduct our manufacturing operations in a manner that is safe and in compliance with all applicable environmental, health and safety regulations. Compliance with changing regulations may require us to make significant capital investments, incur training costs, make changes in manufacturing processes or product formulations, or incur costs that could adversely affect our profitability, and violations of these laws could lead to substantial fines and penalties. These costs may not affect competitors in the same way due to differences in product formulations, manufacturing locations or other factors, and we could be at a competitive disadvantage, which might adversely affect financial performance.

***We are subject to stringent labor and employment laws in certain jurisdictions in which we operate, we are party to various collective bargaining arrangements, and our relationship with our employees could deteriorate, which could adversely impact our operations.***

A majority of our full-time employees are employed outside the U.S. In certain jurisdictions where we operate, labor and employment laws are relatively stringent and, in many cases, grant significant job protection to certain employees, including rights on termination of employment. In addition, in certain countries where we operate, our employees are members of unions or are represented by works councils. We are often required to consult and seek the consent or advice of these unions and/or works councils. These regulations and laws, coupled with the requirement to consult with the relevant unions or works councils, could have a significant impact on our flexibility in managing costs and responding to market changes.

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Furthermore, approximately 18% of our U.S. employees as of December 31, 2011, are subject to collective bargaining arrangements or similar arrangements, and approximately 9% are subject to labor agreements that expire in 2012. While we expect to complete renewal of these agreements without significant disruption to our business, there can be no assurance that we will be able to negotiate labor agreements on satisfactory terms or that actions by our employees will not be disruptive to our business. If these workers were to engage in a strike, work stoppage or other slowdown or if other employees were to become unionized, we could experience a significant disruption of our operations and/or higher ongoing labor costs, which could adversely affect our business, financial condition and results of operations.

***Employee benefit costs, especially postretirement costs, constitute a significant element of our annual expenses, and funding these costs could adversely affect our financial condition.***

Employee benefit costs are a significant element of our cost structure. Certain expenses, particularly postretirement costs under defined benefit pension plans and healthcare costs for employees and retirees, may increase significantly at a rate that is difficult to forecast and may adversely affect our financial results, financial condition or cash flows. Declines in global capital markets may cause reductions in the value of our pension plan assets. Such circumstances could have an adverse effect on future pension expense and funding requirements. Further information regarding our retirement benefits is presented in Note 10 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K.

***We rely on information systems to conduct our business and interruption, or damage to, or failure or compromise of, these systems may adversely affect our business and results of operations.***

We rely on information systems to obtain, process, analyze and manage data to facilitate the purchase and distribution of our products; to receive, process, and ship orders on a timely basis; to account for other product and service transactions with customers; to manage the accurate billing and collections for thousands of customers; to process payments to suppliers; and to manage data and records relating to our employees, contractors, and other individuals. Our business and results of operations may be adversely affected if these systems are interrupted, damaged, or compromised or if they fail for any extended period of time, due to events including but not limited to programming errors, computer viruses and security breaches. Information privacy and security risks have generally increased in recent years because of the proliferation of new technologies and the increased sophistication and activities of perpetrators of cyber attacks. Although we believe that we have appropriate information privacy and security controls in place, prevention of information and privacy security breaches cannot be assured, particularly as cyber threats continue to evolve. We may be required to expend additional resources to continue to enhance our information privacy and security measures and/or to investigate and remediate any information security vulnerabilities. In addition, third-party service providers are responsible for managing a significant portion of our information systems, and we are subject to risk as a result of possible information privacy and security breaches of those third parties. The consequences of these risks could adversely impact our results of operations, financial condition, and cash flows.

***There are risks associated with the manufacture and sale of our products into the pharmaceutical industry.***

The manufacture and sale of products into the pharmaceutical industry involves the risk of injury to consumers, as well as commercial risks. Injury to consumers could result from, among other things, tampering by unauthorized third parties or the introduction into the product of foreign objects, substances, chemicals and other agents during the manufacturing, packaging, storage, handling or transportation phases. Shipment of adulterated products may be a violation of law and may lead to an increased risk of exposure to product liability or other claims, product recalls and increased scrutiny by federal and state regulatory agencies. Such claims or liabilities may not be covered by our insurance or by any rights of indemnity or contribution that we may have against third parties. In addition, the negative publicity surrounding any assertion that our products caused illness or injury



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could have a material adverse effect on our reputation with existing and potential customers, which could negatively impact our business, operating results or financial condition.

*We are exposed to lawsuits in the normal course of business, which could harm our business.*

We are from time to time exposed to certain legal proceedings, which may include claims involving product liability, infringement of intellectual property rights of third parties and other claims. Due to the uncertainties of litigation, we can give no assurance that we will prevail on claims made against us in the lawsuits that we currently face or that additional claims will not be made against us in the future. We do not believe that lawsuits we currently face are likely to have a material adverse effect on our business, operating results or financial condition. Future claims or lawsuits, if they were to result in a ruling adverse to us, could give rise to substantial liability, which could have a material adverse effect on our business, operating results or financial condition.

*We are exposed to intangible asset risk, and a write down of our intangible assets could have an adverse impact to our operating results and financial position.*

We have recorded intangible assets, including goodwill, in connection with business acquisitions. We are required to perform goodwill impairment tests on at least an annual basis and whenever events or circumstances indicate that the carrying value may not be recoverable from estimated future cash flows. As a result of our annual and other periodic evaluations, we may determine that the intangible asset values need to be written down to their fair values, which could result in material charges that could be adverse to our operating results and financial position.

*Interest rates on some of our borrowings are variable, and our borrowing costs could be adversely affected by interest rate increases.*

Portions of our debt obligations have variable interest rates. Generally, when interest rates rise, our cost of borrowings increases. We estimate, based on the debt obligations outstanding at December 31, 2011, that a one percent increase in interest rates would cause interest expense to increase by \$0.2 million annually. Continued interest rate increases could raise the cost of borrowings and adversely affect our financial performance. See further information regarding our interest rates on our debt obligations in Quantitative and Qualitative Disclosures about Market Risk and in Note 6 to the consolidated financial statements under Item 8 of this Form 10-K.

*Many of our assets are encumbered by liens that have been granted to lenders, and those liens affect our flexibility to dispose of property and businesses.*

Certain of our debt obligations are secured by substantially all of our assets. These liens could reduce our ability and/or extend the time to dispose of property and businesses, as these liens must be cleared or waived by the lenders prior to any disposition. These security interests are described in more detail in Note 6 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K.

*We have undertaken several restructuring programs to improve our operating performance and achieve cost savings, but we may not be able to implement and/or administer these programs in the manner contemplated and these restructuring programs may not produce the desired results.*

We have undertaken several restructuring programs in recent years, and we may initiate new restructuring programs in the future. These programs involve, among other things, plant closures and staff reductions. Although we expect these programs to help us achieve operational improvements, including incremental cost savings, we may not be able to implement and/or administer these programs, including the implementation of plant closures and staff reductions, in the manner contemplated, which could cause the restructuring programs to fail to achieve the desired results. Additionally, the implementation of restructuring programs may result in impairment charges, some of which could be material. Even if we do implement and administer these

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restructuring programs in the manner contemplated, they may not produce the desired results. Accordingly, the restructuring programs that we have implemented and those that we may initiate in the future may not improve our operating performance and may not help us achieve cost savings. Failure to successfully implement and/or administer these restructuring programs could have an adverse effect on our financial performance.

*We may not pay dividends on our common stock at any time in the foreseeable future.*

Holders of our common stock are entitled to receive such dividends as our Board of Directors from time to time may declare out of funds legally available for such purposes. Our Board of Directors has no obligation to declare dividends under Ohio law or our amended Articles of Incorporation. We may not pay dividends on our common stock at any time in the foreseeable future. Any determination by our Board of Directors to pay dividends in the future will be based on various factors, including our financial condition, results of operations and current, anticipated cash needs and any limits our then-existing credit facility and other debt instruments place on our ability to pay dividends.

*We are exposed to risks associated with acts of God, terrorists and others, as well as fires, explosions, wars, riots, accidents, embargoes, natural disasters, strikes and other work stoppages, quarantines and other governmental actions, and other events or circumstances that are beyond our control.*

Ferro is exposed to risks from various events that are beyond our control, which may have significant effects on our results of operations. While we attempt to mitigate these risks through appropriate loss prevention measures, insurance, contingency planning and other means, we may not be able to anticipate all risks or to reasonably or cost-effectively manage those risks that we do anticipate. As a result, our operations could be adversely affected by circumstances or events in ways that are significant and/or long lasting.

The risks and uncertainties identified above are not the only risks that we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial also may adversely affect us. If any known or unknown risks and uncertainties develop into actual events, these developments could have material adverse effects on our financial position, results of operations, and cash flows.

### **Item 1B Unresolved Staff Comments**

None.

### **Item 2 Properties**

We lease our corporate headquarters offices, which are located at 6060 Parkland Blvd., Mayfield Heights, Ohio. The Company owns other corporate facilities, including a centralized research and development facility, which are located in Independence, Ohio. We own principal manufacturing plants that range in size from 29,000 sq. ft. to over 800,000 sq. ft. Plants we own with more than 250,000 sq. ft. are located in: Spain; Germany; Cleveland, Ohio; Penn Yan, New York; and Mexico. The locations of these principal manufacturing plants by reportable segment are as follows:

Electronic Materials U.S.: Penn Yan, New York; and South Plainfield, New Jersey. Outside the U.S.: China.

Performance Coatings U.S.: Cleveland, Ohio. Outside the U.S.: Argentina, Brazil, China, Egypt, France, Indonesia, Italy, Mexico, Spain, Thailand and Venezuela.

Color and Glass Performance Materials U.S.: Washington, Pennsylvania, and Orville, Ohio. Outside the U.S.: Brazil, China, France, Germany, Mexico, Spain, the United Kingdom and Venezuela.

Polymer Additives U.S.: Bridgeport, New Jersey; Cleveland, Ohio; Walton Hills, Ohio; and Fort Worth, Texas. Outside the U.S.: Belgium and the United Kingdom.

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Specialty Plastics U.S.: Evansville, Indiana; Plymouth, Indiana; Edison, New Jersey; and Stryker, Ohio. Outside the U.S.: Spain.

Pharmaceuticals U.S.: Waukegan, Illinois.

Ferro's revolving credit facility has a security interest in the real estate of the parent company and its domestic material subsidiaries.

In addition, we lease manufacturing facilities for the Electronic Materials segment in Germany, Japan, and Vista, California; for the Color and Glass Performance Materials segment in Japan and Italy; and for the Specialty Plastics segment in Carpentersville, Illinois. In some instances, the manufacturing facilities are used for two or more segments. Leased facilities range in size from 18,000 sq. ft. to over 100,000 sq. ft. at the plant located in Carpentersville, Illinois.

**Item 3 *Legal Proceedings***

On January 4, 2011, the Company received an administrative subpoena from the U.S. Department of the Treasury's Office of Foreign Assets Control ( OFAC ). OFAC requested that the Company provide documents and information related to the possibility of direct or indirect transactions with or to a prohibited country. The Company subsequently responded to the administrative subpoena. On January 17, 2012, OFAC provided the Company with a no action letter advising that it had completed its review of the matter and had closed its file without taking further action.

On September 30, 2011, the United States Environmental Protection Agency ( USEPA ) issued a complaint and notice of opportunity for a hearing and proposed a civil administrative penalty assessment to the Company for alleged violations regarding the laws and regulations of the Clean Air Act at our Bridgeport, New Jersey, facility. We have contested the allegations of the complaint and the amount of the proposed penalty assessment. We are currently involved in settlement negotiations and do not expect the ultimate outcome of this penalty assessment and any associated expenses to have a material effect on the financial position, results of operations, or cash flows of the Company.

There are various lawsuits and claims pending against the Company and its consolidated subsidiaries. We do not currently expect the ultimate liabilities, if any, and expenses related to such lawsuits and claims to materially affect the consolidated financial position, results of operations, or cash flows of the Company.

**Item 4 *Mine Safety Disclosures***

Not applicable.

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**Executive Officers of the Registrant**

The executive officers of the Company as of February 28, 2012, are listed below, along with their ages and positions held during the past five years. The year indicates when the individual was named to the indicated position. No family relationship exists between any of Ferro's executive officers.

James F. Kirsch 54

Chairman, President and Chief Executive Officer, 2006

Mark H. Duesenberg 50

Vice President, General Counsel and Secretary, 2008

Executive Director, Legal and Government Affairs, Lenovo Group Ltd., a global manufacturer of personal computers and electronic devices, 2008

Legal Director Europe, Middle East and Africa, Lenovo Group Ltd., 2005

John A. Fleischer 49

Vice President and Chief Information Officer, 2012

Director and Chief Information Officer, North American Tire, a division of Goodyear Tire & Rubber Company, a manufacturer and distributor of tires and operator of automotive services centers, 2010

Vice President, Systems Integration, T-Systems North America, a unit of Deutsche Telekom, an integrated telecommunications company, 2006

Ann E. Killian 57

Vice President, Human Resources, 2005

Thomas R. Miklich 64

Vice President and Chief Financial Officer, 2010

Independent Consultant, 2007

Michael J. Murry 60

Vice President, Electronic, Color and Glass Materials, 2009

Vice President, Inorganic Specialties, 2006

Peter T. Thomas 56

Vice President, Polymer and Ceramic Engineered Materials, 2009

Vice President, Organic Specialties, 2006

**Table of Contents****PART II****Item 5 *Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities***

Our common stock is listed on the New York Stock Exchange under the ticker symbol FOE. On January 31, 2012, we had 1,385 shareholders of record for our common stock, and the closing price of the common stock was \$6.76 per share.

The chart below compares Ferro's cumulative total shareholder return for the five years ended December 31, 2011, to that of the Standard & Poor's 500 Index and the Standard & Poor's MidCap Specialty Chemicals Index. In all cases, the information is presented on a dividend-reinvested basis and assumes investment of \$100.00 on December 31, 2006. At December 31, 2011, the closing price of our common stock was \$4.89 per share.

**COMPARISON OF FIVE-YEAR****CUMULATIVE TOTAL RETURNS**

The quarterly high and low intra-day sales prices and dividends declared per share for our common stock during 2011 and 2010 were as follows:

	2011			2010		
	High	Low	Dividends	High	Low	Dividends
First Quarter	\$ 17.02	\$ 13.40	\$	\$ 9.16	\$ 6.93	\$
Second Quarter	17.84	11.62		11.62	6.91	
Third Quarter	14.28	6.00		13.77	6.68	
Fourth Quarter	7.36	4.27		15.53	12.44	

If we pay cash dividends in excess of a base dividend amount in any single quarterly period, the conversion rate on our 6.50% Convertible Senior Notes will be increased by formula. The base dividend amount is \$0.145 per share, subject to adjustment in certain events.

