

UNRIVALED SCIENTIFIC KNOWLEDGE

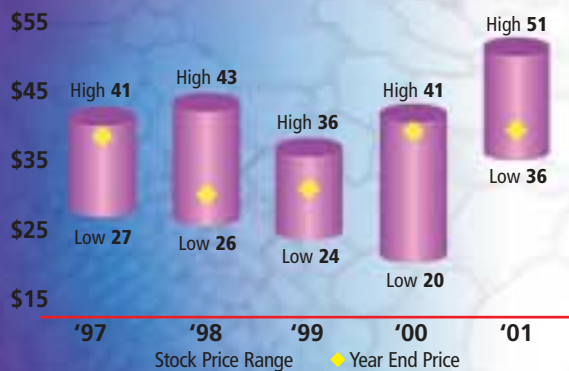
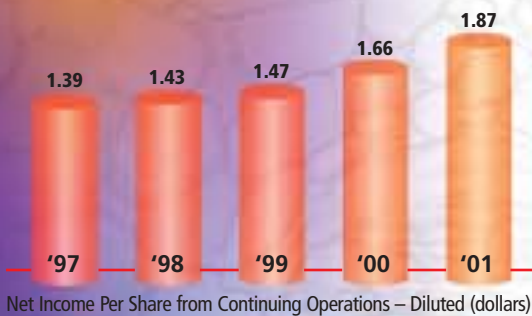
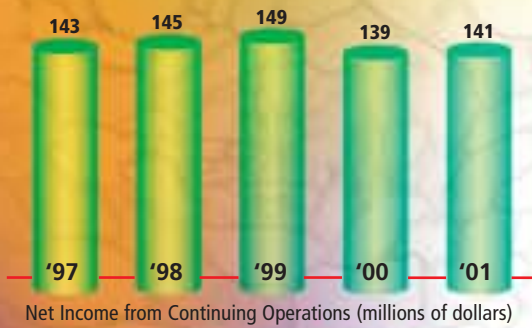
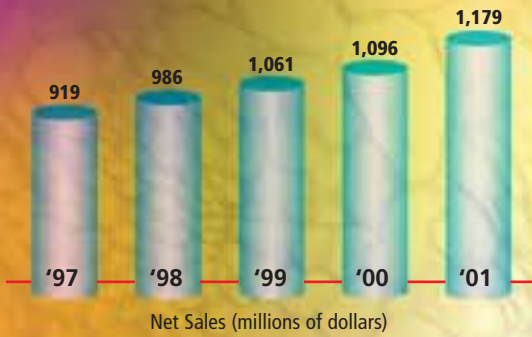
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SIGMA - ALDRICH

Sigma-Aldrich is a leading Life Science and High Technology company. Our biochemical and organic chemical products and kits are used in scientific and genomic research, biotechnology, pharmaceutical development, the diagnosis of disease and chemical manufacturing. We have customers in life science companies, university and government institutions, hospitals and in industry. Sigma-Aldrich operates in 33 countries and has 6,500 employees providing excellent service worldwide.



OUR VISION

We are committed to the success of our Customers, Employees and Shareholders through leadership in **Life Science, High Technology** and **Service**.

FINANCIAL HIGHLIGHTS

Years Ended December 31

(In millions, except per share data and percents)

	2001	2000	% Increase
Net sales	\$1,179.4	\$1,096.3	7.6
Net income*	140.7	139.1	1.2
Net income per share — diluted*	1.87	1.66	12.7

*From continuing operations



SIGMA-ALDRICH

2001

LEADERSHIP IN LIFE SCIENCE AND HIGH TECHNOLOGY

LEADERSHIP IN LIFE SCIENCE AND HIGH TECHNOLOGY



CUSTOMERS

- 40% Pharmaceutical, Diagnostics, Biotechnology Companies
 - 30% Universities, Government Institutions, Non-Profit Organizations
 - 20% Chemical and Allied Industries, Industrial Companies
 - 10% Hospitals, Doctors' and Commercial Laboratories
- We have over 60,000 accounts worldwide representing about one million individual customers!

LOCATIONS

- Argentina
- Australia
- Austria
- Belgium
- Brazil
- Canada
- Czech Republic
- Denmark
- Finland
- France
- Germany
- Greece
- Hungary
- India
- Ireland
- Israel
- Italy
- Japan
- Korea
- Malaysia
- Mexico
- Netherlands
- Norway
- Poland
- Portugal
- Russia
- Singapore
- South Africa
- Spain
- Sweden
- Switzerland
- United Kingdom
- United States

EMPLOYEES

6,500
 - 3,600 United States
 - 2,900 International
 - Operations in 33 countries

PRODUCTS

85,000
 - 40,000 manufactured at 29 facilities in 8 countries
 - 45,000 purchased and sourced from 10,000 suppliers

DISTRIBUTION

15 distribution centers in 12 countries



BUSINESS DIVISIONS

% Life Science % High Technology

SCIENTIFIC RESEARCH

70% 30%

World's leading supplier of high quality research chemicals and products for use in Life Science and High Technology applications.



BIOTECHNOLOGY

80% 20%

Major supplier of biochemicals and kits for Biotechnology and genome Life Science research.

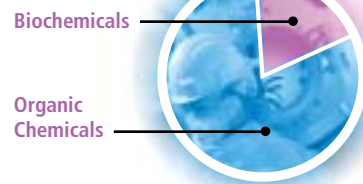


\$7.5 billion market

FINE CHEMICALS

75% 25%

Large-sized supplier of larger-scale organic chemicals and biochemicals used in Pharmaceutical, Biotechnology and High Technology industries.

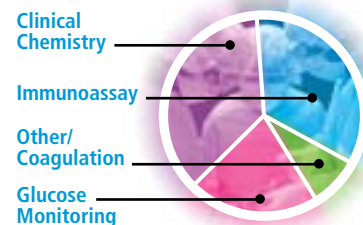


\$50 billion market

DIAGNOSTICS

100%

A focused supplier of reagents and instruments for specific disease testing to hospitals



\$20 billion market

SIGMA-ALDRICH

75% 25%

LIFE SCIENCE HIGH TECHNOLOGY

MARKET & COMPETITION

Growth: <5%
 Competition: Top 5 of 300 companies
 EMerck/VWR
 Fisher
 Mallinckrodt
 Roche Biomolecular
 Wako

Sigma-Aldrich Market Share: 13%
 Sales Growth Goal: 8%

2001 SALES
 Growth Reported
 Growth Excluding Currency Effect

\$655 million
 6.8% 10.0%

STRENGTHS

- World's leading supplier of Life Science and specialty High Technology research chemicals
- Leader in biochemicals, including enzymes, buffers and carbohydrates
- Dominant supplier of organic chemicals
- Web site recognized as preferred solution for buying research chemicals on-line
- 3.5 million catalogs

OPPORTUNITIES

- Increase product offering
- Exploit SAP computer software system and Web site
- Grow international sales faster

Growth: >10%
 Competition: Top 5 of 200 companies
 Amersham/Pharmacia
 Applied Biosystems
 Becton Dickinson
 Invitrogen
 Roche Biomolecular

