

Goldman Sachs

**Sixth Annual Electronics Investor
Forum**

Growth in Electronics

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www.praxair.com



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Forward Looking Statements

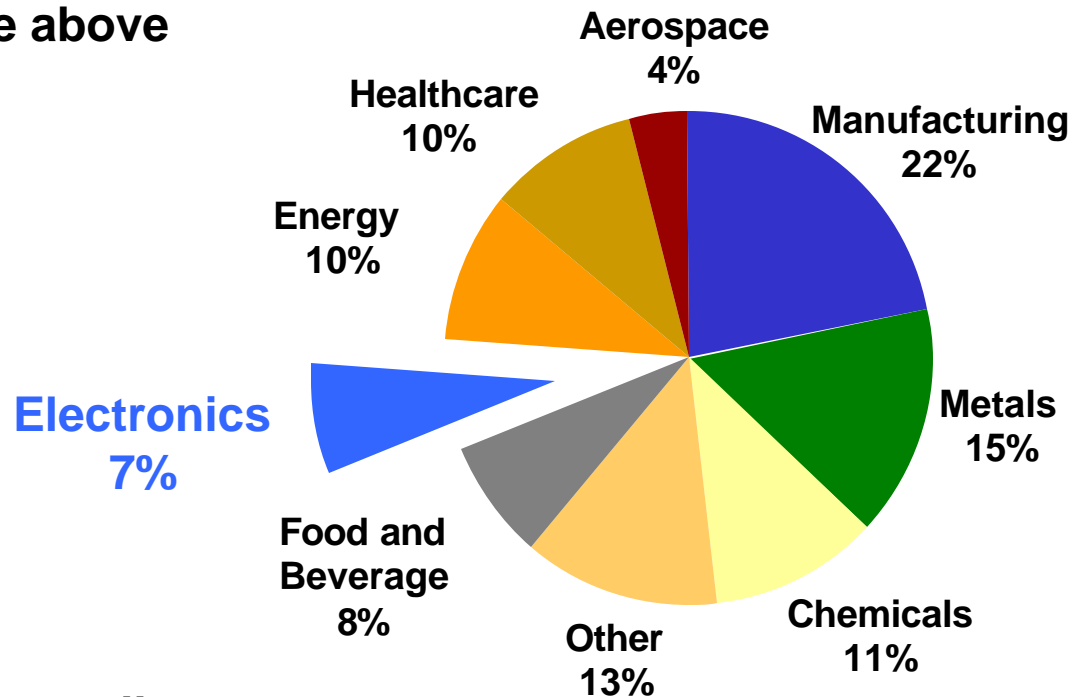
The forward-looking statements in this presentation concerning revenue, earnings, return on capital, volume, growth, economic growth rates, stock price performance, and the value of future product and service offerings involve risks and uncertainties, and are subject to change based on various important factors. These include the impact of changes in worldwide and national economies, availability and cost of power and other energy materials and the ability to recover these costs, pricing fluctuations in foreign currencies, changes in interest rates, the continued timely development and acceptance of new products and processes, the impact of technologies, competitive products and pricing, and the impact of tax and other legislation and regulation in the jurisdictions in which the company operates.

The technology discussed is included in U.S. and foreign patents and patent applications.

Praxair Snapshot

- ◆ 2003 sales: \$5.6 billion
- ◆ Commercial terms capture above average ROC
 - Long term contracts
 - on-site
 - merchant
 - packaged
 - Take or pay
- ◆ Broad customer base
- ◆ Providing key solutions at small fraction of cost stack