The restrictive covenants contained in our credit facility limit the amount of dividends we can pay on our common stock. For further discussion, see Management's Discussion and Analysis of Financial Condition and Results of Operations under Item 7 of this Annual Report on Form 10-K.

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The following table summarizes purchases of our common stock by the Company and affiliated purchasers during the three months ended December 31, 2011:

	Total Number of Shares Purchased(1)	Average Price Paid per Share (In thousands, except for per share amounts)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
October 1, 2011 to October 31, 2011	3	\$ 5.95		
November 1, 2011 to November 30, 2011				
December 1, 2011 to December 31, 2011				
Total	3			

(1) Consists of shares of common stock purchased through a rabbi trust as investments of participants in our Deferred Compensation Plan for Non-employee Directors.

**Item 6 Selected Financial Data**

The following table presents selected financial data for the last five years ended December 31st:

	2011	2010	2009	2008	2007
	(Dollars in thousands, except per share data)				
Net sales	\$ 2,155,792	\$ 2,101,865	\$ 1,657,569	\$ 2,245,152	\$ 2,147,904
Income (loss) from continuing operations	32,367	7,273	(40,040)	(52,882)	(97,502)
Basic earnings (loss) per share from continuing operations attributable to Ferro Corporation common shareholders	0.37	0.06	(0.85)	(1.28)	(2.34)
Diluted earnings (loss) per share from continuing operations attributable to Ferro Corporation common shareholders	0.36	0.06	(0.85)	(1.28)	(2.34)
Cash dividends declared per common share			0.01	0.58	0.58
Total assets	1,440,651	1,434,355	1,526,355	1,544,117	1,638,260
Long-term debt, including current portion, and redeemable preferred stock	300,769	303,269	409,231	577,290	538,758

In 2008, we sold our Fine Chemicals business, which is presented as discontinued operations in 2007 through 2009.

**Item 7 Management's Discussion and Analysis of Financial Condition and Results of Operations****Overview**

Market conditions were difficult in several of our key markets during 2011. In particular, the market for conductive pastes used in solar applications was negatively affected by reduced end-market demand and excess inventories of completed solar power modules. As a result, our customers reduced their manufacturing volumes and lowered their demand for our conductive pastes. Lower sales of our conductive pastes caused a significant reduction in segment income for our Electronic Materials business that was not fully offset through higher sales of other products. Demand in other markets was mixed during 2011. Demand related to automotive markets was generally improved relative to 2010, although the aftermath of the earthquake and tsunami in Japan during March



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did negatively impact certain customers. Demand for building materials continued to be relatively weak in certain regions as construction activity remained depressed in North America and Europe.

Net sales increased by 3% compared with 2010. Sales increased in Performance Coatings, Polymer Additives, Color and Glass Performance Materials, Specialty Plastics, and Pharmaceuticals. Sales declined in Electronic Materials due to the reduction in demand for conductive pastes, despite an increase in sales of our non-solar Electronic Materials products and increased precious metal sales that were driven by higher average silver prices during 2011. Our consolidated net sales increases were driven by changes in product pricing and mix, with additional contributions from changes in foreign currency exchange rates. These increases were partially offset by the effects of lower sales volume.

Gross profit declined in 2011 compared with 2010, primarily driven by the decline in sales of high-margin conductive pastes. Raw material costs increased during the year but these changes had little net impact on gross profit as the added costs were offset by product price increases, in aggregate, across the Company. Raw material cost increases were the most difficult to offset with product price increases in the Performance Coatings and Polymer Additives businesses.

Selling, general and administrative ( SG&A ) expenses increased slightly during 2011 compared with the prior year. SG&A expenses during 2011 included the costs of a new initiative to standardize and streamline our business processes and improve management information systems tools. Changes in foreign currency exchange rates also contributed to increased SG&A expenses during the year. Reduced incentive compensation expense, lower special charges and a decline in pension expense reduced SG&A expenses compared with the prior year.

Restructuring and impairment charges were significantly lower in 2011 compared with 2010. The major operational activities related to our manufacturing rationalization activities, started in 2006, were completed during 2010. The restructuring charges recorded in 2011 were primarily related to residual costs at manufacturing sites where production activities have been concluded. During 2011, we recorded an impairment of goodwill in the Performance Coatings segment and fixed asset impairment charges related to property, plant and equipment and property held for sale.

Interest expense declined during 2011 primarily as a result of lower average borrowing levels, reduced interest rates on borrowings and less amortization of debt issuances costs. During 2010, we recorded losses on extinguishment of debt related to debt refinancing. Losses on extinguishment of debt were minimal during 2011 as we continued our open market activity to redeem outstanding convertible debt.

Net income increased in 2011 compared with the prior year as a result of reduced restructuring and impairment charges, reduced losses on extinguishment of debt and lower interest expense which more than offset lower gross profit and increased income tax expense.

## ***Outlook***

Our ability to forecast future financial performance is limited because of uncertainty surrounding customer demand and economic conditions in a number of key markets and regions around the world. Customer demand for our conductive solar pastes is difficult to forecast because of uncertainty in end-market demand and the continuing effects of excess inventory of solar power modules. Order levels for our solar products remain low and our visibility to future customer orders is very limited. We expect demand for these products to improve during 2012, but the timing and strength of the recovery in customer demand is not known at this time. In addition, future economic conditions in Europe are expected to be generally weaker in 2012 due to sovereign debt issues and other macroeconomic drivers. This weakness may affect demand for our products in the region although the magnitude of these effects is difficult to estimate at this time.

Factors that could adversely affect our future financial performance are described under the heading **Risk Factors** in Item 1A.



**Table of Contents****Results of Operations**

Comparison of the years ended December 31, 2011 and 2010

	2011	2010	\$ Change	% Change
	(Dollars in thousands, except per share data)			
<b>Net sales</b>	\$ 2,155,792	\$ 2,101,865	\$ 53,927	2.6%
Cost of sales	1,742,605	1,643,200	99,405	6.0%
Gross profit	413,187	458,665	(45,478)	(9.9)%
Gross margin percentage	19.2%	21.8%		
Selling, general and administrative expenses	294,802	293,736	1,066	0.4%
Restructuring and impairment charges	17,030	63,732	(46,702)	
Other expense (income):				
Interest expense	28,409	44,568	(16,159)	
Interest earned	(285)	(651)	366	
Losses on extinguishment of debt	45	23,001	(22,956)	
Foreign currency losses, net	4,758	4,724	34	
Miscellaneous expense, net	2,492	5,814	(3,322)	
<b>Income before income taxes</b>	<b>65,936</b>	<b>23,741</b>	<b>42,195</b>	
Income tax expense	33,569	16,468	17,101	
<b>Net income</b>	<b>\$ 32,367</b>	<b>\$ 7,273</b>	<b>\$ 25,094</b>	
<b>Diluted earnings per share attributable to Ferro Corporation common shareholders</b>	<b>\$ 0.36</b>	<b>\$ 0.06</b>	<b>\$ 0.30</b>	

Net sales increased by 2.6% in the year ended December 31, 2011, compared with the prior year. Changes in product prices and mix, together with changes in foreign currency exchange rates, were the primary drivers of the increased sales. Increased sales of precious metals, driven by higher prices for silver, also contributed to the overall sales growth. Lower sales volume had a negative effect on sales, particularly in the Electronic Materials segment. The lower sales volume also was the result of decisions we made in 2010 to exit certain markets served by the Color and Glass Performance Materials and Electronic Materials segments. For the year, changes in product prices and mix accounted for approximately 10 percentage points of sales growth, and changes in foreign currency exchange rates contributed an additional 2 percentage points to higher sales. Lower sales volume reduced sales by 9 percentage points. Higher precious metal prices contributed approximately 1 percentage point to the overall sales increase during the year, including effects from changes in volume and prices of the precious metals.

Gross profit declined during 2011 primarily as a result of reduced sales volume of conductive pastes used in solar cell applications. In addition, increased raw material costs and product mix changes combined to reduce gross profit or to limit the growth in gross profit in certain business segments where sales increased. In aggregate, raw material costs increased by approximately \$113 million during 2011 and these increased costs were offset by increased product prices. Gross profit percentage declined to 19.2% of net sales from 21.8% of net sales in the prior-year period. Charges that were primarily related to residual costs at closed manufacturing sites involved in earlier restructuring initiatives reduced gross profit by \$4.8 million during 2011. Gross profit was reduced by charges of \$9.0 million during 2010, primarily due to costs related to manufacturing rationalization activities.

Selling, general and administrative ( SG&A ) expenses were slightly higher in 2011 compared with 2010. SG&A expense declined to 13.7% of net sales during the year, down from 14.0% of net sales in 2010. SG&A expenses increased as a result of an initiative to streamline and standardize business processes and improve

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management information systems tools, increased SG&A expense in our non-U.S. operations resulting from changes in foreign currency exchange rates and added expense due to annual salary increases. Partially offsetting these SG&A expense increases were reduced incentive compensation expense, lower special charges and lower pension expense. SG&A expenses during 2011 included charges of \$4.1 million that were primarily related to expenses at sites that were closed during earlier restructuring initiatives. In 2010, SG&A expense included \$18.1 million in charges, primarily related to manufacturing rationalization projects, employee severance and corporate development activities.

Restructuring and impairment charges were \$17.0 million, down from \$63.7 million in 2010. The lower charges reflected the winding down of our multi-year manufacturing rationalization activities. Included in restructuring and impairment charges during 2011 were impairment charges of \$12.1 million resulting from an impairment of goodwill in the Performance Coatings segment and fixed asset impairment charges related to property, plant and equipment and property held for sale. The impaired property related to sites that were closed due to prior-period restructuring actions, and the impairments reflect ongoing deterioration in commercial real estate markets.

Interest expense declined by \$16.2 million during 2011 compared with 2010. Lower average borrowing levels, reduced interest rates on borrowings and reduced amortization of debt issuance costs contributed to the decline in interest expense. Interest expense in 2010 included nonrecurring charges of \$2.3 million for a noncash write-off of debt issuance costs related to prepayments of our term loans prior to their scheduled repayment.

We recorded losses from extinguishment of debt of \$23.0 million during 2010 that were related to debt refinancing. The charges included a write-off of unamortized fees and the difference between the carrying value and the fair market value of the portion of our 6.5% Convertible Notes purchased pursuant to a tender offer and a write-off of unamortized fees associated with our previous revolving credit facility. The losses on extinguishment of debt were less than \$0.1 million during 2011.

We are exposed to the impact of exchange rate fluctuations on foreign currency positions arising from our international trade. We manage these currency risks principally by entering into forward contracts. The carrying value of the open contracts at each quarter-end are adjusted to fair value and the resulting gains or losses are charged to income or expense during the period, partially offsetting the effects of changes in foreign currency exchange rates on the underlying positions.

Net miscellaneous expense for 2011 was \$2.5 million compared with \$5.8 million in 2010. As part of our miscellaneous expense during 2010, we recorded a number of nonrecurring charges. The charges included a net pre-tax gain of \$8.3 million as a result of a business combination related to decoration materials for ceramic and glass products. In addition, during 2010 we recorded a charge of \$6.8 million to settle our interest rate swaps in connection with the extinguishment of term loans and a charge of \$9.2 million for an increased reserve for environmental remediation costs related to a non-operating facility in Brazil.

In 2011, income tax expense was \$33.6 million, or 50.9% of income before income taxes. In the prior year, we recorded income tax expense of \$16.5 million, or 69.0% of income before income taxes. The 2011 effective tax rate was greater than the statutory income tax rate of 35% primarily as a result of an \$11.3 million charge to increase the valuation allowances to more accurately measure the portion of the deferred tax assets that more likely than not will be realized. The 2010 tax expense was also affected by a \$9.6 million increase to valuation allowances related to deferred tax assets, a tax expense of \$1.5 million related to the 2010 passage of the U.S. Patient Protection and Affordable Care Act, partially offset by a decrease in tax expense of \$2.1 million related to a tax benefit resulting from a domestic production activity deduction in the United States.

We recorded net income of \$32.4 million in 2011 compared with net income of \$7.3 million in 2010. The improvement was driven by lower restructuring and impairment charges, a reduction in losses on extinguishment of debt and lower interest expense, partially offset by reduced gross profit and increased income tax expense.

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	2011	2010	\$ Change	% Change
	(Dollars in thousands)			
<b>Segment Sales</b>				
Electronic Materials	\$ 622,977	\$ 675,401	\$ (52,424)	(7.8)%
Performance Coatings	602,566	555,023	47,543	8.6%
Color and Glass Performance Materials	396,317	382,155	14,162	3.7%
Polymer Additives	336,965	302,352	34,613	11.4%
Specialty Plastics	172,028	163,058	8,970	5.5%
Pharmaceuticals	24,939	23,876	1,063	4.5%
Total segment sales	\$ 2,155,792	\$ 2,101,865	\$ 53,927	2.6%
<b>Segment Operating Income</b>				
Electronic Materials	\$ 74,869	\$ 132,585	\$ (57,716)	(43.5)%
Performance Coatings	37,988	39,416	(1,428)	(3.6)%
Color and Glass Performance Materials	32,327	31,514	813	2.6%
Polymer Additives	15,221	18,387	(3,166)	(17.2)%
Specialty Plastics	9,521	11,348	(1,827)	(16.1)%
Pharmaceuticals	3,050	814	2,236	274.7%
Total segment operating income	\$ 172,976	\$ 234,064	\$ (61,088)	(26.1)%

*Electronic Materials Segment Results.* Sales declined in Electronic Materials primarily as a result of reduced demand for conductive pastes used in solar cell applications. The decline in demand for these products was a consequence of lower end-market demand and excess inventory of completed solar power modules. Due to the excess inventory and reduced demand, solar cell production was significantly reduced by our customers. We decided to exit the market for commodity dielectric materials during 2010. As a result, the absence of sales of these products in 2011 also contributed to the lower sales volume in Electronic Materials during the year. Lower sales volume reduced sales by approximately \$124 million compared with the prior year. Changes in product pricing and mix offset approximately \$60 million of the sales decline during the year, and changes in foreign currency exchange rates increased sales by an additional \$12 million. Sales of precious metals increased by \$12 million within the Electronic Materials business, including the effects of increased metal prices and reduced sales volume. The costs of precious metals are passed through to our customers as an element of our product prices. Sales of products produced in the U.S. and Europe declined, while sales of products produced in Asia increased during 2011. Operating income declined primarily due to a \$53 million reduction in gross profit driven by the lower sales volume of conductive pastes, which was only partially offset by increased sales volume of other Electronic Materials products.

*Performance Coatings Segment Results.* Sales increased in Performance Coatings primarily due to higher product prices and changes in foreign currency exchange rates, partially offset by reduced sales volume. The higher product prices were largely due to higher raw material costs compared with the prior year. Changes in product prices and mix accounted for approximately \$49 million of the sales growth during the year. Changes in foreign currency exchange rates added an additional \$15 million to the sales growth. Lower sales volume offset approximately \$16 million of the growth in sales. Sales increased in the Europe-Middle East-Africa region, with additional sales growth contributions from Latin America, the U.S., and Asia-Pacific. Operating profit declined as a result of an increase of \$4 million in SG&A expense, which was partially offset by a \$3 million increase in gross profit.