Sigma-Aldrich Market Share: 10%
 Sales Growth Goal: 12%

\$240 million
 8.7% 12.2%

- One of the strongest collections of Biotechnology capabilities in the Life Science industry
- Key supplier in the important areas of Molecular Biology, Immunochemistry, Cell Culture and Chromatography
- Clear market leader in Cell Signaling and Neuroscience
- Major manufacturer of "synthetic" DNA
- Many R&D initiatives

- Genomic and Proteomic research
- Cell Signaling and Neuroscience developments
- New products from R & D
- Licensing and collaborations

Growth: 4%
 Competition: Top 5 of 500 companies
 Bayer
 Clariant
 DSM
 Lonza
 Rhodia-Chirex

Sigma-Aldrich Market Share: <1%
 Sales Growth Goal: 12%

\$207 million
 9.5% 11.5%

- Broadest organic chemical and biochemical technology base in the industry
- Manufacturing facilities in 5 countries, including cGMP capabilities
- Global sourcing and procurement services using our 250,000 compound database
- 40,000 manufacturing procedures on file

- Organic: Pharmaceutical Intermediates, Electronic Chemicals and Material Science Products
- Biochemical: Cell Culture Media, Buffers and Transgenics

Growth: 5%
 Competition: Top 5 of 150 companies
 Abbott
 Bayer Chiron
 Becton Dickinson
 J&J Ortho
 Roche

Sigma-Aldrich Market Share: <1%
 Sales Growth Goal: 10%

\$77 million
 5.8% 7.4%

- Wide range of reagents, controls and instrumentation for the clinical laboratory
- Clear focus in cardiac profiling and coagulation
- Certified manufacturing facilities enable OEM

- Instruments and reagent line for coagulation
- System and kits for heart attack detection

Sales Growth Goal: 10%

\$1,179 million
 7.6% 10.5%

- Unrivaled scientific knowledge
- Tremendous service
- Commitment to process improvement

- Add scientific information to internet
- Improve service worldwide
- Accelerate process improvement



SHAREHOLDERS

TO OUR SHAREHOLDERS

David R. Harvey

Chairman, President and Chief Executive Officer

Unrivaled scientific knowledge in Life Science and High Technology backed by tremendous service and a focused commitment to process improvement drove the performance of your Company during 2001.

Regarding our financial results, we set a new record for sales with 10.5% (currency adjusted) growth and we're very satisfied. Earnings, on the other hand, did not meet our expectations – mainly due to increasing costs and the effects of acquisitions. However, the diluted earnings per share from operations still increased 12.7%.

Sales increased 7.6% to \$1.18 billion. Net income from continuing operations was \$141 million, with reported diluted net income from continuing operations per share up 12.7% to \$1.87. Adverse currency exchange rates reduced the sales growth by 2.9% and the diluted net income per share by \$.13.

All our business divisions showed good sales growth. Looking at the growth rates, currency adjusted: Scientific Research, our largest unit, grew much faster than its market with a 10.0% gain, particularly benefiting from improved service levels. Our Biotechnology division also had a good year with 12.2% growth aided by increased demand for our Molecular Biology products. The Fine Chemicals unit grew 11.5% with very strong USA sales. Diagnostics achieved a sales increase of 7.4%, below expectations, as sales from our acquisitions developed more slowly than planned. Overall, sales growth in local currency was higher in the USA than Europe, while we saw much higher growth in the other international markets, particularly in Canada, Japan and Korea.

Our stock price ended the year just above

the previous year's level. This was certainly a disappointment but a much better performance than the overall stock market.

These achievements were due to the successful, ongoing implementation of the numerous Strategic Plan initiatives launched in 2000 to improve our performance. Just to recap, our plan was:

Scientific Research - Improved basics: world-class mailing list, new products, pricing and service

Biotechnology - Increased R&D and licensing of life science products

Fine Chemicals - Improved service and quality production capabilities

Diagnostics - Focused on specific disease testing

The long-term financial aims are:

Sales - Grow 10% internally currency adjusted plus 2% from acquisitions

Profit - Grow in line with sales

ROE - Achieve 20% Return on Equity by 2004

Achieving and sustaining such aims would, in fact, put us in the 150 top performing public companies with sales in excess of one billion dollars.

Taking a look at the results over the last two years, it's clear that our Strategic Plan is very much on track. Certainly sales and ROE have both increased nicely. Sales, now growing at 10% (currency adjusted) benefited from rapid growth in our international business aided by greatly improved service. The increase in ROE (exceeding 17%) is mainly due to repurchasing nearly 30 million of the 101 million shares outstanding in 1999. And we have Board approval to purchase another 5 million. Two-thirds of the earnings per share growth in 2001 is due to the effect of the share repurchase and one-third due to real operating performance. This reflects the fact that costs have been rising faster than

sales. Certainly we have been investing heavily both in people and plant assets. Just consider our new \$55 million R&D building in St. Louis (the largest facility expenditure in our history), which also houses many new employees, was not even a hole in the ground two years ago.

Our operating profit performance, of course, needs to improve! Towards the end of 2001, we reviewed our original Strategic Plan and, in particular, took a look at what could be done to improve our profitability.

Not surprisingly, in view of our sales success, we found our customers were responding very positively to our various initiatives: improved service, new products, catalogs and literature and increased sales force. So, from a sales point of view, only slight adjustments are being made to our Strategic Plan. But there will be an increased emphasis on profit growth.

Three initiatives are fundamental to the success of our Company. These encompass our sustainable core competencies.

Leadership in Life Science and High

Technology. Sigma-Aldrich is a leading Life Science and High Technology company. We have the broadest biochemical and organic chemical scientific knowledge and expertise in the world. We list 85,000 products and produce 40,000, many more than any other company. And our leadership will continue as the "number" gap gets wider each year.

Sigma-Aldrich is clearly the leader in supplying specialty research chemicals and biochemicals in the \$7.5 billion worldwide research market. Our well-known brands are found in research laboratories worldwide. In fact, we dominate the traditional life science and organic chemical markets. We also have the strongest collection of varied Biotechnology capabilities. In Molecular Biology, the study of life at the DNA level, we are rapidly becoming an important player (now the 5th largest in the world) as we introduce



TO OUR SHAREHOLDERS TO OUR SHAREHOLDERS

many new, innovative products. We have sales of over \$100 million both in the Genome sector, where we're a major producer of "synthetic" DNA, and in the fast-growing areas of Cell Signaling and Neuroscience (the study of the brain, e.g. research in Parkinson's and Alzheimer's diseases) where we are the world leader. We're also a major supplier of immunochemicals for studies of hormones, cells and proteins. And, we are a leader in supplying Cell Culture media used to grow animal, plant and insect cells both in the laboratory and in industry.

Sigma-Aldrich's enormously varied production capabilities give our Fine Chemicals division a unique position in supplying larger quantities of our products to Pharmaceutical, Diagnostic, Biotechnology and Industrial Chemical companies. There are no dominant suppliers in the \$50 billion Fine Chemical market. We're certainly in the top 25. In 2001 we were named as one of the "Top 20" Innovators by *Chemical Specialties* magazine, a great tribute to our scientists and technical expertise. In the Diagnostics market (\$20 billion), we're a small player but aiming for a position in diagnosing specific diseases.