2003 End Markets

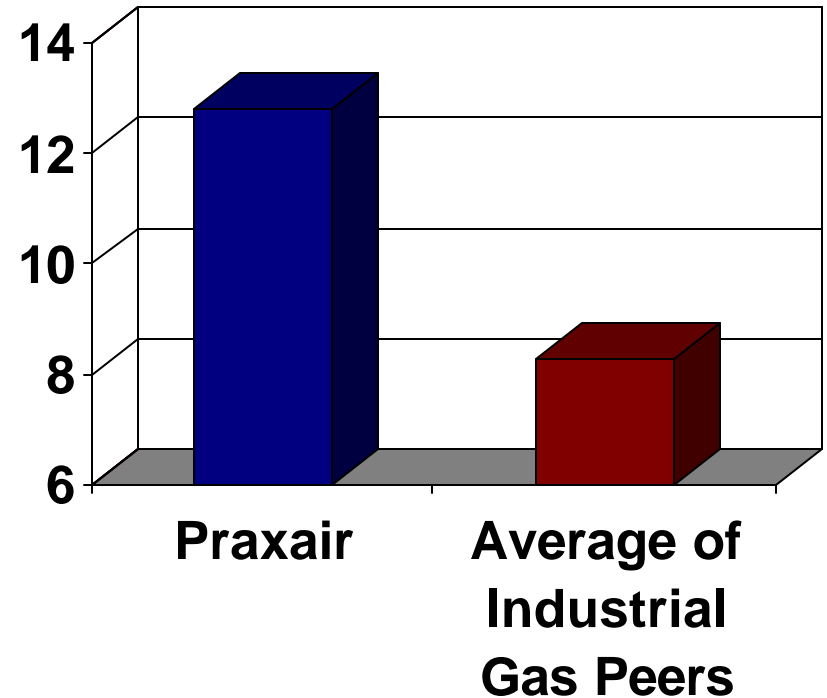


Operating Model

- ◆ Focus on 10 core geographies
- ◆ Volume demand grows faster than industrial production
- ◆ Optimize 5 growing opportunities
 - US Gulf Coast hydrogen
 - **Electronics**
 - Healthcare
 - China
 - Application technologies
- ◆ Relentless focus on execution
 - Productivity savings > \$100MM/yr
 - Procurement
 - Global operational excellence
 - Six Sigma
 - Flawless project execution



2003 ROC %



ROC=Net Operating Profit After Tax/Average Capital

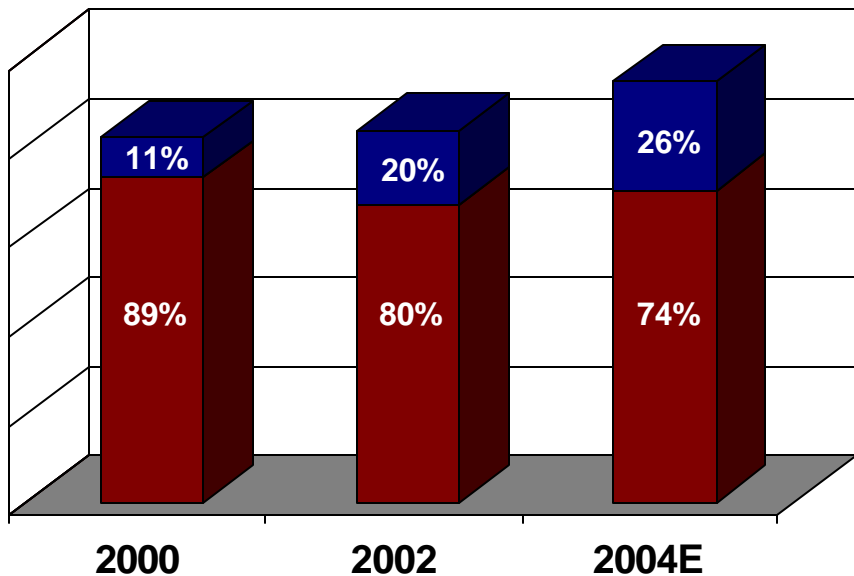
What we are **NOT** doing

- ◆ Dilutive acquisitions
- ◆ Projects at or near our cost of capital
- ◆ Spending CAPEX ahead of demand
- ◆ Project financing
- ◆ “One-off” plant sales

*A highly disciplined approach that mitigates risk
and creates a “smart” portfolio*