*Color and Glass Performance Materials Segment Results.* Sales increased in Color and Glass Performance Materials as a result of higher product prices, changes in product mix and changes in foreign currency exchange rates. Partially offsetting the increases was a decline in sales volume. Sales volume of certain metal oxide

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products was curtailed as a result of the closing of a manufacturing plant in Portugal, and sales volume was also lower due to reduced precious metal preparations sales as a result of a business divestiture during 2010. Changes in product prices and mix increased sales by approximately \$38 million, and changes in foreign currency exchange rates contributed an additional \$14 million to sales growth during the year. Lower sales volume reduced sales growth by approximately \$38 million. The sales growth was primarily driven by increased sales in Europe-Middle East-Africa. Operating profit increased as a result of a \$4 million increase in gross profit which was partially offset by \$3 million increase in SG&A expense. The increase in gross profit was driven by the benefits from manufacturing rationalization activities completed in prior periods. During the second half of 2011, both gross profit and SG&A expenses were negatively impacted by costs associated with consolidating production from a plant in Austria to one of our existing plants in Germany.

*Polymer Additives Segment Results.* Sales increased in Polymer Additives primarily as a result of higher product prices. The higher product prices largely reflected higher raw material costs compared with the prior year. Changes in product prices and mix increased sales by approximately \$37 million during 2011. Changes in foreign currency exchange rates increased sales by approximately \$4 million, while lower sales volume reduced sales by \$6 million. Sales increased in the U.S. and Europe-Middle East-Africa, the primary regions where we market our polymer additives. Operating income declined as a result of a \$3 million decline in gross profit caused by changes in product mix and increased manufacturing costs. SG&A expense was little changed from the prior year.

*Specialty Plastics Segment Results.* Sales increased in Specialty Plastics primarily as a result of changes in product prices and mix, which were partially offset by the effects of lower sales volume. Changes in product price and mix contributed approximately \$17 million to the overall sales growth, and changes in foreign currency exchange rates increased sales by an additional \$3 million. Lower sales volume reduced sales by approximately \$11 million. Sales growth was primarily driven by increased sales in the United States. Operating profit declined primarily as a result of reduced gross profit that resulted from reduced production volume.

*Pharmaceutical Segment Results.* Sales increased in Pharmaceuticals primarily as a result of changes in product mix compared with the prior year. Operating income increased primarily due to a \$2 million increase in gross profit that was driven by improved manufacturing performance.

	2011	2010	\$ Change	% Change
	(Dollars in thousands)			
<b>Geographic Revenues</b>				
United States	\$ 1,022,120	\$ 1,039,457	\$ (17,337)	(1.7)%
International	1,133,672	1,062,408	71,264	6.7%
Total geographic revenues	\$ 2,155,792	\$ 2,101,865	\$ 53,927	2.6%

International sales increased during 2011 while sales in the United States declined. The decline in sales in the United States was primarily driven by lower sales of Electronic Materials that were shipped from our U.S. manufacturing locations. This decline was partially offset by higher U.S. sales in each of our other business segments. During 2011, sales originating in the United States were 47% of total net sales, down from 49% of net sales during 2010. Sales increased in all international regions during 2011, led by increased sales in Europe-Middle East-Africa. Sales that are recorded in each region include products exported to customers that are located in other regions.

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Comparison of the years ended December 31, 2010 and 2009

	2010	2009	\$ Change	% Change
	(Dollars in thousands, except per share data)			
<b>Net sales</b>	\$ 2,101,865	\$ 1,657,569	\$ 444,296	26.8%
Cost of sales	1,643,200	1,343,297	299,903	22.3%
Gross profit	458,665	314,272	144,393	45.9%
Gross margin percentage	21.8%	19.0%		
Selling, general and administrative expenses	293,736	272,259	21,477	7.9%
Restructuring and impairment charges	63,732	19,337	44,395	
Other expense (income):				
Interest expense	44,568	63,918	(19,350)	
Interest earned	(651)	(896)	245	
Losses on extinguishment of debt	23,001		23,001	
Foreign currency losses, net	4,724	3,827	897	
Miscellaneous expense (income), net	5,814	(618)	6,432	
<b>Income (loss) before income taxes</b>	23,741	(43,555)	67,296	
Income tax expense (benefit)	16,468	(3,515)	19,983	
<b>Income (loss) from continuing operations</b>	7,273	(40,040)	47,313	
Loss on disposal of discontinued operations, net of income taxes		(325)	325	
<b>Net income (loss)</b>	\$ 7,273	\$ (40,365)	\$ 47,638	
<b>Diluted earnings (loss) per share attributable to Ferro Corporation common shareholders</b>	\$ 0.06	\$ (0.86)	\$ 0.92	

Net sales increased by 27% in the year ended December 31, 2010, compared with the prior year. The increased sales reflected recovering customer demand after the economic downturn in 2009. Increased sales volume in 2010 compared with 2009 accounted for approximately 20 percentage points of the sales increase. Changes in product mix and prices accounted for an additional 8 percentage points of the sales growth. Changes in foreign currency exchange rates reduced the growth in sales by approximately 1 percentage point. The changes in sales volume, product mix and prices included the effects of increased sales of precious metals. Higher precious metal sales contributed approximately 9 percentage points to the overall sales increase during the year. Sales increased in all segments during 2010. Sales in the U.S. and international sales both increased compared with 2009.

Gross profit increased during 2010 as a result of the growth in sales volume. Cost reduction initiatives that were completed during 2010, including staffing reductions, plant consolidations and restructuring actions, also contributed to the gross profit improvement. Gross margin percentage increased approximately 280 basis points in 2010 compared with 2009. In aggregate, increases in raw material costs of approximately \$47 million were offset by increased product prices. Special charges, primarily related to manufacturing rationalization activities, reduced gross profit by approximately \$9.0 million during 2010. Gross profit was reduced by charges of \$5.0 million in 2009, also primarily due to manufacturing rationalization activities.

Selling, general and administrative ( SG&A ) expenses increased by \$21.5 million in 2010 compared with 2009. SG&A expenses declined to 14.0% of net sales in 2010 compared with 16.4% of net sales in 2009. Higher incentive compensation accruals and higher special charges were the primary drivers of the increased SG&A expenses. The 2010 SG&A expenses included \$18.1 million in charges, primarily related to manufacturing rationalization projects, employee severance and corporate development activities. In 2009, SG&A expenses included \$12.2 million in charges, primarily driven by expense reduction activities.

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Restructuring and impairment charges were \$63.7 million in 2010, an increase of \$44.4 million compared with 2009. The largest contributors to the charges in 2010 were restructuring initiatives involving the closure of a manufacturing plant in France, two manufacturing sites in the Netherlands and certain manufacturing operations in Portugal. Approximately \$35.0 million of the restructuring and impairment charges were related to employee severance costs associated with manufacturing rationalization projects. Asset impairments of \$12.6 million and pension settlements and curtailments of \$7.4 million contributed to the total restructuring and impairment charges for 2010. Also included in the restructuring and impairment charges for 2010 were costs of \$3.1 million related to lease terminations at sites in Germany and Portugal. The remaining charges were primarily related to site cleanup and dismantling costs at various sites.

Interest expense declined by \$19.4 million during 2010 compared with 2009. The reduction was driven primarily by a decline in our average borrowing levels. Interest expense was also lower as a result of lower average interest rates and the effects of refinancing activities during the year, including the write-off of unamortized debt issuance costs related to our previous credit facility. The refinancing activities reduced interest expense beginning in August 2010. Our average borrowing levels declined as a result of reduced requirements to provide cash collateral for our precious metal consignment programs, debt reduction in late 2009 subsequent to our equity offering, and debt reduction as cash generated from operations during 2010 was used to repay borrowings. As of December 31, 2010, we had \$28.1 million of cash on deposit as collateral for precious metals, a decline from \$112.4 million on December 31, 2009. Our 2010 interest expense included a \$2.3 million noncash write-off of debt issuance costs related to repayments of our term loans prior to their scheduled repayment. Interest expense in 2009 included a \$3.2 million write-off of unamortized credit facility issuance costs that was triggered by debt repayments.

We recorded losses from extinguishment of debt of \$23.0 million during 2010 related to our debt refinancing activities. The charge included a write-off of unamortized debt issuance costs and the difference between the carrying value and the fair value of the portion of our 6.5% convertible notes purchased during 2010. The purchases were made pursuant to a tender offer and subsequently on the open market. The losses on extinguishment charge also included a write-off of unamortized debt issuance costs associated with our previous credit facility.

We manage currency risks in a wide variety of foreign currencies principally by entering into forward contracts to mitigate the impact of currency fluctuations on transactions arising from international trade. The carrying values of these contracts are adjusted to market value and the resulting gains or losses are charged to income or expense during the period. Foreign currency translation losses in 2010 included a write-down of approximately \$2.6 million related to receivables affected by a devaluation of the Venezuelan currency.

As part of our miscellaneous expense in 2010, we recorded a net pre-tax gain of \$8.3 million as a result of a business combination in which Ferro Corporation and Heraeus of Hanau, Germany, acquired from each other certain business lines related to decoration materials for ceramic and glass products. In addition, we recorded a charge of \$6.8 million to settle our interest rate swaps in connection with the extinguishment of term loans that were part of our previous credit facility and a charge of \$9.2 million for an increased reserve for environmental remediation costs related to a non-operating facility in Brazil.

In 2010, income tax expense was \$16.5 million, or 69.3% of income before taxes. In the prior-year period, we recorded an income tax benefit of \$3.5 million, or 8.1% of the loss before income taxes. The tax expense in 2010 was affected by a number of items including a \$9.6 million net increase to valuation allowances related to deferred tax assets; a \$1.5 million increase in tax expense related to the 2010 passage of the U.S. Patient Protection and Affordable Care Act; and a \$2.1 million decrease in tax expense due to a tax benefit resulting from a domestic production activity deduction in the United States. The tax benefit in 2009 was affected by a number of items, including: a reduction of \$4.2 million due to rate differences between non-U.S. and U.S. jurisdictions; a reduction of \$2.9 million resulting from goodwill impairment not recognized for tax purposes; a \$2.9 million reduction due to a decrease in reserves for uncertain tax positions; and a \$4.4 million increase resulting from U.S. credits for increasing research activities.

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We recorded income from continuing operations of \$7.3 million in 2010. The income was a \$47.3 million improvement from a loss on continuing operations recorded in 2009. The improvement was primarily the result of higher gross profit and reduced interest expense, partially offset by higher restructuring and impairment charges, increased SG&A expenses, losses on extinguishment of debt, and higher income tax expense.

	2010	2009	\$ Change	% Change
	(Dollars in thousands)			
<b>Segment Sales</b>				
Electronic Materials	\$ 675,401	\$ 426,896	\$ 248,505	58.2%
Performance Coatings	555,023	487,891	67,132	13.8%
Color and Glass Performance Materials	382,155	321,750	60,405	18.8%
Polymer Additives	302,352	249,510	52,842	21.2%
Specialty Plastics	163,058	149,524	13,534	9.1%
Pharmaceuticals	23,876	21,998	1,878	8.5%
Total segment sales	\$ 2,101,865	\$ 1,657,569	\$ 444,296	26.8%
<b>Segment Operating Income</b>				
Electronic Materials	\$ 132,585	\$ 45,344	\$ 87,241	192.4%
Performance Coatings	39,416	29,551	9,865	33.4%
Color and Glass Performance Materials	31,514	13,123	18,391	140.1%
Polymer Additives	18,387	6,708	11,679	174.1%
Specialty Plastics	11,348	10,164	1,184	11.6%
Pharmaceuticals	814	438	376	85.8%
Total segment operating income	\$ 234,064	\$ 105,328	\$ 128,736	122.2%

*Electronic Materials Segment Results.* Sales increased in Electronic Materials in all product areas, led by higher sales of conductive pastes and powders. Increased sales volume accounted for approximately \$159 million of the sales increase during 2010. Changes in product pricing and mix contributed an additional \$85 million to sales growth, and changes in foreign currency exchange rates accounted for \$5 million of the higher sales. An increase in precious metal sales of \$141 million, reflecting changes in both sales volume and pricing, contributed to the overall change in sales for the year. The costs of precious metals are passed through to our customers as an element of our product prices. Sales from our U.S. manufacturing sites grew the most in 2010. Sales of products manufactured in the U.S. are recorded as U.S. sales, although many of the products are exported to international customers. Sales also grew in Asia-Pacific, as we increased production at a conductive paste manufacturing facility in China, and in the Europe-Middle East-Africa region. Operating income increased due to a \$90 million increase in gross profit, driven primarily by increased sales volume. Partially offsetting the improved gross profit was a \$3 million increase in SG&A expenses.

*Performance Coatings Segment Results.* Sales increased in Performance Coatings primarily as a result of increased sales volume. Higher sales volume accounted for approximately \$80 million in higher sales. This increase was partially offset by a \$14 million reduction in sales due to changes in foreign currency exchange rates. Changes in product mix and pricing increased sales by \$1 million. Sales were higher in all regions, with the largest increase in Europe-Middle East-Africa. Operating income increased due to a \$20 million increase in gross profit, primarily driven by improved sales volume and changes in product pricing and mix. Partially offsetting the improved gross profit was a \$10 million increase in SG&A expenses including higher incentive compensation accruals, salaries and benefits, increased commissions and higher information technology expenses.

*Color and Glass Performance Materials Segment Results.* Sales increased in Color and Glass Performance Materials primarily due to higher sales volume. Increased sales volume contributed approximately \$56 million to

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the sales growth during 2010. Changes in product pricing and mix contributed an additional \$10 million to the sales growth while changes in foreign currency exchange rates reduced sales by \$6 million. Sales growth was recorded in Europe-Middle East-Africa, the United States and Asia-Pacific. Operating income increased due to a \$24 million increase in gross profit that was primarily driven by increased sales volume. The increase in gross profit was partially offset by a \$6 million increase in SG&A expenses.

*Polymer Additives Segment Results.* Sales increased in Polymer Additives as a result of higher sales volume and changes in product pricing and mix. Increased sales volume accounted for approximately \$36 million of the sales growth for the year. Changes in product pricing and mix contributed an additional \$21 million to the growth in sales. Changes in foreign currency exchange rates reduced sales by \$4 million. Sales growth was primarily in the United States and Europe-Middle East-Africa. Operating profit increased due to a \$12 million increase in gross profit that was primarily due to increased sales volume and improved manufacturing effectiveness.