Clearly, we hold a leadership position in many of our markets. The challenge in every sector is simply to expand our market share. And, to do this, we took many key steps in 2001. Here are just a few of the highlights.

We completed our new \$55 million R&D center in St. Louis at the end of 2001. It's now the home to over 100 R&D scientists, including many newly hired Life Science researchers. We already have lots of exciting, new Biotechnology products lined up for launch in 2002. Furthermore, we increased the size of our sales and marketing force. We were also again active in the licensing of products. And, there was an increased focus on new literature and catalogs – the gold standard in our industry – and the mailing list. Overall, there was an aggressive drive for new products, both produced and purchased, to fuel future growth.

On the acquisitions front, in February 2001, we acquired Isotec, a leader in stable isotope production whose products find application in basic research and the diagnosis of disease. The company performed well and was immediately accretive to our earnings. Regarding acquisitions in general, while market values have declined, sellers' expectations certainly have not, making it difficult for us to make deals that provide the desired return. Thus, we're less optimistic about our ability to add 2% growth from acquisitions in 2002. So we'll be focusing even more on internal growth in Life Science and High Technology.

To maintain and improve service, we continue to make major investments in production, R&D, warehousing and administrative support. In 2001, we invested nearly \$109 million, including the completion of our \$55 million R&D facility in St. Louis and a new \$7 million warehouse in Korea. We're also expanding our Cell Culture and organic manufacturing capabilities. Recent major investments in our SAP computer software system (\$55 million) and the Internet (\$5 million/year) are certainly making us a much more unified company worldwide. During 2001, we smoothly implemented SAP at additional international locations. SAP is also fully integrated with our Web site – sigma-aldrich.com.

The Sigma-Aldrich internet site has been extremely well received and we've seen sales double each year in the last three years. The \$75 million sales in 2001 represented almost 10% of our worldwide research sales. We expect this growth to continue due to the ease of ordering and the wealth of informational content. In fact, *Smart Business* magazine rated us 20th out of all USA companies in 2001, ahead of some very illustrious names. Our Web site is certainly a competitive edge, and we intend to intensify our efforts to sustain and widen the gap from our competition. We will continue to invest nearly \$5 million a year. Size certainly has its advantage here, for smaller companies simply cannot afford such a level of commitment.



Obsession with Service. This is what helped build our Company and ensures our competitive edge. We are all in the business of serving our customers. This applies to every one of our 6,500 employees in 33 countries. It's worth noting we are truly a global company with sales split 50% USA, 30% Europe and 20% International. Service is much more than shipping our products promptly from stock out of 15 worldwide distribution centers. It encompasses every relationship with our customers. When customers deal with Sigma-Aldrich, they expect and receive the best possible service.

Passion for Process Improvement. We've achieved great results during recent years. Process improvement has helped service, increased the demand for our Life Science and High Technology products, and taken out tremendous costs (at least \$25 million over the last 5 years). We now have major worldwide projects underway in production, purchasing, packaging, distribution, labels and inventory, in addition to numerous local initiatives.

These process improvement initiatives have already helped pay for the implementation of our Strategic Plan. We now intend to take

**UNRIVALED SCIENTIFIC
KNOWLEDGE**

Sigma-Aldrich is a company with unrivaled scientific knowledge. We supply more products (**85,000** biochemicals and organic chemicals) – backed by extensive technical information—than any other company in the world.

Our scientists have developed an unprecedented **40,000** products using in-house technology.

And we firmly believe we have the experience to make virtually any product a customer needs. This is a tremendous strength. The remaining **45,000** products are carefully sourced and analyzed to ensure their integrity.

Beyond products, we offer a wealth of scientific data in our well-known catalogs and 1.5 million technical documents available on-line – only a third of what will ultimately be on the net. Furthermore, our technical service team is a resource that customers can rely on.

Unrivaled scientific knowledge is our key competitive advantage!

TO OUR SHAREHOLDERS

process improvement to a new level in 2002. It's key to improving our operating performance.

Leadership, Obsession and Passion.

These traits coupled with a real sense of urgency are what we expect in our employees. In 2001, we implemented a common worldwide appraisal of our managers for the first time, which will be extended to all employees in 2002. To succeed, our employees must live our values, work safely, become involved in process improvement and strive for role model behavior. 2001 was the best year in each of these endeavors. Unconditional teamwork is also expected as we share common knowledge and systems.

Overall, we're aiming for a merit culture based on performance and behavior that encourages openness and learning. And, in 2001, the level of communication and training was at its highest in our history.

To challenge and reward our employees we have implemented performance and results-driven compensation worldwide. Additionally, executive and senior management have purchased stock in the Company to meet their shareholding requirements, with an investment value of \$16 million at year-end.

Your Company also showed leadership in responding to the terrorist attack in New York on September 11 by donating \$250,000 to be divided between the funds of the Firefighters and Police Officers. In addition, our employees worldwide voluntarily raised another \$40,000. It's really a sad commentary on humankind in general that although we are all 99.9% genetically identical, we cannot live in peace with each other.

Looking Ahead. Governments and companies worldwide see Life Science and High Technology as important economic drivers and pivotal to their prosperity. So expenditures for chemical research, use of specialty fine chemicals and the diagnosis of disease will certainly continue to increase in the future. We're fortunate that all of our markets are growing!

Life Science will be revolutionized by our

better understanding of genetics. Certainly this will change the diagnosis and treatment of diseases and play a major role in feeding the world. We have only just started down this exciting path of discovery. But the implications for humankind and our Company are enormous.

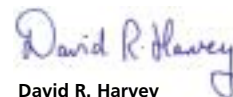
Demand for our High Technology chemical products will also increase as the pace of development continues unabated.

Sigma-Aldrich is well equipped to supply these Life Science and High Technology needs. Our challenge is simply to take advantage of these tremendous opportunities.

Overall, our goal remains to grow internal sales and profits at a 10% rate with another 2% sales and profit growth possibly coming from acquisitions and to further improve our ROE to 20% by 2004. Above all, this will be achieved by continuing to focus on our three key initiatives.

2002 is the year to use our present assets. We have the necessary employees and plants. In fact, overall production capacity utilization is now about 50%, so future capital expenditures will be at a much reduced level. Furthermore, we need to take advantage of our investment in SAP computer software to improve service and better utilize our inventory. Overall, we're optimistic because our markets are focused exclusively on the rapid growth areas of Life Science and High Technology. We intend to capitalize on our unrivaled scientific knowledge.

Before closing, I wish to express the Company's and my personal gratitude to David Kipnis, Andrew Newman and Thomas Urban who retired as Directors in 2001 after many years of dedicated service. They served your Company well! It's also my great pleasure to welcome the new directors, Lee McCollum, Pedro Reinhard and Barrett Toan, who I'm sure will aid the further growth of Sigma-Aldrich. Finally, I wish to thank our customers, our employees and you, our shareholders, for your support and continued confidence in Sigma-Aldrich.