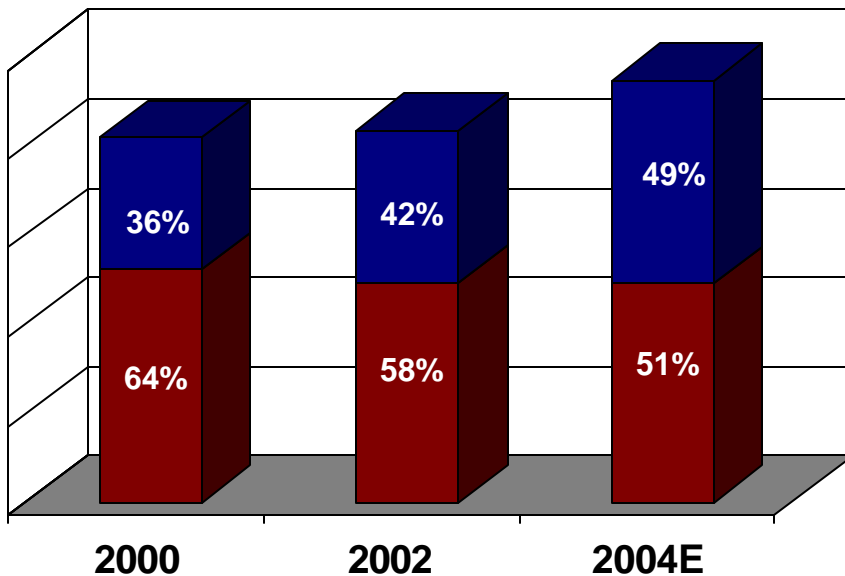
Global Electronics Sales - \$420MM in 2003

By Geography



■ North America/Europe ■ Asia

By Product

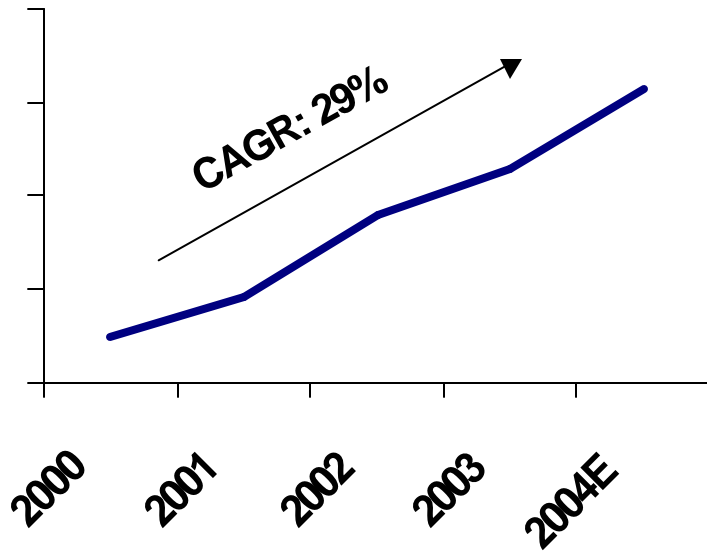


■ Industrial Gases ■ Materials Science & Services

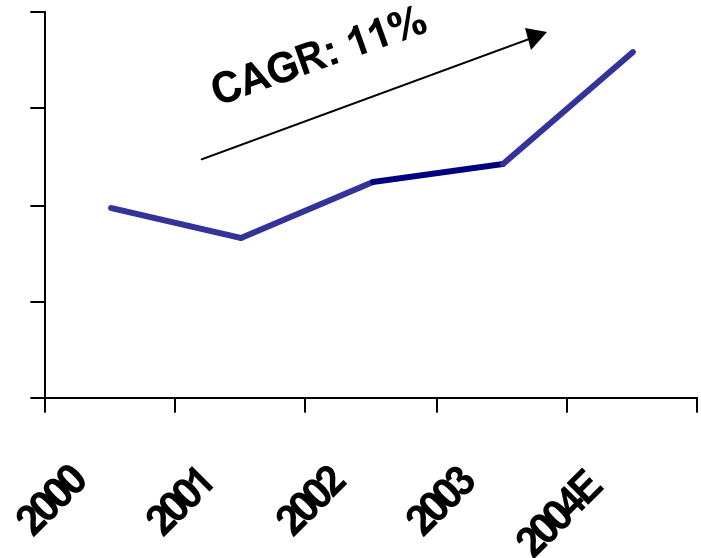
Mix is shifting

Key Growth Areas

Asia



Materials Science and Services



From 2000 to 2004 the CAGR of global MSI was 2%

Key Growth Initiatives - Semiconductors

◆ Materials Science for 300mm

- Thin film metal deposition:
 - PVD, CVD, & ALD
- CMP consumables:
 - belts, pads, slurries
- Advanced components