*Specialty Plastics Segment Results.* Sales increased in Specialty Plastics due to a combination of changes in product pricing and mix, and higher sales volumes. Changes in product pricing and mix contributed approximately \$10 million to the higher sales in 2010. Increased sales volumes accounted for an additional \$6 million of the sales growth, while changes in foreign currency exchange rates reduced sales growth by \$3 million. Sales growth was primarily in the United States. Operating income increased due to a reduction of \$2 million in SG&A expenses, partially offset by a \$1 million decline in gross profit.

*Pharmaceutical Segment Results.* Sales increased in Pharmaceuticals as a result of changes in product mix. Operating income increased as a result of a \$2 million increase in gross profit which was partially offset by a \$1.6 million increase in SG&A expenses.

	2010	2009	\$ Change	% Change
	(Dollars in thousands)			
<b>Geographic Revenues</b>				
United States	\$ 1,039,457	\$ 758,048	\$ 281,409	37.1%
International	1,062,408	899,521	162,887	18.1%
Total geographic revenues	\$ 2,101,865	\$ 1,657,569	\$ 444,296	26.8%

During 2010, sales increased in the United States and internationally. Sales of products manufactured in the United States were 49% of total net sales for the year, compared with 46% of total sales in 2009. Sales grew more rapidly in the United States than internationally in 2010 primarily as a result of strong sales of electronic materials products. Many of our electronic materials products are manufactured in the United States and exported to other regions. Sales recorded in each region include products that are exported to customers located in other regions. The increase in international sales was driven by higher sales in Europe-Middle East-Africa and Asia-Pacific.

**Summary of Cash Flows for the years ended December 31, 2011, 2010, and 2009**

	2011	2010	2009
	(Dollars in thousands)		
Net cash provided by operating activities	\$ 53,233	\$ 198,865	\$ 2,151
Net cash used for investing activities	(65,127)	(33,322)	(42,654)
Net cash provided by (used for) financing activities	5,904	(157,264)	46,625
Effect of exchange rate changes on cash	(54)	2,249	2,194
(Decrease) increase in cash and cash equivalents	\$ (6,044)	\$ 10,528	\$ 8,316



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*Operating activities.* Cash flows from operating activities decreased \$145.6 million from 2010 to 2011. Cash flows declined \$68.0 million from decreases in accrued expenses, primarily from the payment of 2010 year-end incentive compensation. The return of precious metal deposits provided \$28.1 million in 2011 and \$84.3 million in 2010 due to additional credit lines not requiring collateral. Adjustments to reconcile net income to cash provided by operating activities include noncash losses on extinguishment of debt, depreciation and amortization, and deferred income taxes, as well as payments toward retirement benefits greater than the expenses recognized. The net positive effects of adjustments for these items declined by \$27.8 million from 2010 to 2011. Partially offsetting these decreases was an improvement of \$25.1 million in net income as a result of reduced restructuring and impairment charges, reduced losses on extinguishment of debt and lower interest expense.

Cash flows from operating activities increased \$196.7 million from 2009 to 2010. Cash flows improved \$196.8 million from decreases in deposit requirements related to our precious metal consignment program, \$54.1 million from increases in accrued expenses and other current liabilities, \$47.6 million as a result of a lower net loss in 2010, and \$41.8 million from increases in accounts payable. These benefits were partially offset by increases in cash used for inventories of \$98.9 million, accounts receivable of \$37.0 million and other receivables and current assets of \$32.5 million.

*Investing activities.* Capital expenditures increased \$28.0 million from 2010 to 2011 and decreased \$1.5 million from 2009 to 2010. In 2009 and 2010, we continued capital spending on manufacturing rationalization programs, but we made a concerted effort to defer or scale back new projects in order to conserve cash during a period of reduced customer demand associated with the global economic downturn. In 2011, our capital spending returned to more normal levels and also included certain deferred projects. In 2011, we received proceeds of \$6.4 million from the sale of assets, primarily property, plant and equipment in Australia and our former corporate headquarters in Cleveland, Ohio. In 2010, we received proceeds of \$11.4 million from the sale of assets and businesses, primarily property, plant and equipment in the Netherlands and our business operations in precious metal preparations in Asia.

*Financing activities.* In 2011, we entered into several international programs to sell with recourse trade accounts receivable to financial institutions. Advances under these programs are accounted for as borrowings secured by the receivables. We also redeemed in cash all outstanding Series A Preferred Stock for \$9.4 million. In 2010, we entered into a \$350.0 million multi-currency senior revolving credit facility, maturing in 2015. We also issued \$250.0 million of 7.875% Senior Notes in a high yield bond offering, repurchased \$136.7 million of our 6.50% Convertible Senior Notes through a tender offer and subsequent market purchases, and repaid all outstanding term loans totaling \$231.4 million and our revolving credit line of a net \$1.7 million associated with the 2009 Amended and Restated Credit Facility. In 2009, we issued 41.1 million shares of common stock and received net proceeds of \$215.7 million. In connection with this equity offering, we converted \$100.0 million of revolving loans into new term loans and then used \$158.1 million of the equity offering proceeds to pay down new and existing term loans.

We had net proceeds from all credit facilities of \$15.6 million in 2011 and net repayments to all credit facilities of \$144.3 million in 2010, for a net increase in 2011 of \$159.9 million in our rate of borrowing. In 2009, we had net repayments of \$155.8 million, for a net increase in 2010 of \$11.5 million in our rate of borrowing. In 2010, we paid \$5.7 million to issue the 7.875% Senior Notes and \$4.1 million to enter into our 2010 Credit Facility. In 2009, we paid \$16.9 million to amend and enter into credit facilities.

We have paid no dividends on our common stock since the first quarter of 2009, when Ferro's Board of Directors declared a quarterly dividend of \$0.01 per common share. Dividends paid, including dividends on our preferred stock, totaled \$0.2 million in 2011, \$0.7 million in 2010, and \$1.1 million in 2009.

**Capital Resources and Liquidity**

Major debt instruments that were outstanding during 2011 are described below.

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**Table of Contents***7.875% Senior Notes*

In 2010, we issued \$250 million of 7.875% Senior Notes due 2018 (the *Senior Notes* ). We used portions of the proceeds from the offering to repay all of the remaining term loans and revolving borrowings outstanding under a credit facility originally entered into in 2006 and as amended and restated through November 2009 (the *2009 Amended and Restated Credit Facility* ). We also used portions of the proceeds from the offering to repurchase the 6.50% Convertible Senior Notes (the *Convertible Notes* ) that were tendered pursuant to a related tender offer. The Senior Notes were issued at par and bear interest at a rate of 7.875% per year, payable semi-annually in arrears on February 15 and August 15 of each year, beginning February 15, 2011. The Senior Notes mature on August 15, 2018, and are unsecured. At December 31, 2011, we were in compliance with the covenants under the Senior Notes indenture.

*6.50% Convertible Senior Notes*

In 2008, Ferro issued \$172.5 million of 6.50% Convertible Senior Notes due 2013 (the *Convertible Notes* ). The Convertible Notes bear interest at a rate of 6.5% per year, payable semi-annually in arrears on February 15 and August 15 of each year. The Convertible Notes mature on August 15, 2013. In 2010, we purchased \$136.7 million of the Convertible Notes through a tender offer or on the open market. In 2011, we purchased an additional \$0.7 million of the Convertible Notes on the open market. In connection with these transactions, we recognized losses on extinguishment of debt of \$13.1 million in 2010 and less than \$0.1 million in 2011, consisting of unamortized debt issuance costs and the difference between the carrying value and the fair value of these notes. The principal amount outstanding was \$35.1 million at December 31, 2011. We separately account for the liability and equity components of the Convertible Notes in a manner that will reflect our nonconvertible debt borrowing rate when interest cost is recognized in subsequent periods. The effective interest rate on the liability component is 9.5%. At December 31, 2011, we were in compliance with the covenants under the Convertible Notes indenture.

*2010 Credit Facility*

In 2010, we entered into the Third Amended and Restated Credit Agreement with a group of lenders for a five-year, \$350 million multi-currency senior revolving credit facility (the *2010 Credit Facility* ). At December 31, 2011, we had borrowed \$7.7 million under this facility. At December 31, 2011, we had \$335.9 million available, after reductions for standby letters of credit secured by this facility. The interest rate under the 2010 Credit Facility is the sum of (A) either (1) LIBOR or (2) the higher of the Federal Funds Rate plus 0.5%, the Prime Rate, or LIBOR plus 1.0% and (B) a variable margin based on the Company's leverage. At December 31, 2011, the interest rate was 3.0%.

The 2010 Credit Facility matures on August 24, 2015, and is secured by substantially all of Ferro's assets, generally including 100% of the shares of the parent company's domestic subsidiaries and 65% of the shares of the foreign subsidiaries directly owned by the parent company, but excluding trade receivables legally sold pursuant to our accounts receivable sales programs.

We are subject to a number of covenants under our 2010 Credit Facility. The covenants include requirements for a fixed charge coverage ratio greater than 1.35 to 1.00 and a leverage ratio less than 3.50 to 1.00 on the last day of any fiscal quarter and calculated using the last four fiscal quarters. In the fixed charge ratio, the numerator consists of earnings before interest, tax, depreciation and amortization, and special charges, less capital expenditures, and the denominator is the sum of interest expense paid in cash, scheduled principal payments, and restricted payments consisting of dividends and any stock buy backs. In the leverage ratio, the numerator is total debt, which consists of borrowings and certain letters of credit outstanding on the 2010 Credit Facility and our international facilities, the principal amount outstanding on our senior notes and convertible notes, capital lease obligations, and amounts outstanding on our U.S. and international receivables sales programs, and the denominator is the sum of earnings before interest, tax, depreciation and amortization, and

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special charges. Our ability to meet these covenants is primarily driven by our net income before interest, income taxes, depreciation and amortization; our total debt; and our interest payments. Our total debt is primarily driven by cash flow items, including net income before amortization, depreciation, and other noncash charges; our capital expenditures; any requirements for deposits from participants in our precious metals consignment program; our customers' ability to make payments for purchases and the timing of such payments; and our ability to manage inventory and other working capital items. Our interest payments are driven by our debt level, external fees, and interest rates, primarily the Prime Rate and LIBOR. At December 31, 2011, we were in compliance with the covenants of the 2010 Credit Facility.

Our ability to pay common stock dividends is limited by certain covenants in our 2010 Credit Facility and the bond indenture governing the Senior Notes. The covenant in our 2010 Credit Facility is the more limiting of the two covenants and limits our ability to make restricted payments, which include, but are not limited to, common stock dividends and the repurchase of equity interests. We are not permitted to make restricted payments in excess of \$30 million in any calendar year. However, if we make less than \$30 million of restricted payments in any calendar year, the unused amount can be carried over for restricted payments in future years, provided that the maximum amount of restricted payments in any calendar year cannot exceed \$60 million.

*Domestic Receivable Sales Program*

We have an asset securitization program for Ferro's U.S. trade accounts receivable. This program accelerates cash collections at favorable financing costs and helps us manage the Company's liquidity requirements. We sell undivided variable percentage interests in our domestic receivables to various purchasers, and we may obtain up to \$50.0 million in the form of cash or letters of credit. Advances received under this program are accounted for as borrowings secured by the receivables and included in net cash provided by financing activities. The purchasers have no recourse to Ferro's other assets for failure of payment of the receivables as a result of the lack of creditworthiness, or financial inability to pay, of the related obligor. In May 2011, we made certain modifications to and extended the maturity of this credit facility through May 2012. While there were no advances by purchasers for interests in those receivables at December 31, 2011, the average advances during 2011 were \$48.0 million. The need for advances under the asset securitization program varies throughout the year as liquidity needs change. After reductions for non-qualifying receivables, we had \$50.0 million of additional borrowings available under the program at December 31, 2011.

*International Receivable Sales Programs*

In 2011, we entered into several international programs to sell with recourse trade accounts receivable to financial institutions. Advances received under these programs are accounted for as borrowings secured by the receivables and included in net cash provided by financing activities. At December 31, 2011, the commitments supporting these programs totaled \$18.1 million, the advances received of \$8.2 million were secured by \$11.7 million of accounts receivable, and no additional borrowings were available under the programs. The interest rates under these programs are based on EURIBOR rates plus 1.75%. At December 31, 2011, the weighted-average interest rate was 3.0%.

*Off Balance Sheet Arrangements*

*International Receivable Sales Programs.* Prior to 2011, we maintained several international programs to sell without recourse trade accounts receivable to financial institutions. Advances received under these programs were accounted for as proceeds from the sales of receivables and included in net cash provided by operating activities. In 2011, these programs expired or were terminated.

*Consignment and Customer Arrangements for Precious Metals.* We use precious metals, primarily silver, in the production of some of our products. We obtain most precious metals from financial institutions under consignment agreements (generally referred to as our precious metals consignment program). The financial

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institutions retain ownership of the precious metals and charge us fees based on the amounts we consign and the period of consignment. These fees were \$9.5 million for 2011. At December 31, 2011, we had on hand precious metals owned by participants in our precious metals consignment program of \$195.0 million, measured at fair value based on market prices for identical assets. We also process precious metals owned by our customers.

The consignment agreements under our precious metals program involve short-term commitments that typically mature within 30 to 90 days of each transaction and are typically renewed on an ongoing basis. As a result, the Company relies on the continued willingness of financial institutions to participate in these arrangements to maintain this source of liquidity. Beginning in 2009, several participants in our precious metals consignment program renewed their requirement for us to deliver cash collateral when the market value of the precious metals under consignment exceeded the lines provided by these institutions. While we were not required to deliver cash collateral at December 31, 2011, we may be required to furnish cash collateral in the future based on the quantity and market value of the precious metals under consignment.

*Bank Guarantees and Standby Letters of Credit.* At December 31, 2011, the Company and its subsidiaries had bank guarantees and standby letters of credit issued by financial institutions that totaled \$12.4 million. These agreements primarily relate to Ferro's insurance programs, foreign energy purchase contracts and foreign tax payments.

### *Other Financing Arrangements*

We maintain other lines of credit to provide global flexibility for Ferro's short-term liquidity requirements. These facilities are uncommitted lines for our international operations and totaled \$16.4 million at December 31, 2011. We had \$11.7 million of additional borrowings available under these lines at December 31, 2011.

### *Liquidity Requirements*

Our liquidity requirements primarily include debt service, purchase commitments, labor costs, working capital requirements, restructuring expenditures, capital investments, precious metals cash collateral requirements, and postretirement obligations. We expect to meet these requirements in the long term through cash provided by operating activities and availability under existing credit facilities or other financing arrangements. Cash flows from operating activities are primarily driven by earnings before noncash charges and changes in working capital needs. In 2011, our investing activities, mostly capital expenditures for property, plant and equipment, were primarily funded by cash flows from operating activities. We had additional borrowing capacity of \$397.5 million at December 31, 2011, and \$402.1 million at December 31, 2010, available under various credit facilities, primarily our revolving credit facility. We have taken a variety of actions to enhance liquidity, including restructuring activities and suspension of dividend payments on our common stock.