David R. Harvey
Chairman, President and Chief Executive Officer





LIFE SCIENCE AND HIGH TECHNOLOGY LIFE SCIENCE AND HIGH TECHNOLOGY

Sigma-Aldrich is a leading Life Science (75%) and High Technology (25%) company with \$1.2 billion in annual sales. Our biochemical and organic chemical products and kits are used in scientific and genomic research, Biotechnology, Pharmaceutical development, the diagnosis of disease and chemical manufacturing. We have customers in life science companies, university and government institutions, non-profit organizations, hospitals and in industry. Over one million scientists and technologists use our products. Sigma-Aldrich operates in 33 countries and has 6,500 employees providing excellent service worldwide.

WHO WE ARE

With over 85,000 unique products, 40,000 of which we make ourselves, Sigma-Aldrich is unequaled as a manufacturer and supplier of Life Science and High Technology products to customers worldwide. And we continue to add over 5,000 new products each year. We are the leading supplier in the Life Science market with one of the strongest collections of varied Biotechnology capabilities. In High Technology, we're also a leader and our products have a very wide range of chemical applications. Overall, we have unrivaled scientific knowledge.

OUR BUSINESS DIVISIONS

Sigma-Aldrich is organized in four divisions to best serve our customers. The divisions are closely interrelated in their activities, and, they're all supported by our centralized Finance, Information Systems, Human Resources, Quality and Safety and Compliance departments. Indeed, we're a very integrated company.

SCIENTIFIC RESEARCH

We are the world's leading supplier of high quality research chemicals and products for use in traditional Life Science and specialty High Technology applications.

Almost three-quarters of the sales come from biochemicals, organic chemicals, reagents and other products used by customers for fundamental Life Science research.

The remaining quarter of sales result mainly from complex and very pure organic and inorganic chemicals and analytical reagents used in High Technology research.

Our Scientific Research division operates in about two-thirds of the \$7.5 billion total worldwide chemical research market.

We have major production facilities in the USA, Europe and Israel to develop and supply our wide range of products. Overall, scientific research would be unthinkable without the products provided by our Sigma, Aldrich, Fluka and Riedel-de Haën brands. We are the world market leader in biochemicals such as enzymes, buffers and carbohydrates and the clear dominant supplier in organics. With the largest range of biochemicals and organic chemicals, we intend to maintain our leadership position by aggressively adding new products to further widen the gap with our competitors.

BIOTECHNOLOGY

Sigma-Aldrich is a major supplier of biochemicals and kits for Biotechnology, Genomics and Proteomics research applications –



Sigma-Aldrich Business Divisions % of Company

- 55% Scientific Research
- 20% Biotechnology
- <20% Fine Chemicals
- >5% Diagnostics

LIFE SCIENCE & HIGH TECHNOLOGY CENTER

Sigma-Aldrich is a leading Life Science and High Technology company. Our new \$55 million, 145,000 square foot center for research and development, the largest single investment in the history of our Company, was completed at the end of 2001. And it's now the proud home of **Keld Sorensen, Ph.D.**, Director of Research and Development - Biotechnology Division, who played a major role in designing the facility, and 100 other scientists. Their work is focused in the fast-growing areas of Genomics and Proteomics, which are at the forefront of Life Science research. When fully occupied, the laboratories will house 220 researchers.



The Life Science and High Technology Center shows our commitment to innovation and is key to the development of new products essential for our Company's future growth.



ND HIGH TECHNOLOGY

especially in the important areas of Molecular Biology, Cell Signaling and Neuroscience, Immunochemistry and Cell Culture.

Our Biotechnology division operates in the other third of the \$7.5 billion total worldwide research chemical market.

In Molecular Biology, the study of life at the DNA level, we are becoming an important player as we introduce many new and exciting products for DNA isolation, amplification, detection, sequencing and expression. Sigma-Genosys is a major player in the production of "synthetic" DNA-essential in Molecular Biology research- and has facilities in many countries.

In Cell Signaling and Neuroscience, the study of brain function, we hold a clear leadership position. Sigma-RBI supplies very complex molecules used to study how cells communicate with one another.

We are a leading supplier of immunochemicals, which are produced in animals, in the laboratory by growing cells or by genetic engineering. Immunochemicals are used to identify, measure and isolate biological products such as cells, hormones and proteins. Excellent production facilities in the USA and Israel enable us to keep pace with the demand in this growing area.

Cell Culture is another area where we are a major supplier. These products are used to grow animal, plant and insect cells in the laboratory. Our plants in the USA and Scotland produce a wide range of products.

In the areas of analysis and purification, our Supelco brand chromatography products are used extensively in Life Science research and also in High Technology applications.

With the broadest range of Biotechnology capabilities, we intend to become an even stronger player in the future.

FINE CHEMICALS

We are an important supplier of larger-scale organic chemicals (60% of sales) and biochemicals (40% of sales) used in development and production by Pharmaceutical, Biotechnology, Diagnostic and High Technology companies.

Over 75% of our Fine Chemicals sales are used in the development and production of products for the treatment and diagnosis of disease. These Life Science applications are becoming even more "biotech" as companies exploit the Human Genome knowledge. As a supplier to this industry, we are unique in our ability to deliver an extensive range of complex organic chemicals plus the widest variety of biochemicals.

The other 25% of our Fine Chemicals sales are for High Technology applications, mainly to industrial chemical customers. In this area, our chemicals are used for a very diverse range of applications in electronics, batteries, specialized dyes and stains and fuel cells, among others.

We have excellent large-scale organic chemical manufacturing sites in the USA, UK, Germany and Switzerland. Our biochemical plants, especially for Buffers and Cell Culture, are located in the USA and UK. All sites have good quality systems.

Overall, in the \$50 billion worldwide Fine Chemical market, over half of which is for Pharmaceutical applications, there are no clear-cut leaders. In fact, we rank in the top 25. So, with a range of products second-to-none, it's a market that presents tremendous opportunities.

DIAGNOSTICS

We are a supplier of reagents and instruments for specific disease testing, mainly focused on clinical chemistry, with special emphasis on cardiac profiling and coagulation.

We supply customers in hospitals, doctors' offices, commercial laboratories and universities with both instruments and reagents for many tests.

The acquisitions in 2000 of First Medical, maker of a point-of-care system to detect heart attacks, and Amelung, a manufacturer of coagulation analyzers, enable us to be a more focused player in the \$20 billion world diagnostics market.

SIGMA-ALDRICH

Life Science and High Technology define the activities of Sigma-Aldrich and its customers. Our aim is simple: to continue to lead in our areas of strength and to achieve leadership in new markets.



We have over 3.5 million catalogs in the marketplace containing a wealth of scientific information.



LIFE SCIENCE AND HIGH TECHNOLOGY LIFE SCIENCE A

LIFE SCIENCE *Sigma-Aldrich is a leading supplier for Life Science applications. Our sales in this sector are \$900 million. We supply the world's largest range of high quality biochemical and organic chemicals on both a small and large scale. These products are used in academic research and the health care industry, particularly by Pharmaceutical and Biotechnology companies.*

RESEARCH

Life Science is a fast-growing area. The momentum in fundamental and Genomic research and the race, especially by Pharmaceutical companies, to discover how genes influence disease, offers tremendous opportunities for Sigma-Aldrich.