◆ Supply Chain Services

- Generic components
- Parts management
- Applied Materials alliance

◆ Electronic Gases

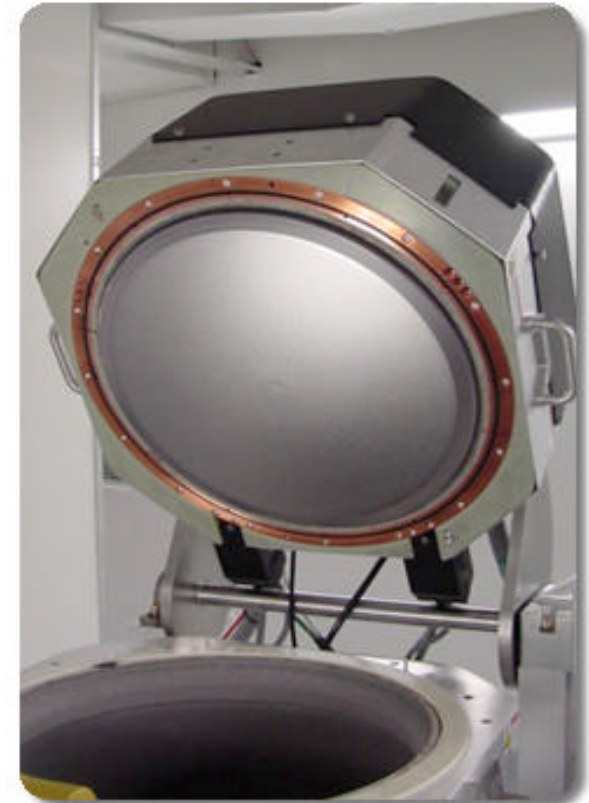
- On-site high purity gases
- Select specialty gases
- Expansion in Asia



Investment focus on high growth, high return segments

Materials Science - Physical Vapor Deposition

- ◆ **Positioned to meet growing 300mm demand:
Cu, Ta, Co, and Ni**
- ◆ **Strong intellectual property position**
 - Competitive advantage in Tantalum - *AdvanTage™*
 - Long life targets increase tool productivity by 30%
 - Ultrafine grain materials - better film uniformity and device yield
 - Product development with key OEM's
 - State of the art 300mm application lab
- ◆ **Supplying 80% of the 300mm fabs operating globally**



A leading position in \$400MM PVD market

CVD/ALD Precursors

- ◆ Developing next generation liquid CVD precursors for depositing metal and metal oxide films - Hf, Ru, Ta, & others
- ◆ Materials present in vapor react on chip surface to form thin film
- ◆ Enables advanced devices @ 65nm and below: high k dielectrics, DRAM, gate stack, inter connection barrier films
- ◆ Complementary to deposition materials and electronic gas business platforms



High growth market after 2008

Materials Science - CMP Consumables

◆ Belts and Pads

- In production for copper technology
- Multiple geometries/chemistries
- Beta testing with multiple customers
- Production facility to start-up in Q3 2004

◆ Slurries

- Leading supplier of alumina based polishing slurries
- HC Starck JDA for silica
- State of the art testing lab in Indianapolis
- Development with Applied Materials for Reflexion tool™



Key OEM alliances enhance product development for integrated customer solutions

Advanced Components

◆ Technically differentiated components for chamber applications

- Electrostatic chucks – performance materials and design for 300mm requirements
- Chamber components - liners, gas dispersion plates, electrodes, rings, screen/baffles, chamber, exhaust systems
- Specialty ceramic materials and coatings technology

◆ Increasing customer productivity

- Reducing particle generation increases product yield
- Increasing corrosion resistance provides longer service life