Our level of debt, debt service requirements, and ability to access credit markets could have important consequences to our business operations and uses of cash flows. We have recently accessed the credit market for the following transactions. In 2010, we extended our domestic asset securitization facility, issued 7.875% Senior Notes, which mature in 2018, and entered into the 2010 Credit Facility, which matures in 2015. In 2011, we entered into several international accounts receivable sales programs and again extended our domestic asset securitization facility.

We may from time to time seek to retire or repurchase our outstanding debt through open market purchases, privately negotiated transactions or otherwise. Such repurchases, if any, will depend on prevailing market conditions, our liquidity requirements, contractual restrictions, and other factors. The amounts involved may be material.

Difficulties experienced in global capital markets could affect the ability or willingness of counterparties to perform under our various lines of credit, receivable sales programs, forward contracts, and precious metal

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program. These counterparties are major, reputable, multinational institutions, all having investment-grade credit ratings, except for one, which is not rated. Accordingly, we do not anticipate counterparty default. However, an interruption in access to external financing could adversely affect our business prospects and financial condition.

We assess on an ongoing basis our portfolio of businesses, as well as our financial and capital structure, to ensure that we have sufficient capital and liquidity to meet our strategic objectives. As part of this process, from time to time we evaluate the possible divestiture of businesses that are not critical to our core strategic objectives and, where appropriate, pursue the sale of such businesses. We also evaluate and pursue acquisition opportunities that we believe will enhance our strategic position. Generally, we publicly announce divestiture and acquisition transactions only when we have entered into definitive agreements relating to those transactions.

The Company's aggregate amount of contractual obligations for the next five years and thereafter is set forth below:

	2012	2013	2014	2015	2016	Thereafter	Totals
	(Dollars in thousands)						
Short-term debt	\$ 8,554	\$	\$	\$	\$	\$	\$ 8,554
Long-term debt(1)	3,029	36,125	973	8,704	689	255,078	304,598
Interest(2)	21,970	21,970	19,688	19,688	19,688	39,374	142,378
Operating lease obligations	14,389	11,012	8,611	7,228	4,432	16,231	61,903
Purchase commitments(3)	15,861	2,488	2,357	1,929	646		23,281
Taxes(4)	2,479						2,479
Retirement and other postemployment benefits(5)	44,190	42,532					86,722
	\$ 110,472	\$ 114,127	\$ 31,629	\$ 37,549	\$ 25,455	\$ 310,683	\$ 629,915

- (1) Long-term debt excludes unamortized discounts on the Convertible Notes and imputed interest and executory costs on capitalized lease obligations.
- (2) Interest represents only contractual payments for fixed-rate debt.
- (3) Purchased commitments are non-cancelable contractual obligations for raw materials and energy.
- (4) We have not projected payments past 2012 due to uncertainties in estimating the amount and period of any payments. We have \$32.1 million in gross liabilities related to unrecognized tax benefits, including \$1.3 million of accrued interest and penalties, that are not included in the above table since we cannot reasonably predict the timing of cash settlements with various taxing authorities.
- (5) The funding amounts are based on the minimum contributions required under our various plans and applicable regulations in each respective country. We have not projected contributions past 2013 due to uncertainties regarding the assumptions involved in estimating future required contributions.

**Critical Accounting Policies**

When we prepare our consolidated financial statements we are required to make estimates and assumptions that affect the amounts we report in the consolidated financial statements and footnotes. We consider the policies discussed below to be more critical than other policies because their application requires our most subjective or complex judgments. These estimates and judgments arise because of the inherent uncertainty in predicting future events. Management has discussed the development, selection and disclosure of these policies with the Audit Committee of the Board of Directors.

**Revenue Recognition**

We recognize sales typically when we ship goods to our customers and when all of the following criteria are met:

Persuasive evidence of an arrangement exists;

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The selling price is fixed and determinable;

Collection is reasonably assured; and

Title and risk of loss has passed to our customers.

In order to ensure the revenue recognition in the proper period, we review material sales contracts for proper cut-off based upon the business practices and legal requirements of each country. For sales of products containing precious metals, we report revenues gross along with their corresponding cost of sales to arrive at gross profit. We record revenues this way because we act as the principal in the transactions into which we enter.

*Restructuring and Cost Reduction Programs*

Between 2006 and 2010, we developed and initiated several restructuring programs across a number of our business segments with the objectives of leveraging our global scale, realigning and lowering our cost structure, and optimizing capacity utilization. The programs are primarily associated with North America, Europe and Asia-Pacific. Management continues to evaluate our businesses, and therefore, there may be supplemental provisions for new plan initiatives, as well as changes in estimates to amounts previously recorded, as payments are made or actions are completed.

Restructuring charges include both termination benefits and asset writedowns. We estimate accruals for termination benefits based on various factors including length of service, contract provisions, local legal requirements, projected final service dates, and salary levels. We also analyze the carrying value of long-lived assets and record estimated accelerated depreciation through the anticipated end of the useful life of the assets affected by the restructuring or record an asset impairment. In all likelihood, this accelerated depreciation will result in reducing the net book value of those assets to zero at the date operations cease. While we believe that changes to our estimates are unlikely, the accuracy of our estimates depends on the successful completion of numerous actions. Delays in moving continuing operations to other facilities or increased cash outlays will increase our restructuring costs to such an extent that it could have a material impact on the Company's results of operations, financial position, or cash flows. Other events, such as a delay in completion of construction of new facilities, may also delay the resulting cost savings.

*Goodwill*

We review goodwill for impairment each year using a measurement date of October 31st or more frequently in the event of an impairment indicator. We estimate the fair values of the reporting units associated with these assets using the average of both the income approach and the market approach, which we believe provides a reasonable estimate of the reporting units' fair values, unless facts and circumstances exist that indicate more representative fair values. The income approach uses projected cash flows attributable to the reporting units over their useful lives and allocates certain corporate expenses to the reporting units. We use historical results, trends and our projections of market growth, internal sales efforts and anticipated cost structure assumptions to estimate future cash flows. Using a risk-adjusted, weighted-average cost of capital, we discount the cash flow projections to the measurement date. The market approach estimates a price reasonably expected to be paid by a market participant in the purchase of similar businesses. If the fair value of any of the reporting units were determined to be less than its carrying value, we would proceed to the second step and obtain comparable market values or independent appraisals of its assets to determine the amount of any impairment.

The significant assumptions and ranges of assumptions we used in our impairment analysis of goodwill were as follows:

<b>Significant Assumptions</b>	<b>2011</b>	<b>2010</b>
Weighted-average cost of capital	13.0% - 14.0%	12.0% - 13.0%
Residual growth rate	3%	3.0% - 5.0%

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Our estimates of fair value can be adversely affected by a variety of factors. Reductions in actual or projected growth or profitability at our reporting units due to unfavorable market conditions or significant increases in cost structure could lead to the impairment of any related goodwill. Additionally, an increase in inflation, interest rates or the risk-adjusted, weighted-average cost of capital could also lead to a reduction in the fair value of one or more of our reporting units and therefore lead to the impairment of goodwill.

For purposes of our goodwill impairment analysis in 2011, we reassessed our reporting units and determined that there are eight groups that qualify as reporting units under U.S. generally accepted accounting principles ( U.S. GAAP ), and therefore we allocated goodwill formerly carried at the Color and Glass Performance Materials reporting unit to the Glass Systems and Performance Pigments and Colors reporting units, using their relative fair values at the measurement date. Based on our 2011 impairment test, we recognized an impairment loss of \$3.9 million in our Tile Coating Systems reporting unit. For the remaining reporting units tested for impairment during 2011, the fair values exceeded the carrying values of the respective reporting units by amounts ranging from 15% to 51% at the 2011 measurement date. A future potential impairment is possible for any of these reporting units if actual results are materially less than forecasted results. Some of the factors that could negatively affect our cash flows and, as a result, not support the carrying values of our reporting units are: new environmental regulations or legal restrictions on the use of our products that would either reduce our product revenues or add substantial costs to the manufacturing process, thereby reducing operating margins; new technologies that could make our products less competitive or require substantial capital investment in new equipment or manufacturing processes; and substantial downturns in economic conditions.

### *Income Taxes*

The breadth of our operations and complexity of income tax regulations require us to assess uncertainties and make judgments in estimating the ultimate amount of income taxes we will pay. Our income tax expense, deferred tax assets and liabilities and reserves for unrecognized tax benefits reflect management's best assessment of estimated current and future taxes to be paid. The final income taxes we pay are based upon many factors, including existing income tax laws and regulations, negotiations with taxing authorities in various jurisdictions, outcomes of tax litigation, and resolution of disputes arising from federal, state, and international income tax audits. The resolution of these uncertainties may result in adjustments to our income tax assets and liabilities in the future.

Deferred income taxes result from differences between the financial and tax basis of our assets and liabilities. We adjust our deferred income tax assets and liabilities for changes in income tax rates and income tax laws when changes are enacted. We record valuation allowances to reduce deferred income tax assets when it is more likely than not that a tax benefit will not be realized. Significant judgment is required in evaluating the need for and the magnitude of appropriate valuation allowances against deferred income tax assets. The realization of these assets is dependent on generating future taxable income, our ability to carry back or carry forward net operating losses and credits to offset tax liabilities in a prior year, as well as successful implementation of various tax strategies to generate tax where net operating losses or credit carryforwards exist. In evaluating our ability to realize the deferred income tax assets, we rely principally on the reversal of existing temporary differences, the availability of tax planning strategies, and forecasted income.

We recognize a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits. Our estimate of the potential outcome of any uncertain tax positions is subject to management's assessment of relevant risks, facts, and circumstances existing at that time. We record a liability for the difference between the benefit recognized and measured based on a more-likely than-not threshold and the tax position taken or expected to be taken on the tax return. To the extent that our assessment of such tax positions changes, the change in estimate is recorded in the period in which the determination is made. We report tax-related interest and penalties as a component of income tax expense.

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### *Derivative Financial Instruments*

We use derivative financial instruments in the normal course of business to manage our exposure to fluctuations in interest rates, foreign currency exchange rates, commodity prices, and precious metal prices. The accounting for derivative financial instruments can be complex and can require significant judgment. Generally, the derivative financial instruments that we use are not complex, and observable market-based inputs are available to measure their fair value. We do not engage in speculative transactions for trading purposes. Financial instruments, including derivative financial instruments, expose us to counterparty credit risk for non-performance. We manage our exposure to counterparty credit risk through minimum credit standards and procedures to monitor concentrations of credit risk. We enter into these derivative financial instruments with major, reputable, multinational financial institutions. Accordingly, we do not anticipate counter-party default. We continuously evaluate the effectiveness of derivative financial instruments designated as hedges to ensure that they are highly effective. In the event the hedge becomes ineffective, we discontinue hedge treatment. Except as noted below, we do not expect any changes in our risk policies or in the nature of the transactions we enter into to mitigate those risks.

Our exposure to interest rate changes arises from our debt agreements with variable market interest rates. To reduce our exposure to interest rate changes on variable-rate debt, we had entered into interest rate swap agreements. These swaps effectively converted a portion of our variable-rate debt to a fixed rate. In 2010, in conjunction with repayment of our remaining outstanding term loans, we settled these swaps.

We manage foreign currency risks in a wide variety of foreign currencies principally by entering into forward contracts to mitigate the impact of currency fluctuations on transactions arising from international trade. Our objective in entering into these forward contracts is to preserve the economic value of non-functional currency cash flows. Our principal foreign currency exposures relate to the Euro, the British Pound Sterling, the Japanese Yen, and the Chinese Yuan. We mark these forward contracts to fair value based on market prices for comparable contracts and recognize the resulting gains or losses as other income or expense from foreign currency transactions.

Precious metals (primarily silver, gold, platinum and palladium) represent a significant portion of raw material costs in our Electronic Materials products. We also use precious metals in our Color and Glass Performance Materials products. When we enter into a fixed price sales contract at the customer's request to establish the price for the precious metals content of the order, we also enter into a forward purchase arrangement with a precious metals supplier to completely cover the value of the precious metals content. Our current precious metal contracts are designated as normal purchase contracts, which are not marked to market.

We also purchase portions of our energy requirements, including natural gas and electricity, under fixed price contracts to reduce the volatility of cost changes. Our current energy contracts are designated as normal purchase contracts, which are not marked to market.

### *Pension and Other Postretirement Benefits*

We sponsor defined benefit plans in the U.S. and many countries outside the U.S., and we also sponsor retiree medical benefits for a segment of our salaried and hourly work force within the U.S. The U.S. pension plans represent approximately 81% of pension plan assets, 78% of benefit obligations and 67% of net periodic pension cost.

The assumptions we use in actuarial calculations for these plans have a significant impact on benefit obligations and annual net periodic benefit costs. We meet with our actuaries annually to discuss key economic assumptions used to develop these benefit obligations and net periodic costs. In accordance with U.S. GAAP, actual results that differ from the assumptions are accumulated and amortized over future periods and, therefore, affect expense recognized and obligations recorded in future periods.



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We determine the discount rate for the U.S. pension and retiree medical plans based on a bond model. Using the pension plans' projected cash flows, the bond model considers all possible bond portfolios that produce matching cash flows and selects the portfolio with the highest possible yield. These portfolios are based on bonds with a quality rating of AA or better under either Moody's Investor Services, Inc. or Standard & Poor's Rating Group, but exclude certain bonds, such as callable bonds, bonds with small amounts outstanding, and bonds with unusually high or low yields. The discount rates for the non-U.S. plans are based on a yield curve method, using AA-rated bonds applicable in respective capital markets. The duration of each plan's liabilities is used to select the rate from the yield curve corresponding to the same duration.

For the market-related value of plan assets, we use fair value, rather than a calculated value that recognizes changes in fair value in a systematic and rational manner over several years. We calculate the expected return on assets at the beginning of the year for defined benefit plans as the weighted-average of the expected return for the target allocation of the principal asset classes held by each of the plans. In determining the expected returns, we consider both historical performance and an estimate of future long-term rates of return. The Company consults with and considers the opinion of its actuaries in developing appropriate return assumptions. Our target asset allocation percentages are 30% fixed income and 70% equity investments for U.S. plans and 72% fixed income, 25% equity, and 3% other investments for non-U.S. plans. In 2011, investment returns on average plan assets were approximately 1.3% within U.S. plans and 6.9% within non-U.S. plans. Future actual pension expense will depend on future investment allocation and performance, changes in future discount rates and various other factors related to the population of participants in the Company's pension plans.

All other assumptions are reviewed periodically by our actuaries and us and may be adjusted based on current trends and expectations as well as past experience in the plans.