At Sigma-Aldrich we are already making a major contribution by supplying all the basic research organic chemicals and biochemicals required to advance knowledge in Life Science. Our sales in this area are about \$650 million.

Our research divisions supply a broad spectrum of products with Scientific Research mainly focused on reagents and Biotechnology on kits. But there is a considerable overlap in activities. Our major sales base is in reagents. But certainly we're rapidly moving into kits because of the large product markets and higher growth potential.

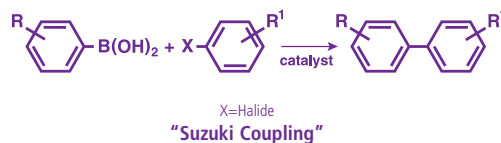
Our Scientific Research division had a good year in 2001 by focusing on the basics – adding new products (over 5,000) and improving service worldwide. We also distributed a new Fluka/Riedel-de Haën catalog containing over 15,000 products which was extremely well received by the research community.

The Biotechnology division met expectations particularly due to strong demand for our Molecular Biology and "synthetic" DNA products. In both divisions, we expanded our sales force to build stronger, more collaborative relationships with our customers. At the same time, we are increasing ties with industrial and academic institutions to add to our over 150 patents and 400 licensing agreements. We

GENOME RESEARCH	
Application	Sigma Products
Cells Grow	Cell Culture
DNA Isolate Identify Clone	Nucleic Acid Purification Kits, Specialty Enzymes, "Synthetic" DNA, S-Gal™
Proteins Express Analyze	Labeling (Flag™) Gene Arrays "Synthetic" DNA

believe these measures will help us attain our ultimate goal of becoming a premier supplier of innovative solutions for Life Science research.

The diversity of biochemistry and organic chemistry capabilities within our Scientific Research division is truly remarkable. It ranges from isolating milligrams of biochemicals from animal or plant tissue to extremely complex organic synthesis. And we make every effort to be at the forefront. In 2001, we produced many new biochemical products. We've also developed a whole range of organic products for "Suzuki Coupling" (we show the reaction scheme for the pleasure of chemists with apologies to others!). Such chemistry is widely used in organic synthesis. The 2001 acquisition of



Isotec makes isotopes (C13, N15, and O18) by cryogenic distillation in columns that reach as far as 600 feet underground.

Isotec makes us the world's largest producer of stable isotopes.

Apart from use in pure research, our products are also used "as is" to help discover new drugs. Pharmaceutical companies often want to quickly obtain and produce as many new chemical compounds as possible. The compounds are then screened for drug activity. Sigma-Aldrich, with over 85,000 products, is the leader in supplying these needs. In addition, our "Rare Chemical Library," with over 125,000 compounds, provides another valuable resource. Newer trends in drug discovery involve combinatorial chemistry and high



**Sigma-Aldrich
Worldwide
R&D**

- 75% USA
- 10% Israel
- 5% Switzerland
- 5% UK
- 5% Other

CELL SIGNALING AND NEUROSCIENCE

ND HIGH TECHNOLOGY

throughput screening techniques that enable scientists to screen even more chemicals. Again, we supply a wide variety of products.

Much of the fundamental Life Science research is increasingly related to Genomics. We now know the sequence of the roughly 3 billion chemical "letters" (A, C, G, T) that make up our human DNA – life's instruction booklet. About 5% of our total DNA makes up the all-important genes. It's a sobering thought that humans with 30,000 genes have not many more than worms or the common mustard weed. In fact, humans are 99.9% the same genetically. And most of the 0.1% difference pre-existed in our African ancestors

have great performance characteristics. Sigma specialty enzymes are used to make (amplify)



Gene Arrays

more DNA, a process which also requires "synthetic" DNA supplied by Sigma-Genosys (we're a major supplier). And, our S-Gal™ enables the ready identification of the

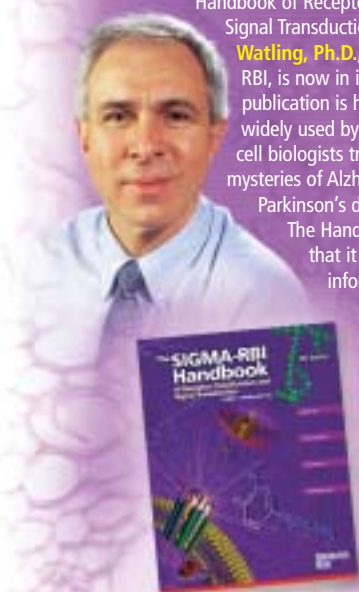
required cloned cells. We're involved in the whole process of Genome research.

Now that the Human Genome has been sequenced, the task becomes figuring out how the genes work and, in particular, what proteins (the building blocks of life) they produce. We are already providing gene arrays for humans/mice/microorganisms and "synthetic" DNA (oligos) to help discover what triggers gene activity. The new area of Proteomics (the study of a cell's protein produced by the genes) again offers tremendous opportunities for our Company. Our Flag™ protein expression and detection system has been a great success. And we've launched unique Protein Purification kits by collaborating with Proteome Systems (Australia) and Shimadzu Biotech (Japan) to stay at the forefront. We have a long history in the protein analysis and characterization areas, including immunochemicals, so we already have a broad range of products and a head start.

However, we should not underestimate the scientific challenges. The unit of life is not the gene but the cell – and we humans have 5 trillion in our bodies! Particularly the brain (over 1 trillion connections) is tremendously complex and we have little understanding of what causes such diseases as Parkinson's or Alzheimer's. But,

Sigma-Aldrich aims to provide research customers with needed products and extensive scientific information about their use. Our Handbook of Receptor Classification and Signal Transduction, edited by Keith J. Watling, Ph.D., Director of Sigma-RBI, is now in its 4th edition. This publication is highly respected and widely used by neuroscientists and cell biologists trying to unravel the mysteries of Alzheimer's and Parkinson's diseases and cancer.

The Handbook is unique in that it contains detailed information on receptors and other closely allied biological entities that transmit messages inside the cell, plus information on the key molecules used to study them – many available from Sigma-RBI.



here again, Sigma-Aldrich plays a leadership role in Cell Signaling and Neuroscience research with sales of \$100 million.

The complexity of the research becomes very evident when one considers the intricate interrelationship of cell signaling (influenced by internal and external events), genes and proteins. It's worth noting embryonic stem cells have the staggering potential power to replace diseased brain and body tissues and even grow distinct new organs.

All these developments, unthinkable a few years ago, present major opportunities for our Company.