◆ Enabling smaller feature sizes

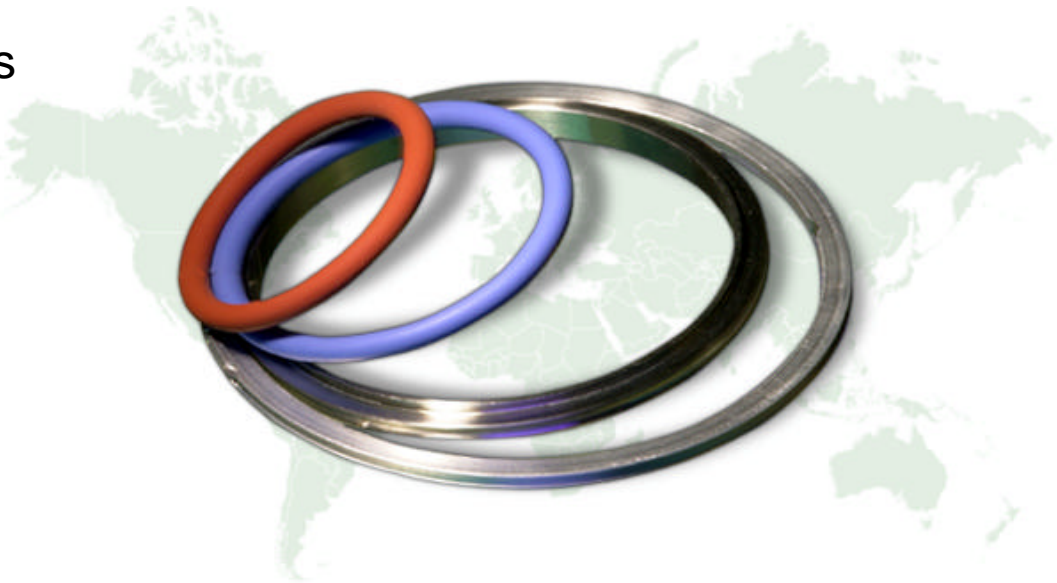
Developing performance materials and processes to increase wafer processing accuracy



Creating value from increased component performance

Supply Chain Services

- ◆ Supply chain management and one-stop shopping for a wide range of consumables
- ◆ Reduces the need for fabs to deal with multiple vendors for thousands of parts
- ◆ Applied Materials alliance combines Praxair's existing operational expertise with AMAT's position in leading fabs
- ◆ Providing a service for the generic consumable market



AMAT alliance enables market share growth

Electronic Gases - Bulk and On-site

- ◆ **Low cost reliable supply**
- ◆ **Winning in Asia**
 - China - N₂ supply and other products to new 300mm fabs
 - Korea - N₂ supply at Samsung's 300mm in Geihung
 - Korea - N₂, H₂ & He supply at Samsung's new flat panel display complex
- ◆ **Leading technology supplier**
 - ◆ ***Supercritical CO₂***
 - Leading candidate for enabling dry cleaning solution
 - Praxair/TEL provides a unique/proprietary solution
 - Demonstrated Integrated system and tool
 - First to market



World class supply and distribution capabilities

Electronic Gases - Process Gases

- ◆ **Integrated source for key process gases, services, and delivery systems**
- ◆ **Focus on select process gas products for semiconductor, LCD and LED markets**
 - Arsine, Phosphine, Silane, Ammonia, NF3
- ◆ **Growth in Europe and Asia on all select process gas products**
- ◆ **UpTime™ gas delivery system**
 - Increased productivity & lower cost of ownership
- ◆ **Recent ultrahigh purity ammonia supply wins for Asian LED:**
 - Epistar (Taiwan)
 - EpiPlus (Korea)
 - Luxxon (Taiwan)
 - South Epitaxy (Taiwan)



Market Outlook - Key Products

	<u>Global 2003 Market (\$MM)</u>	<u>2004-6 annual growth rate*</u>
Targets	\$400	10-15%
Tantalum	\$55	40%
CMP Pads	\$150	15-20%
CMP Slurries	\$250	15-20%
Ceramic Chamber Components	\$30	40%
Supply Chain Services	\$500	15%

In Q1 2004 Materials Science and Services grew 37% and overall gas sales grew 6% (YOY)

Principles of Sustainability

Governance and Integrity

Foster a culture of integrity and accountability throughout the company through rigorous compliance with all laws, and by establishing and following effective corporate governance practices.

Customer Commitment

Continuously develop new products and applications that help our customers improve their productivity, energy efficiency and environmental performance. Provide the highest levels of service, reliability and quality to our customers.

Environmental Responsibility

Continue to improve the efficiency of energy consumption. Reduce the intensity¹ of air emissions, including greenhouse gases.

Employee Safety and Development

Maintain a safe work environment with a goal of zero accidents. Provide training and career opportunities that allow employees to develop to their fullest potential. Increase the diversity of our workforce so that it is more representative of the communities in which we operate.

Community Support

Help to improve the welfare and future of the communities in which we operate by sharing our knowledge, expertise and resources related to environmental protection, and community health, safety and security.

Financial Performance

Continuously improve our financial performance and provide attractive returns to our shareholders. Generate operating cash flow to reinvest in business growth and pay dividends.

¹Intensity is per-unit-of-production measure