The following table provides the sensitivity of net annual periodic benefit costs for our pension plans, including a U.S. nonqualified retirement plan, and the retiree medical plan to a 25-basis-point decrease in both the discount rate and asset return assumption:

	25-Basis-Point Decrease in Discount Rate	25-Basis-Point Decrease in Asset Return Assumption
	(Dollars in thousands)	
U.S. pension plans	\$ 1,155	\$ 665
U.S. retiree medical plan	4	
Non-U.S. pension plans	144	140
Total	\$ 1,303	\$ 805

The following table provides the rates used in the assumptions and the changes between 2011 and 2010:

	2011	2010	Change
Discount rate used to measure benefit cost:			
U.S. pension plans	5.85%	6.20%	(0.35)%
U.S. retiree medical plan	5.45%	5.85%	(0.40)%
Non-U.S. pension plans	5.51%	5.88%	(0.37)%
Discount rate used to measure benefit obligations:			
U.S. pension plans	5.10%	5.85%	(0.75)%
U.S. retiree medical plan	4.85%	5.45%	(0.60)%
Non-U.S. pension plans	5.01%	5.51%	(0.50)%
Expected return on plan assets:			
U.S. pension plans	8.50%	8.50%	%
Non-U.S. pension plans	5.60%	5.28%	0.32%

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Our overall net periodic benefit cost for all defined benefit plans decreased \$13.3 million to \$16.1 million in 2011 from \$29.4 million in 2010. In 2010, we recorded \$6.4 million of one-time net curtailment and settlement losses. In addition, interest cost for 2011 decreased by \$5.2 million, primarily due to lower benefit obligations resulting from the 2010 curtailments and settlements.

For 2012, we expect our overall net periodic benefit cost to increase approximately \$5 million to \$21 million. The increase is a result of the effects of lower discount rates, lower expected returns on plan assets, and worse than expected asset performance in 2011.

### *Inventories*

We value inventory at the lower of cost or market, with cost determined utilizing the first-in, first-out (FIFO) method. We periodically evaluate the net realizable value of inventories based primarily upon their age, but also upon assumptions of future usage in production, customer demand and market conditions. Inventories have been reduced to the lower of cost or realizable value by allowances for slow moving or obsolete goods. If actual circumstances are less favorable than those projected by management in its evaluation of the net realizable value of inventories, additional write-downs may be required. Slow moving, excess or obsolete materials are specifically identified and may be physically separated from other materials, and we rework or dispose of these materials as time and manpower permit.

### *Environmental Liabilities*

Our manufacturing facilities are subject to a broad array of environmental laws and regulations in the countries in which they operate. The costs to comply with complex environmental laws and regulations are significant and will continue for the foreseeable future. We expense these recurring costs as they are incurred. While these costs may increase in the future, they are not expected to have a material impact on our financial position, liquidity or results of operations.

We also accrue for environmental remediation costs when it is probable that a liability has been incurred and we can reasonably estimate the amount. We determine the timing and amount of any liability based upon assumptions regarding future events. Inherent uncertainties exist in such evaluations primarily due to unknown conditions, changing governmental regulations and legal standards regarding liability, and evolving technologies. We adjust these liabilities periodically as remediation efforts progress or as additional technical or legal information becomes available.

### *Impact of Newly Issued Accounting Pronouncements*

Refer to Note 2 to the consolidated financial statements under Item 8 of this Annual Report on Form 10-K for a discussion of accounting standards we recently adopted or will be required to adopt.

### **Item 7A *Quantitative and Qualitative Disclosures about Market Risk***

The primary objective of the following information is to provide forward-looking quantitative and qualitative information about our exposure to instruments that are sensitive to fluctuations in interest rates, foreign currency exchange rates, and costs of raw materials and energy.

Our exposure to interest rate risk arises from our debt portfolio. We manage this risk by controlling the mix of fixed versus variable-rate debt after considering the interest rate environment and expected future cash flows. Our objective is to limit variability in earnings, cash flows and overall borrowing costs caused by changes in interest rates, while preserving operating flexibility.

We operate internationally and enter into transactions denominated in foreign currencies. These transactions expose us to gains and losses arising from exchange rate movements between the dates foreign currencies are

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recorded and the dates they are settled. We manage this risk by entering into forward currency contracts that offset these gains and losses.

We are subject to cost changes with respect to our raw materials and energy purchases. We attempt to mitigate raw materials cost increases through product reformulations, price increases, and other productivity improvements. We enter into forward purchase arrangements with precious metals suppliers to completely cover the value of the precious metals content of fixed price sales contracts. These agreements are designated as normal purchase contracts, which are not marked to market, and had purchase commitments totaling \$5.8 million at December 31, 2011. In addition, we purchase portions of our natural gas and electricity requirements under fixed price contracts to reduce the volatility of these costs. These energy contracts are designated as normal purchase contracts, which are not marked to market, and had purchase commitments totaling \$15.6 million at December 31, 2011.

The notional amounts, carrying amounts of assets (liabilities), and fair values associated with our exposure to these market risks and sensitivity analyses about potential gains (losses) resulting from hypothetical changes in market rates are presented below:

	2011	2010
	(Dollars in thousands)	
Variable-rate debt and utilization of asset securitization program:		
Change in annual interest expense from 1% change in interest rates	\$ 163	\$ 41
Fixed-rate debt:		
Carrying amount	288,604	283,368
Fair value	292,523	302,942
Change in fair value from 1% increase in interest rate	(13,071)	(15,635)
Change in fair value from 1% decrease in interest rate	13,902	16,759
Foreign currency forward contracts:		
Notional amount	249,337	187,291
Carrying amount and fair value	6,225	(240)
Change in fair value from 10% appreciation of U.S. dollar	12,216	7,735
Change in fair value from 10% depreciation of U.S. dollar	(14,930)	(9,454)

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**Item 8 *Financial Statements and Supplementary Data***

**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and Shareholders of Ferro Corporation

Cleveland, Ohio

We have audited the accompanying consolidated balance sheets of Ferro Corporation and subsidiaries (the Company) as of December 31, 2011 and 2010, and the related consolidated statements of operations, equity, and cash flows for each of the three years in the period ended December 31, 2011. Our audits also included the financial statement schedule listed in the index at Item 15. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on the financial statements and financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Ferro Corporation and subsidiaries as of December 31, 2011 and 2010, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2011, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2011, based on the criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 28, 2012 expressed an unqualified opinion on the Company's internal control over financial reporting.

/s/ Deloitte & Touche LLP

Cleveland, Ohio

February 28, 2012

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**FERRO CORPORATION AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

	Years Ended December 31,		
	2011	2010	2009
(In thousands, except per share amounts)			
<b>Net sales</b>	\$ 2,155,792	\$ 2,101,865	\$ 1,657,569
Cost of sales	1,742,605	1,643,200	1,343,297
Gross profit	413,187	458,665	314,272
Selling, general and administrative expenses	294,802	293,736	272,259
Restructuring and impairment charges	17,030	63,732	19,337
Other expense (income):			
Interest expense	28,409	44,568	63,918
Interest earned	(285)	(651)	(896)
Losses on extinguishment of debt	45	23,001	
Foreign currency losses, net	4,758	4,724	3,827
Miscellaneous expense (income), net	2,492	5,814	(618)
<b>Income (loss) before income taxes</b>	<b>65,936</b>	<b>23,741</b>	<b>(43,555)</b>
Income tax expense (benefit)	33,569	16,468	(3,515)
<b>Income (loss) from continuing operations</b>	<b>32,367</b>	<b>7,273</b>	<b>(40,040)</b>
Loss on disposal of discontinued operations, net of income taxes			(325)
<b>Net income (loss)</b>	<b>32,367</b>	<b>7,273</b>	<b>(40,365)</b>
Less: Net income attributable to noncontrolling interests	730	1,577	2,551
<b>Net income (loss) attributable to Ferro Corporation</b>	<b>31,637</b>	<b>5,696</b>	<b>(42,916)</b>
Dividends on preferred stock	(165)	(660)	(705)
<b>Net income (loss) attributable to Ferro Corporation common shareholders</b>	<b>\$ 31,472</b>	<b>\$ 5,036</b>	<b>\$ (43,621)</b>
<b>Amounts attributable to Ferro Corporation:</b>			
Income (loss) from continuing operations, net of income tax	\$ 31,637	\$ 5,696	\$ (42,591)
Loss from discontinued operations, net of income tax			(325)
Net income (loss) attributable to Ferro Corporation	\$ 31,637	\$ 5,696	\$ (42,916)
Weighted-average common shares outstanding	86,119	85,823	50,935
Incremental common shares attributable to convertible preferred stock, performance shares, deferred stock units, and stock options	659	716	
Weighted-average diluted shares outstanding	86,778	86,539	50,935
<b>Per common share data</b>			
Basic earnings (loss) attributable to Ferro Corporation common shareholders:			
From continuing operations	\$ 0.37	\$ 0.06	\$ (0.85)
From discontinued operations			(0.01)
	\$ 0.37	\$ 0.06	\$ (0.86)
Diluted earnings (loss) attributable to Ferro Corporation common shareholders:			
From continuing operations	\$ 0.36	\$ 0.06	\$ (0.85)
From discontinued operations			(0.01)
	\$ 0.36	\$ 0.06	\$ (0.86)

See accompanying notes to consolidated financial statements.

**Table of Contents****FERRO CORPORATION AND SUBSIDIARIES****CONSOLIDATED BALANCE SHEETS**

	December 31,	
	2011	2010
	(Dollars in thousands)	
<b>ASSETS</b>		
<b>Current assets</b>		
Cash and cash equivalents	\$ 22,991	\$ 29,035
Accounts receivable, net	306,775	302,448
Inventories	228,813	202,067
Deposits for precious metals		28,086
Deferred income taxes	17,395	24,924
Other receivables	37,839	27,762
Other current assets	17,086	7,432
Total current assets	630,899	621,754
<b>Other assets</b>		
Property, plant and equipment, net	379,336	391,496
Goodwill	215,601	219,716
Amortizable intangible assets, net	11,056	11,869
Deferred income taxes	117,658	121,640
Other non-current assets	86,101	67,880
Total assets	\$ 1,440,651	\$ 1,434,355
<b>LIABILITIES and EQUITY</b>		
<b>Current liabilities</b>		
Loans payable and current portion of long-term debt	\$ 11,241	\$ 3,580
Accounts payable	214,460	207,770
Accrued payrolls	31,055	49,590
Accrued expenses and other current liabilities	67,878	84,735
Total current liabilities	324,634	345,675
<b>Other liabilities</b>		
Long-term debt, less current portion	298,082	290,971
Postretirement and pension liabilities	215,732	189,058
Other non-current liabilities	19,709	25,044
Total liabilities	858,157	850,748
Series A convertible preferred stock (approximates redemption value)		9,427
<b>Equity</b>		
Ferro Corporation shareholders' equity:		
Common stock, par value \$1 per share; 300.0 million shares authorized;		
93.4 million shares issued and outstanding in 2011 and 2010		
	93,436	93,436
Paid-in capital	320,882	323,015
Retained earnings	393,636	362,164
Accumulated other comprehensive loss	(82,075)	(50,949)
Common shares in treasury, at cost	(153,617)	(164,257)
Total Ferro Corporation shareholders' equity	572,262	563,409
Noncontrolling interests	10,232	10,771
Total equity	582,494	574,180
Total liabilities and equity	\$ 1,440,651	\$ 1,434,355

See accompanying notes to consolidated financial statements.

**Table of Contents****FERRO CORPORATION AND SUBSIDIARIES****CONSOLIDATED STATEMENTS OF EQUITY**

	Ferro Corporation Shareholders						Non-controlling Interests	Total Equity
	Common Shares		Common Stock	Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)(a)		
	In Treasury Shares	Amount						
<b>Balances at December 31, 2008</b>	8,432	\$ (197,524)	\$ 52,323	\$ 178,420	\$ 401,186	\$ (98,436)	\$ 9,755	\$ 345,724
Net (loss) income					(42,916)		2,551	(40,365)
Other comprehensive income (loss), net of tax:								
Foreign currency translation						14,250	(2)	14,248
Postretirement benefit liabilities						21,387		21,387
Raw material commodity swaps						579		579
Interest rate swaps						2,073		2,073
Total comprehensive loss								(2,078)
Issuance of common stock			41,113	174,542				215,655
Cash dividends(b):								
Common					(437)			(437)
Preferred					(705)			(705)
Stock-based compensation transactions	(1,057)	25,957		(21,586)				4,371
Distributions to noncontrolling interests							(2,035)	(2,035)
<b>Balances at December 31, 2009</b>	7,375	(171,567)	93,436	331,376	357,128	(60,147)	10,269	560,495
Net income					5,696		1,577	7,273
Other comprehensive income (loss), net of tax:								
Foreign currency translation						(2,141)	170	(1,971)
Postretirement benefit liabilities						5,325	(7)	5,318
Raw material commodity swaps						(107)		(107)
Interest rate swaps						6,121		6,121
Total comprehensive income								16,634
Cash dividends(b):								
Preferred					(660)			(660)
Redemption of Convertible Notes				(4,925)				(4,925)
Stock-based compensation transactions	(133)	7,310		(3,436)				3,874
Distributions to noncontrolling interests							(1,238)	(1,238)
<b>Balances at December 31, 2010</b>	7,242	(164,257)	93,436	323,015	362,164	(50,949)	10,771	574,180
Net income					31,637		730	32,367
Other comprehensive income (loss), net of tax:								
Foreign currency translation						(3,735)	262	(3,473)
Postretirement benefit liabilities						(27,391)	(62)	(27,453)
Total comprehensive income								1,441
Cash dividends(b):								
Preferred					(165)			(165)
Stock-based compensation transactions	(377)	10,640		(2,133)				8,507
Distributions to noncontrolling interests							(1,469)	(1,469)
<b>Balances at December 31, 2011</b>	6,865	\$ (153,617)	\$ 93,436	\$ 320,882	\$ 393,636	\$ (82,075)	\$ 10,232	\$ 582,494

- (a) Accumulated translation adjustments were \$20,394, \$24,129, and \$26,270, accumulated postretirement benefit liability adjustments were \$(102,417), \$(75,026), and \$(80,351), accumulated raw material commodity swap adjustments were \$-0-, \$-0-, and \$108, and accumulated interest rate swap adjustments were \$-0-, \$-0-, and \$(6,122), at December 31, 2011, 2010, and 2009, respectively, all net of tax.
- (b) Dividends per share of common stock were \$-0- in 2011, \$-0- in 2010, and \$0.01 in 2009. Dividends per share of convertible preferred stock were \$0.8125 in 2011, \$3.25 in 2010, and \$3.25 in 2009.

See accompanying notes to consolidated financial statements.