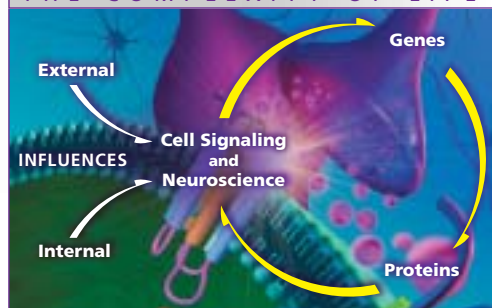
SIGMA-GENOSYS OLIGO LIBRARIES™



100,000 years ago. It's the drive, especially by drug and Biotechnology companies, to uncover these minute differences that will dramatically influence the future diagnosis and treatment of disease. The DNA code of various bacteria, plants and animals is now also being actively studied. This broader understanding of genetics will play a major role in feeding the world by improved breeding of animals and higher yielding plant crops.

A wide variety of Sigma-Aldrich products are specifically designed for pure genome research. Here our sales already exceed \$100 million. We play a major role in providing Cell Culture products to grow the cells from which DNA is extracted. Our new DNA extraction kits

THE COMPLEXITY OF LIFE





LIFE SCIENCE AND HIGH TECHNOLOGY LIFE SCIENCE AND



Lab Facility

Learning Center

The completion at the end of 2001 of our new \$55 million, world-class Life Science and High Technology Center in St. Louis, the largest project in Sigma-Aldrich's history, and increased R&D expenditures, will considerably expand the flow of new and innovative products. The facility is now the proud home of over 100 scientists and we'll be hiring more.

Expansion is also underway at our Sigma-RBI plant in Natick, Massachusetts, which specializes in the products used for Cell Signaling and Neuroscience. We are also ramping up our "synthetic" DNA manufacturing capabilities for our Sigma-Genosys products worldwide.

Clearly, we are at the beginning of a major Life Science adventure. And the Human Genome with its approximately 30,000 genes and the up to a million related proteins, all potential targets for discovery, leaves no shortage of opportunities for Sigma-Aldrich.

Furthermore, we are also collaborating with and licensing technologies from academic and industrial partners throughout the world. And, of course, patents play an increasingly important role. All these activities will make us an even stronger player.

Looking ahead, Life Science research stands on the edge of tremendous discoveries with huge commercial opportunities. Governments and companies will be investing heavily.

The Pharmaceutical industry particularly has

much to gain from the use of Genomic research to develop more effective drugs, including those that will be tailor-made to fit a person's genetic makeup, increasing effectiveness and decreasing side effects. Drugs are the fastest growing segment of the health care budgets, so there is no doubt that Pharmaceutical and Biotechnology companies will continue to invest heavily in this area in search of the next blockbuster drug.

The Diagnostics industry will also experience major developments coming out of the Human Genome and Biotechnology advancements i.e. which genes influence disease. We are well-positioned to meet our customers' needs for their research.

HEALTH CARE

Sigma-Aldrich is a major supplier, via our Fine Chemicals division, of large quantities of our products used by the health care industry.

Pharmaceutical companies account for over 50% of our Fine Chemicals sales. These customers have a single focus, to be first and fastest to market with a steady stream of new drugs. Our strategy is to be the leading supplier of starting materials to help them achieve their goals. Companies seek us out since our experience, expertise and stability in the industry help streamline the process. They recognize that Sigma-Aldrich has the

know-how and quality products to meet their exacting requirements.

In the Pharmaceutical industry, once a good drug candidate has been identified by research, larger quantities are required for toxicity testing. Companies then need a fast, reliable source of the intermediates for the scale-up of the drug. With unsurpassed, varied manufacturing expertise and sourcing capabilities, our Fine Chemicals division is ideally suited to meet these needs. Another of our major advantages is that we have both organic and biochemical manufacturing capabilities. Certain compounds can be made by combining these techniques. And demand is high, as few drugs in development actually survive the rigorous testing required to make it to market. Consequently, there are always new drug candidates in production, all of which present opportunities for Sigma-Aldrich indicated by our excellent USA sales results in 2001.

As a drug enters human clinical trials, even larger quantities are needed and product purity and consistency become even more crucial. With cGMP(current Good Manufacturing Practice)-compliant and FDA-regulated



**Sigma-Aldrich
Worldwide
Production**

- 75% USA
- 5% Israel
- 5% UK
- 5% Germany
- 5% Switzerland
- 5% Other

**ORGANIC CHEMISTRY
SUZUKI COUPLING**

Sigma-Aldrich is the world leader in supplying specialty organic chemicals. Many result from our close relationships with the leaders in the academic community.

Professor **Akira Suzuki**, Kurashiki University of Arts and Science and Professor Emeritus, Hokkaido University, Japan, has developed a way of synthesizing biaryl (aromatic) compounds by the reaction of arylboronic acids with aryl halides commonly referred to as "Suzuki Coupling." This elegant reaction is very widely used in synthetic chemistry.

Having your name associated with a specific reaction is a true accolade in organic chemistry, signifying the importance of the discovery.

Sigma-Aldrich is proud of its ongoing collaboration with Professor Suzuki and delighted to be able to supply the necessary building blocks to enable "Suzuki Coupling."



a very regulated industry.

It's worth noting our latest acquisition, Isotec, supplies isotopes through the Scientific Research division for the non-invasive (Positron Emission Topography) diagnosis of cancer, cardiac and neurological disorders and stomach ulcers.

Sigma-Aldrich supplies a wide range of chemicals and biochemicals. We're also the only supplier of synthetic cholesterol in kilogram quantities in the world. This is a bit ironic as we also help make products to test and lower cholesterol!

Our Diagnostics division is focused in the areas of clinical chemistry, especially for cardiac profiling and coagulation. We provide both instruments and reagents for laboratory testing to hospitals, doctors' and commercial laboratories and universities worldwide.

Here Sigma-Aldrich is a small supplier in a market dominated by very large companies. We made two acquisitions in 2000, both of which adversely affected our profitability in 2001.

AND HIGH TECHNOLOGY



**Biological Buffers,
St. Louis, Mo.**
New 5,000 gallon reactor doubles production capacity.

specific protein is placed in either a plant or animal, which then produces the required human protein. Using this technique,

human proteins are being extracted from plants (corn/tobacco/rice) and animals via their milk (cow/goats) or eggs (chickens). We are already working with companies in this area and commercialization is only a question of time. With lots of experience in such extractions ("grind and find"), this is just another potential opportunity for Sigma-Aldrich.

We are also a major supplier of Cell Culture media and chemical buffers for the production of both human and animal vaccines. Sales are growing very nicely.

Our large-scale Cell Culture facility in St. Louis, completed in 1998, is among the best in the world. Demand for products from our Cell Culture plant in Scotland has also been high and we are adding capacity



**Cell Culture production,
St. Louis, Mo.** FDA-registered and cGMP-compliant plant.

with a \$7 million expansion. We are also a leading supplier of buffers (to control acidity/alkalinity) used in nearly every Biotechnology application. It's our largest volume product line – we make many hundreds of tons every year.

We have major sales to most of the world's leading Diagnostic producers of constituents for their reagents. Again, our quality systems

and FDA and ISO-9001 certified cGMP manufacturing facilities are key to obtaining business, as Diagnostics is



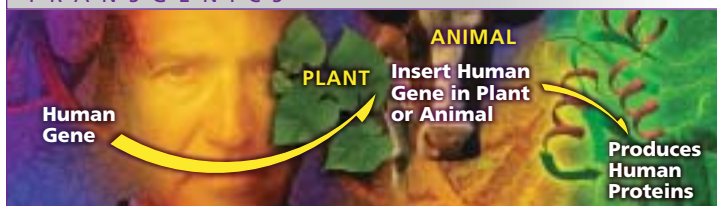
**cGMP KiloLabs,
Gillingham, UK**
The segregated labs enable small-scale custom synthesis and ensure smooth technology transfer as projects progress through scale up.

manufacturing plants located in St. Louis, Missouri; Sheboygan, Wisconsin; Gillingham, United Kingdom; and Buchs, Switzerland; Sigma-Aldrich can provide increased quantities of products used in this phase of the drug development process to customers anywhere in the world.

When a drug makes it to market, Sigma-Aldrich is well-positioned to supply the key intermediates (especially those involving very complex synthesis) or in some cases even the drug itself. We do, in fact, manufacture several drugs, some of which are used in the treatment of rare cancers.

Looking ahead, Biotechnology production of proteins for Pharmaceutical applications will require larger scale fermentation and, in many cases, for economic reasons, the use of transgenics. Here a human gene that "produces" a

TRANSGENICS





LIFE SCIENCE AND HIGH TECHNOLOGY LIFE SCIENCE AND

First Medical (USA) is an innovator in the fast-growth, cardiac point-of-care market. Sales were well below expectations.

The sales of Amelung (Germany) coagulation instruments and reagents developed satisfactorily.

Health care will be a growing market in the future and we are well-positioned, particularly in Fine Chemicals, with our production and sourcing capabilities.

LIFE SCIENCE AND HIGH TECHNOLOGY — PRODUCTION AND SOURCING

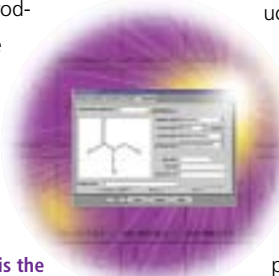
Sigma-Aldrich produces and supplies more biochemicals and organic chemicals than any other company in the world. Of our 85,000 products, 40,000 (55% of sales) are produced and 45,000 (45% of sales) purchased.

We have excellent major organic chemical and biochemical manufacturing plants at 29 locations and R&D facilities and quality control laboratories in 8 countries (Australia, Canada, Germany, Israel, Japan, Switzerland, UK and USA). Many plants are multipurpose and make products for several divisions. Regarding new plants, we will continue to add facilities that clearly focus on Life Science and High Technology.

Purchasing 45,000 products is no minor task. And here, we have the best sourcing capabilities in the world. Our "CHESS" database, developed in-house, with over 250,000 products and 10,000 suppliers, is an invaluable tool. It also helps us find products not listed by us for our Fine Chemicals division customers.

Handling so many products requires close collaboration between our purchasing, production and analytical departments worldwide.

CHESS is the world's largest chemical sourcing database.



HIGH TECHNOLOGY Sigma-Aldrich is a major supplier for High Technology chemical applications. Our sales in this sector are \$300 million. We supply the world's widest range of very pure organic and inorganic chemicals and a wide variety of analytical reagents and products on both a small and large scale. These products are used in research and industry, spanning the entire \$1.5 trillion worldwide Chemical and Allied products industries.

RESEARCH

A wide range of basic, applied and development research and testing is carried out using products supplied mainly by our Scientific Research division with sales of \$250 million. We serve such diverse areas as organic, inorganic, macromolecular, physical, analytical and applied chemistry.

Our Aldrich, Fluka, Riedel-de Haën and Supelco brands are found in laboratories worldwide. With these brands, we are clearly the dominant supplier of specialty research organic chemicals. The quality of these products sets the standard for the industry! And we continue to add new products aggressively, further widening the gap with our competition.

Aldrich also supplies the highest purity inorganic chemicals. Using proprietary technology, we routinely produce products 99.999% pure, such as anhydrous metal halides. And, we even supply products that are greater than 99.9999%, which approaches the limit of ascertainable purity. Such materials are extremely important in material science research, especially in the electronics industry.

Combining organic molecules with certain inorganic elements results in a class of products known as organometallics. Here again, we lead the world with our in-house developed technology.

In analytical applications, our Fluka and Riedel-de Haën brands comprise a complete range of laboratory essentials and specialties. Fluka is a leader in providing products for a variety of analyti-



Our high purity inorganic chemicals serve applications in material science.

cal applications. And, Riedel-de Haën is the recognized leader with its trademarked HYDRANAL® reagents used to determine water content in products ranging from food to oil. We continue to add new and

improved innovative products. Sigma-Aldrich also supplies a wide range of standards, including those for pesticide detection, used in environmental testing.

Apart from chemicals, our Supelco brand offers chromatography columns and



Chemical & Allied Products Industry
\$1.5 Trillion

- TECHNOLOGY**
- Soaps/Cosmetics
 - Industrial Organic
 - Plastics
 - Industrial Inorganics
 - Paints
 - Other
- LIFE SCIENCE**
- Pharmaceuticals/Biotechnology/Diagnostics
 - Agricultural



BIOCHEMICALS BY FERMENTATION

ND HIGH TECHNOLOGY

accessories needed for environmental testing as well as applications in the petroleum, food and cosmetic industries. Obviously, it's a very wide range of research products that we supply in the area of High Technology.

INDUSTRY

The use of our products in research and development often leads to industrial customer requirements for larger quantities. Here our sales are almost \$50 million. Customers turn to us because of our large, unequalled range of both manufactured and purchased products.

Sigma-Aldrich is the world leader in moisture analysis. Our patented HYDRANAL® reagents are used in laboratories throughout the world and are recognized for their accuracy and ease of use.



Sigma-Aldrich's greatest advantage is vast manufacturing experience and knowledge. When a customer comes to us for a product, it is likely that we have either made it before or have made something similar. We are able to meet these demands with our excellent, large-scale, multipurpose manufacturing plants in the USA and Europe.

Our largest USA industrial organic production site is located in Sheboygan, Wisconsin (five plants on a 500-acre site) where we specialize in air-sensitive reagents and high purity organometallics. The latest plant (cost \$28 million) brought on stream in 2000, operates at very low temperatures and had an extremely successful year in 2001, as we made substantial inroads into the electronics industry. Very thin deposits of our organometallic

compounds (incidentally, very difficult to manufacture) are used to produce flat-screen electronic displays, anti-reflective coatings and in the manufacture of computer chips.

Hydroboration chemistry (adding hydrogen to other organic materials) is also carried out at our Sheboygan facility. In this field, Aldrich is the world leader, holding patents of H.C. Brown (a Purdue University professor emeritus and 1979 Nobel Prize winner in chemistry), with whom we have a very productive ongoing collaboration. (And, we take this opportunity to wish him a very happy forthcoming 90th birthday on May 22nd, 2002.)

We also provide specialized packaging for air-sensitive products. This packaging is used for product lines where maintaining the integrity of the chemicals is essential. We use a wide range of containers designed to meet customers' specific needs.