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**FERRO CORPORATION AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

	2011	Years Ended December 31, 2010	2009
	(Dollars in thousands)		
<b>Cash flows from operating activities</b>			
Net income (loss)	\$ 32,367	\$ 7,273	\$ (40,365)
Adjustments to reconcile net income (loss) to net cash provided by (used for) operating activities:			
Loss from discontinued operations, net of tax			325
(Gain) loss on sale of assets and businesses	(244)	(2,330)	28
Depreciation and amortization	63,493	76,936	88,138
Restructuring and impairment charges	7,472	3,174	6,486
Losses on extinguishment of debt	45	23,001	
Provision for allowance for doubtful accounts	2,349	2,935	2,676
Retirement benefits	(18,896)	(1,630)	8,890
Deferred income taxes	20,575	(5,258)	(12,747)
Changes in current assets and liabilities, net of effects of acquisitions:			
Accounts receivable	(13,444)	(24,697)	12,351
Inventories	(29,790)	(22,654)	76,254
Deposits for precious metals	28,086	84,348	(112,434)
Other receivables and other current assets	(19,673)	(890)	31,566
Accounts payable	4,715	12,618	(29,230)
Accrued expenses and other current liabilities	(31,205)	36,750	(17,367)
Other operating activities	7,383	9,289	(12,091)
Net cash provided by continuing operations	53,233	198,865	2,480
Net cash used for discontinued operations			(329)
<b>Net cash provided by operating activities</b>	<b>53,233</b>	<b>198,865</b>	<b>2,151</b>
<b>Cash flows from investing activities</b>			
Capital expenditures for property, plant and equipment and other long-lived assets	(72,713)	(44,737)	(43,260)
Expenditures for acquisitions, net of cash acquired		(6,938)	
Proceeds from sale of assets and businesses	6,441	18,214	483
Other investing activities	1,145	139	123
<b>Net cash used for investing activities</b>	<b>(65,127)</b>	<b>(33,322)</b>	<b>(42,654)</b>
<b>Cash flows from financing activities</b>			
Net borrowings (repayments) under loans payable	8,661	(21,495)	15,462
Proceeds from long-term debt	646,834	632,299	903,886
Net proceeds from sale of common stock			215,655
Principal payments on long-term debt	(639,128)	(392,061)	(1,075,102)
Extinguishment of debt	(725)	(362,997)	
Debt issue costs		(9,848)	(16,863)
Redemption of convertible preferred stock	(9,427)		
Cash dividends	(165)	(660)	(1,142)
Proceeds from exercise of stock options	1,053	137	
Other financing activities	(1,199)	(2,639)	4,729
<b>Net cash provided by (used for) financing activities</b>	<b>5,904</b>	<b>(157,264)</b>	<b>46,625</b>
Effect of exchange rate changes on cash and cash equivalents	(54)	2,249	2,194
<b>(Decrease) increase in cash and cash equivalents</b>	<b>(6,044)</b>	<b>10,528</b>	<b>8,316</b>
Cash and cash equivalents at beginning of period	29,035	18,507	10,191
<b>Cash and cash equivalents at end of period</b>	<b>\$ 22,991</b>	<b>\$ 29,035</b>	<b>\$ 18,507</b>
Cash paid during the period for:			
Interest	\$ 25,920	\$ 31,881	\$ 51,505
Income taxes	22,060	20,379	10,145



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See accompanying notes to consolidated financial statements.

**Table of Contents****FERRO CORPORATION AND SUBSIDIARIES****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS****Years ended December 31, 2011, 2010 and 2009****1. Our Business**

Ferro Corporation ( Ferro, we, us or the Company ) produces performance materials for a broad range of manufacturers in diversified industries throughout the world. Our products are classified as performance materials, rather than commodities, because they are formulated to perform specific and important functions both in the manufacturing processes and in the finished products of our customers. We use inorganic and organic chemical processes, polymer science and materials science to develop and produce these performance materials. Performance materials require a high degree of technical service on an individual customer basis. The value of our products stems from the results and performance they achieve in actual use. We manage our diverse businesses through eight business units that are differentiated from one another by product type. We have grouped these units by their product group below:

**Polymer and Ceramic Engineered Materials**

Polymer Additives

Specialty Plastics

Pharmaceuticals

Tile Coating Systems

Porcelain Enamel

**Electronic, Color and Glass Materials**

Electronic Materials

Glass Systems

Performance Pigments and Colors

We produce our products primarily in the United States ( U.S. ), Europe-Middle East-Africa, the Asia-Pacific region, and Latin America.

We sell our products directly to customers or through the use of agents or distributors throughout the world. Our products are sold principally in the U.S., Europe, the Asia-Pacific region, and Latin America. Our customers manufacture products to serve a variety of end markets, including building and renovation, solar power, electronics, automobiles, appliances, household furnishings, packaging, industrial products, and pharmaceuticals.

**2. Significant Accounting Policies*****Principles of Consolidation***

Our consolidated financial statements include the accounts of the parent company and the accounts of its subsidiaries. When we consolidate our financial statements, we eliminate intercompany transactions, accounts and profits. When we exert significant influence over an investee but do not control it, we account for the investment and the investment income using the equity method. These investments are reported in the other non-current assets section of our balance sheet. When we acquire a subsidiary, its financial results are included in our consolidated financial statements from the date of the acquisition. When we dispose of a subsidiary, its financial results are included in our consolidated financial statements until the date of the disposition.

***Use of Estimates and Assumptions in the Preparation of Financial Statements***

We prepare our consolidated financial statements in conformity with United States Generally Accepted Accounting Principles, which requires us to make estimates and to use judgments and assumptions that affect the timing and amount of assets, liabilities, equity, revenues and expenses recorded and disclosed. The more significant estimates and judgments relate to revenue recognition, restructuring and cost reduction programs, goodwill, income taxes, derivative financial instruments, pension and other postretirement benefits, inventories,



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**FERRO CORPORATION AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**Years ended December 31, 2011, 2010 and 2009 (Continued)**

and environmental liabilities. Actual outcomes could differ from our estimates, resulting in changes in revenues or costs that could have a material impact on the Company's results of operations, financial position, or cash flows.

***Foreign Currency Translation***

The financial results of our operations outside of the U.S. are recorded in local currencies, which generally are also the functional currencies for financial reporting purposes. The results of operations outside of the U.S. are translated from these functional currencies into U.S. dollars using the average monthly currency exchange rates. We use the average currency exchange rate for these results of operations as a reasonable approximation of the results had specific currency exchange rates been used for each individual transaction. Foreign currency transaction gains and losses are recorded as incurred as other expense (income) in the consolidated statements of operations. Assets and liabilities are translated into U.S. dollars using exchange rates at the balance sheet dates, and we record the resulting foreign currency translation adjustment as a separate component of accumulated other comprehensive loss in shareholders' equity.

***Revenue Recognition***

We typically recognize sales when we ship goods to our customers and when all of the following criteria are met:

Persuasive evidence of an arrangement exists;

The selling price is fixed and determinable;

Collection is reasonably assured; and

Title and risk of loss has passed to our customers.

In order to ensure the revenue recognition in the proper period, we review material sales contracts for proper cut-off based upon the business practices and legal requirements of each country. For sales of all products, including those containing precious metals, we report revenues gross along with their corresponding cost of sales to arrive at gross profit. We record revenues this way because we act as the principal in the transactions into which we enter.

The amount of shipping and handling fees invoiced to our customers at the time our product is shipped is included in net sales. Credit memos issued to customers for sales returns, discounts allowed and sales adjustments are recorded when they are incurred as a reduction of sales.

Additionally, we provide certain of our customers with incentive rebate programs to promote customer loyalty and encourage greater product sales. We accrue customer rebates over the rebate periods based upon estimated attainments of the provisions in the rebate agreements using available information and record these rebate accruals as reductions of sales.

***Research and Development Expenses***

Research and development expenses are expensed as incurred and are also included in selling, general and administrative expenses. Expenditures for company-sponsored research and development activities were approximately \$30.4 million for 2011, \$27.3 million for 2010, and \$28.3 million for 2009.



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**FERRO CORPORATION AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**Years ended December 31, 2011, 2010 and 2009 (Continued)**

***Restructuring Programs***

We expense costs associated with exit and disposal activities designed to restructure operations and reduce ongoing costs of operations when we incur the related liabilities or when other triggering events occur. After the appropriate level of management having the authority approves the detailed restructuring plan and the appropriate criteria for recognition are met, we establish accruals for employee termination costs. The accruals are estimates that are based upon factors including statutory and union requirements, affected employees' lengths of service, contract provisions, salary level, and health care benefit choices. We also analyze the carrying value of the affected long-lived assets for impairment and reductions in their remaining estimated useful lives. In addition, we record the fair value of any new or remaining obligations when existing operating lease contracts are terminated or abandoned as a result of our exit and disposal activities.

***Asset Impairment***

The Company's long-lived assets include property, plant and equipment, goodwill, and amortizable intangible assets. We review property, plant and equipment and amortizable intangible assets for impairment whenever events or circumstances indicate that their carrying values may not be recoverable. The following are examples of such events or changes in circumstances:

An adverse change in the business climate or market price of a long-lived asset or asset group;

An adverse change in the extent or manner in which a long-lived asset or asset group is used or in its physical condition;

Current operating losses for a long-lived asset or asset group combined with a history of such losses or projected or forecasted losses that demonstrate that the losses will be continuing; or

A current expectation that, more likely than not, a long-lived asset or asset group will be sold or otherwise disposed of significantly before the end of its previously estimated useful life.

The carrying amount of property, plant and equipment and amortizable intangible assets is not recoverable if the recorded value of the asset group exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset group. In the event of impairment, we recognize a loss for the excess of the recorded value over fair value. The long-term nature of these assets requires the estimation of cash inflows and outflows several years into the future and only takes into consideration technological advances known at the time of review.

We review goodwill for impairment annually using a measurement date of October 31st, primarily due to the timing of our annual budgeting process, or more frequently in the event of an impairment indicator. The fair value of each reporting unit that has goodwill is estimated using the average of both the income approach and the market approach, which we believe provides a reasonable estimate of the reporting unit's fair value, unless facts or circumstances exist which indicate a more representative fair value. The income approach is a discounted cash flow model, which uses projected cash flows attributable to the reporting unit, including an allocation of certain corporate expenses based primarily on a proportional sales method. We use historical results, trends and our projections of market growth, internal sales efforts and anticipated cost structure assumptions to estimate future cash flows. Using a risk-adjusted, weighted-average cost of capital, we discount the cash flow projections to the measurement date. The market approach estimates a price reasonably expected to be paid by a market participant in the purchase of the reporting units based on a comparison to similar businesses. If the fair value of any of the reporting units were determined to be less than its carrying value, we would obtain comparable market values or independent appraisals of its net assets.



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**FERRO CORPORATION AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**Years ended December 31, 2011, 2010 and 2009 (Continued)**

***Derivative Financial Instruments***

As part of our risk management activities, we employ derivative financial instruments, primarily foreign currency forward contracts, to hedge certain anticipated transactions, firm commitments, or assets and liabilities denominated in foreign currencies. We also purchase portions of our energy and precious metal requirements under fixed price forward purchase contracts designated as normal purchase contracts.

We record derivatives on our balance sheet as either assets or liabilities that are measured at fair value. For derivative instruments that are designated and qualify as hedges, the gain or loss on the derivative is reported as a component of other comprehensive income and reclassified from accumulated other comprehensive income into earnings when the hedged transaction affects earnings. The ineffective portion, if any, in the change in value of these derivatives is immediately recognized in earnings. For derivatives that are not designated as hedges, the gain or loss on the derivative is recognized in current earnings. We use derivatives only to manage well-defined risks and do not use derivatives for speculative purposes.

***Postretirement and Other Employee Benefits***

We recognize postretirement and other employee benefits as employees render the services necessary to earn those benefits. We determine defined benefit pension and other postretirement benefit costs and obligations with the assistance of actuarial calculations performed by third parties. The calculations and the resulting amounts recorded in our consolidated financial statements are affected by assumptions including the discount rate, expected long-term rate of return on plan assets, the annual rate of change in compensation for plan-eligible employees, estimated changes in costs of healthcare benefits, and other factors. We evaluate the assumptions used on an annual basis.

***Income Taxes***

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax effects of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We record deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future income, tax planning strategies, and recent financial operations.

We recognize a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits.

We recognize interest and penalties related to unrecognized tax benefits within the income tax expense line in the accompanying consolidated statements of operations.

***Cash Equivalents***

We consider all highly liquid instruments with original maturities of three months or less when purchased to be cash equivalents. These instruments are carried at cost.



**Table of Contents****FERRO CORPORATION AND SUBSIDIARIES****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS****Years ended December 31, 2011, 2010 and 2009 (Continued)*****Accounts Receivable and the Allowance for Doubtful Accounts***

Ferro sells its products to customers in diversified industries throughout the world. No customer or related group of customers represents greater than 10% of net sales or accounts receivable. We perform ongoing credit evaluations of our customers and generally do not require collateral. We provide for uncollectible accounts based on historical experience and specific circumstances, as appropriate. Customer accounts we deem to be uncollectible or to require excessive collection costs are written off against the allowance for doubtful accounts. Historically, write-offs of uncollectible accounts have been within our expectations. Detailed information about the allowance for doubtful accounts is provided below:

	2011	2010	2009
	(Dollars in thousands)		
Allowance for doubtful accounts	\$ 10,443	\$ 11,156	\$ 10,685
Bad debt expense	2,349	2,935	2,676

***Inventories***

We value inventory at the lower of cost or market, with cost determined utilizing the first-in, first-out (FIFO) method. We periodically evaluate the net realizable value of inventories based primarily upon their age, but also upon assumptions of future usage in production, customer demand and market conditions. Inventories have been reduced to the lower of cost or realizable value by allowances for slow moving or obsolete goods.

We maintain raw material on our premises that we do not own, including precious metals consigned from financial institutions and customers, and raw materials consigned from vendors. Although we have physical possession of the goods, their value is not reflected on our balance sheet because we do not have title.

We obtain precious metals under consignment agreements with financial institutions for periods of one year or less. These precious metals are primarily silver, gold, platinum and palladium and are used in the production of certain products for our customers. Under these arrangements, the financial institutions own the precious metals, and accordingly, we do not report these precious metals as inventory on our consolidated balance sheet although they physically are in our possession. These agreements are cancelable by either party at the end of each consignment period, however, because we have access to a number of consignment arrangements with available capacity, our consignment needs can be shifted among the other participating institutions in order to ensure our supply. In certain cases, these financial institutions require cash deposits to provide additional collateral beyond the value of the underlying precious metals. The financial institutions charge us fees for these consignment arrangements, and these fees are recorded as cost of sales.

***Property, Plant and Equipment***

We record property, plant and equipment at historical cost. In addition to the original purchased cost, including transportation, installation and taxes, we capitalize expenditures that increase the utility or useful life of existing assets. For constructed assets, we capitalize interest costs incurred during the period of construction. We expense repair and maintenance costs, including the costs of major planned overhauls of equipment, as incurred. We depreciate property, plant and equipment on a straight-line basis, generally over the following estimated useful lives of the assets:

Buildings  
Machinery and equipment

20 to 40 years  
5 to 15 years

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**FERRO CORPORATION AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**Years ended December 31, 2011, 2010 and 2009 (Continued)**

***Other Capitalized Costs***

We capitalize the costs of computer software developed or obtained for internal use after the preliminary project stage has been completed and management, with the relevant authority, authorizes and commits to funding a computer software project, and it is probable that the project will be completed and the software will be used to perform the function intended. External direct costs of materials and services consumed in developing or obtaining internal-use computer software, payroll and payroll-related costs for employees who are directly associated with the project, and interest costs incurred when developing computer software for internal use are capitalized within other non-current assets. Capitalization ceases when the project is substantially complete, generally after all substantial testing is completed. We expense training costs and data conversion costs as incurred. We amortize software on a straight-line basis over its estimated useful life, which has historically been in a range of 1 to 12 years.

***Environmental Liabilities***

As part of the production of some of our products, we handle, process, use and store hazardous materials. As part of these routine processes, we expense recurring costs associated with control and disposal of hazardous materials as they are incurred. Occasionally we are subject to ongoing, pending or threatened litigation related to the handling of these materials or other matters. If, based on available information, we believe that we have incurred a liability and we can reasonably estimate the amount, we accrue for environmental remediation and other contingent liabilities. We disclose material contingencies if the likelihood of the potential loss is reasonably possible but the amount is not reasonably estimable.

In estimating the amount to be accrued for environmental remediation, we use assumptions about:

Remediation requirements at the contaminated site;

The nature of the remedy;

Existing technology;

The outcome of discussions with regulatory agencies;

Other potentially responsible parties at multi-party sites; and

The number and financial viability of other potentially responsible parties.

We actively monitor the status of sites, and, as assessments and cleanups proceed, we update our assumptions and adjust our estimates as necessary. Because we are uncertain about the timing of related payments, we do not discount the estimated remediation costs.

***Reclassifications***

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We made reclassifications in the prior year consolidated financial statements to conform the presentation to the current year. In the balance sheet, income taxes payable of \$8.8 million at December 31, 2010, are included in accrued expenses and other current liabilities, and non-current deferred tax liabilities of \$2.2 million at December 31, 2010, are included in other non-current liabilities.

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**FERRO CORPORATION AND SUBSIDIARIES**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**Years ended December 31, 2011, 2010 and 2009 (Continued)**

***Recently Adopted Accounting Pronouncements***

On January 1, 2010, we adopted Financial Accounting Standards Board ( FASB ) Accounting Standards Update ( ASU ) 2009-16, *Accounting for Transfers of Financial Assets*, ( ASU 2009-16 ), which is codified in *FASB Accounting Standards Codification* ( ASC ) Topic 860, Transfers and Servicing. This pronouncement provides guidance for derecognition of transferred financial assets. Adoption of ASU 2009-16 had no effect on our consolidated financial statements.

On January 1, 2010, we adopted ASU 2009-17, *Improvements to Financial Reporting by Enterprises Involved with Variable Interest Entities*, ( ASU 2009-17 ), which is codified in ASC Topic 810, Consolidations. This pronouncement amends the consolidation guidance that applies to variable interest entities. Adoption of ASU 2009-17 did not have a material effect on our consolidated financial statements.

On January 1, 2010, we adopted most of the provisions of ASU 2010-06, *Improving Disclosures About Fair Value Measurements*, ( ASU 2010-06 ), which is codified in ASC Topic 820, Fair Value Measurements, and Topic 715, Compensation - Retirement Benefits. The remaining provisions will be effective for our fiscal year that begins January 1, 2011. This pronouncement expands disclosures about fair value measurements. Adoption of ASU 2010-06 did not and will not have a material effect on our consolidated financial statements.

On December 31, 2010, we adopted ASU 2010-29, *Disclosure of Supplementary Pro Forma Information for Business Combinations*, ( ASU 2010-29 ), which is codified in ASC Topic 805, Business Combinations. This pronouncement provides guidance on pro forma revenue and earnings disclosure requirements for business combinations. Adoption of ASU 2010-29 did not have a material effect on our consolidated financial statements.

On January 1, 2011, we prospectively adopted ASU 2009-13, *Multiple Deliverable Revenue Arrangements*, ( ASU 2009-13 ) and ASU 2010-17, *Revenue Recognition - Milestone Method*, ( ASU 2010-17 ). ASU 2009-13 applies to all deliverables in contractual arrangements in which a vendor will perform multiple revenue-generating activities. ASU 2010-17 defines a milestone and determines when it may be appropriate to apply the milestone method of revenue recognition for research or development transactions. These pronouncements are codified in ASC Topic 605, Revenue Recognition. Adoption of these pronouncements did not have a material effect on our consolidated financial statements.

***New Accounting Pronouncements Not Yet Adopted***

In May 2011, the FASB issued ASU 2011-04, *Fair Value Measurement: Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs*, ( ASU 2011-04 ), which is codified in ASC Topic 820, Fair Value Measurement. This pronouncement changes certain fair value measurement guidance and expands certain disclosure requirements. ASU 2011-04 will be effective for our fiscal year that begins January 1, 2012, and is to be applied prospectively. We do not expect that adoption of this pronouncement will have a material effect on our consolidated financial statements.

The FASB issued ASU 2011-05, *Presentation of Comprehensive Income*, ( ASU 2011-05 ) in June 2011 and ASU 2011-12, *Deferral of the Effective Date for Amendments to the Presentation of Reclassifications of Items Out of Accumulated Other Comprehensive Income in Accounting Standards Update No. 2011-05*, ( ASU 2011-12 ) in December 2011, which are codified in ASC Topic 220, Comprehensive Income. ASU 2011-05 requires companies to present items of net income, items of other comprehensive income and total comprehensive income in one continuous statement or two separate but consecutive statements. ASU 2011-12

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indefinitely defers certain provision of ASU 2011-05 that required companies to present reclassification adjustments out of accumulated other comprehensive income by component in both the statement in which net income is presented and the statement in which other comprehensive income is presented. These pronouncements will be effective for our fiscal year that begins January 1, 2012, are to be applied retrospectively, and will not have a material effect on our consolidated financial statements.

In September 2011, the FASB issued ASU 2011-08, *Testing Goodwill for Impairment*, ( ASU 2011-08 ), which is codified in ASC Topic 350, Intangibles – Goodwill and Other. This pronouncement permits companies testing goodwill for impairment to first assess qualitative factors to determine whether the two-step impairment test is required. ASU 2011-08 is effective for our fiscal year that begins January 1, 2012. We do not expect that adoption of this pronouncement will have a material effect on our consolidated financial statements.

In December 2011, the FASB issued ASU 2011-11, *Disclosures about Offsetting Assets and Liabilities*, ( ASU 2011-11 ), which is codified in ASC Topic 210, Balance Sheet. This pronouncement contains new disclosure requirements about a company's right of setoff and related arrangements associated with its financial and derivative instruments. ASU 2011-11 will be effective for our fiscal year that begins January 1, 2013, and is to be applied retrospectively. We do not expect that adoption of this pronouncement will have a material effect on our consolidated financial statements.

**3. Inventories**

	<b>December 31,</b>	
	<b>2011</b>	<b>2010</b>
	<b>(Dollars in thousands)</b>	
Raw materials	\$ 78,199	\$ 63,856
Work in process	42,111	38,684
Finished goods	108,503	99,527
Total	\$ 228,813	\$ 202,067

In the production of some of our products, we use precious metals, some of which we obtain from financial institutions under consignment agreements with terms of one year or less. The financial institutions retain ownership of the precious metals and charge us fees based on the amounts we consign and the period of consignment. These fees were \$9.5 million for 2011, \$5.3 million for 2010, and \$4.3 million for 2009 and were charged to cost of sales. We had on hand precious metals owned by participants in our precious metals program of \$195.0 million at December 31, 2011, and \$205.7 million at December 31, 2010, measured at fair value based on market prices for identical assets. At December 31, 2010, we had delivered \$28.1 million in cash collateral as a result of the market value of the precious metals under consignment exceeding the credit lines provided by some of the financial institutions. At December 31, 2011, we were not required to deliver cash collateral.

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	December 31,	
	2011	2010
	(Dollars in thousands)	
Land	\$ 18,394	\$ 31,120
Buildings	236,871	264,004
Machinery and equipment	677,616	666,118
Construction in progress	45,577	24,584
Total property, plant and equipment	978,458	985,826
Total accumulated depreciation	(599,122)	(594,330)
Property, plant and equipment, net	\$ 379,336	\$ 391,496

Depreciation expense was \$55.8 million for 2011, \$60.5 million for 2010, \$64.7 million for 2009. Noncash investing activities for capital expenditures, consisting of new capital leases during the year and unpaid capital expenditure liabilities at year end, amounted to \$19.0 million for 2011, \$11.1 million for 2010, and \$6.0 million for 2009.

In 2011, we recorded impairments of assets held for use of \$4.4 million, which are classified as restructuring and impairment charges in our statements of operations. Various operational challenges indicated possible impairment of the property, plant and equipment at our facilities in Argentina and Belgium. We estimated the fair values of these assets using discounted cash flow models (Level 3 measurements within the fair value hierarchy). The impairment charges by segment were \$2.6 million in Performance Coatings and \$1.8 million in Polymer Additives.

There were no impairments of assets held for use in 2010 or 2009.

At December 31, 2011, total assets held for sale of \$16.4 million were classified as other non-current assets due to the nature of the underlying assets, although we expect to sell these assets within the next twelve months. These assets include land and buildings at our Toccoa, Georgia, facility; the Porcelain Enamel facility in Rotterdam, Netherlands; the remaining portion of our Uden, Netherlands, facility; the Casiglie, Italy facility; and the Limoges, France, facility.

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Details and activity of goodwill by segment follow:

	Electronic Materials	Performance Coatings	Color and Glass Performance Materials	Polymer Additives	Specialty Plastics	Pharmaceuticals	Total
(Dollars in thousands)							
Balance at December 31, 2009:							
Gross goodwill	\$ 151,975	\$ 41,984	\$ 68,473	\$ 73,447	\$ 16,973	\$ 40,431	\$ 393,283
Accumulated impairment losses		(41,388)		(73,447)	(16,973)	(40,431)	(172,239)
	151,975	596	68,473				221,044
Acquisitions		4,038					4,038
Dispositions			(4,237)				(4,237)
Other adjustments	(17)		(202)				(219)
Foreign currency adjustment	637	(22)	(1,525)				(910)
Balance at December 31, 2010:							
Gross goodwill	152,595	46,000	62,509	73,447	16,973	40,431	391,955
Accumulated impairment losses		(41,388)		(73,447)	(16,973)	(40,431)	(172,239)
	152,595	4,612	62,509				219,716
Impairments		(3,881)					(3,881)
Other adjustments	(2)		(46)				(48)
Foreign currency adjustment	357	(159)	(384)				(186)
Balance at December 31, 2011:							
Gross goodwill	152,950	45,841	62,079	73,447	16,973	40,431	391,721
Accumulated impairment losses		(45,269)		(73,447)	(16,973)	(40,431)	(176,120)
	\$ 152,950	\$ 572	\$ 62,079	\$	\$	\$	\$ 215,601

The significant assumptions and ranges of assumptions we used in our impairment analysis of goodwill follow:

Significant Assumptions	2011	2010
Weighted-average cost of capital	13.0% - 14.0%	12.0% - 13.0%
Residual growth rate	3%	3.0% - 5.0%

During 2011, our Tile Coating Systems reporting unit in our Performance Coatings segment experienced a decline in profitability, as well as a reduction in anticipated profitability levels, thereby decreasing the reporting unit's fair value below its carrying value. As a result of these indicators, a remeasurement of the reporting unit's fair value indicated a full impairment of its goodwill. An impairment loss of \$3.9 million for the Performance Coatings segment has been included in restructuring and impairment charges in the consolidated statements of operations.

In 2009, an impairment of goodwill in our Pharmaceuticals business was triggered by changes made to the assumptions used to determine valuation under the market approach. We compared the carrying value of this reporting unit against its fair value, and determined that the carrying value exceeded the fair value. As a result, we recorded a goodwill impairment of \$8.2 million for the Pharmaceuticals business. The amount is included in restructuring and impairment charges in the consolidated statements of operations.





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Details of amortizable intangible assets follow:

	Estimated Economic Life	December 31, 2011                      2010 (Dollars in thousands)	
Gross amortizable intangible assets:			
Patents	5 - 16 years	\$ 5,653	\$ 5,714
Land rights	14 - 40 years	5,036	4,885
Technological know-how and other	5 - 30 years	11,514	11,475
Total gross amortizable intangible assets		22,203	22,074
Accumulated amortization:			
Patents		(4,607)	(4,447)
Land rights		(2,272)	(2,125)
Technological know-how and other		(4,268)	(3,633)
Total accumulated amortization		(11,147)	(10,205)
Amortizable intangible assets, net		\$ 11,056	\$ 11,869

We amortize amortizable intangible assets on a straight-line basis over the estimated useful lives of the assets. Amortization expense related to amortizable intangible assets was \$1.0 million for 2011, \$0.9 million for 2010, and \$1.1 million for 2009. The weighted average remaining useful lives, in years, of the amortizable intangible assets are 6, 30, and 14 for patents, land rights, and technological know-how and other, respectively. Aggregate amortization expense for amortizable intangible assets is expected to be approximately \$1.0 million annually for 2012 through 2016.

**6. Debt and Other Financing**

Loans payable and current portion of long-term debt at December 31st consisted of the following:

	2011 (Dollars in thousands)	2010
Loans payable to banks	\$ 404	\$ 709
International accounts receivable sales programs	8,150	
Current portion of long-term debt	2,687	2,871
Total loans payable and current portion of long-term debt	\$ 11,241	\$ 3,580

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Long-term debt at December 31st consisted of the following:

	<b>2011</b>	<b>2010</b>
	<b>(Dollars in thousands)</b>	
7.875% Senior Notes	\$ 250,000	\$ 250,000
6.50% Convertible Senior Notes, net of unamortized discounts	33,537	33,368
Revolving credit facility	7,706	
Capitalized lease obligations (see Note 14)	4,459	6,177
Other notes	5,067	4,297
Total long-term debt	300,769	293,842
Current portion	(2,687)	(2,871)
Long-term debt, less current portion	\$ 298,082	\$ 290,971

The annual maturities of long-term debt for each of the five years after December 31, 2011, were as follows:

	<b>(Dollars in thousands)</b>
2012	\$ 3,029
2013	36,125
2014	973
2015	8,704
2016	689
Thereafter	255,078
Total maturities of long-term debt	304,598
Unamortized discounts on 6.50% Convertible Senior Notes	(1,579)
Imputed interest and executory costs on capitalized lease obligations	(2,250)