Our largest production site in Europe at Fluka (Buchs, Switzerland) does a variety of very complex organic chemistry. In certain areas we're approaching capacity and to relieve the strain, we're currently in the midst of a \$6 million expansion.

Our sourcing capabilities are also very highly regarded by our industrial customers.

Sigma-Aldrich is a supplier to nearly every area of the Chemical and Allied products industry. And, the applications are wide and numerous.



Reactors up to 2,000 gallons at our Sheboygan, Wisconsin plant produce organic chemicals for the Pharmaceutical, agrochemical and material science industries.

Sigma-Aldrich manufactures biochemicals by a wide variety of complex processes.

In Jerusalem, Israel our expertise is growing microorganisms in specially designed tanks (fermentors) to create over 500 products for Life Science research. Key to their production is a one-of-a-kind "strain bank" where over 1,000 types of microorganisms are maintained by a highly trained group of scientists led by

Yael Asscher, Ph.D., Director of R&D. Such microorganisms require very careful nurturing to ensure they "produce" when called upon.

As world leaders in fermentation products, Asscher and her group are developing products used in general Life Science research as well as by Pharmaceutical and Biotechnology companies.



We're a major provider of specialty custom dyes (complex organic chemicals) and blends for a wide variety of printing applications.

Furthermore, we also supply the widest range of organic chemicals to the Flavor and Fragrances industry. Obviously quality is of extreme importance in this human use application.

Another important use for our products is in the production of batteries. Here we supply electrolyte solutions (ultra high purity, complex proprietary mixtures of inorganic and organometallic compounds in organic solutions).

The large-scale industrial applications of our products are clearly very diverse and involve complex chemistry. Most are in the fast-growing High Technology area. This is our clear focus as we make future investments in plants.

Unrivaled scientific knowledge is the basis of our leadership in Life Science and High Technology.



SERVICE SERVICE SERVICE SERVICE SERVICE SERVICE

SERVICE *Sigma-Aldrich has an obsession with servicing our customers. We strive to provide service that's second-to-none in all parts of the world.*

Our broad range of Life Science and High Technology products, the basis of our business, is fundamental to our success. But equally important is our unending commitment to serving our customers worldwide.

We aim simply to provide customers with the broadest range of high quality products backed by the best possible service.

During 2001, new product additions, both purchased and produced in-house, were again very aggressive. We added over 7,000 products including new stable isotopes from our acquisition of Isotec. Worldwide, we continued to invest in the latest analytical equipment. Our well-equipped laboratories ensure our reputation for quality.

Customers can access Sigma-Aldrich's 85,000 products through our various catalogs. We have over 3.5 million catalogs in the marketplace that contain a wealth of information. Customers can also find our products through a wide assortment of specialty literature and through the Internet. The amount of scientific information we offer is unequalled by any other company.

Meeting our customers' product needs requires teamwork across departments and geographic boundaries. Here it is worth noting the geographic breakdown of our sales:

50% USA, 30% Europe and 20% International. The aim is to provide top-notch service to all parts of the world through offices and facilities located in 33 countries, including 15 worldwide distribution centers. We pride ourselves, of course, on our ability to ship most orders from stock the same day they are received. And, we process over 15,000 orders daily. If a customer ordered 100 different products, over 95 would be on the shelf.

And, every effort is made to keep back – orders to an absolute minimum. We understand that our customers' research cannot wait, and

ANALYTICAL LABORATORY



State-of-the-art analytical equipment provides fast quality control, key to moving products from development to production.

warehouse facilities are scheduled for completion in 2002.

Service to all our international warehouses has been improved by reducing the cycle times from purchase order to product delivery

using process improvement studies. This is a major corporate initiative and involves our employees doing a job that benefits the whole Company and not just their particular division or country.

We are also implementing joint ventures to provide faster delivery of the high volume chemicals (generally heavier and

SIGMA - ALDRICH KOREA



New facilities, like this \$7 million warehouse in Korea, ensure rapid delivery of Life Science and High Technology products to customers.

they need products "preferably yesterday." To ensure excellent service, we continue to make major investments in production, distribution and administrative support. Our warehouses in Milwaukee, USA and Schnelldorf, Germany

now have state-of-the-art, automated equipment that operates essentially paperless. Warehouse capabilities are being increased in Korea and Japan, two of our fastest-growing markets. Our new \$7 million facility in Korea opened in June, 2001 and quadrupled capacity. In Japan, which will soon become Sigma-Aldrich's second largest market in sales, expanded

COUNTRIES ON SAP

2000 Austria, Belgium, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Puerto Rico, Spain, Sweden, USA



2001 Australia, Ireland, Japan, South Africa, UK

2002 Canada, Finland, India, Israel, Korea, Malaysia, Singapore, Switzerland



**Sigma-Aldrich
Worldwide
Sales**

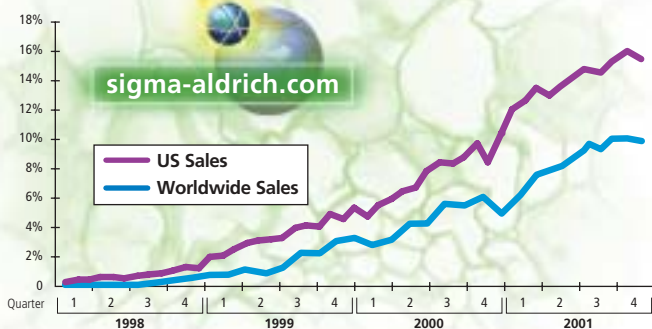
- <30% USA
- >30% Europe
- 20% International (Excluding Europe)

CE SERVICE SERVICE

more expensive to ship). In the USA, with Gallade Chemical in California, we have local stocking and in Japan, Katayama Chemicals provides us the packaged products. Both of these initiatives have been very successful.

While our offices are scattered geographically, our Company, as a whole, has never been closer from a systems standpoint. The \$55 million investment in SAP computer software in recent years gives us a unified

INTERNET SALES %



approach to doing business. And we continue to successfully implement SAP worldwide. Almost 90% of orders globally are now processed on our SAP system.

With this common system, our operations are becoming truly integrated, making product more accessible on a global scale. We can now drop-ship product to customers from any warehouse in our distribution network. The benefits are two-fold, allowing us to decrease backorders and reduce excess inventory.

Certainly SAP has allowed us to take a major step in becoming a leading edge company. Within the next few years, we will be as state-of-the-art as any billion-dollar company with a worldwide presence. We are also one of a handful of companies that have truly integrated SAP with our Web site –

sigma-aldrich.com. Customers can search for products, check pricing and availability and place orders that print out directly in our distribution centers. The process is completely automated. Our Web site continues to win awards. In fact, *Smart Business* magazine ranked us number 20 in 2001 out of all the companies in the USA. Sales have been doubling nearly every year and were almost \$75 million in 2001.

Research worldwide sales are now approaching 10% (16% in the USA) through this channel. Over 750,000 users access our site monthly. It's worth noting each user session generates on average about \$10 in sales!

The Internet also plays an important role in how we provide customers with "on-line" technical information. Here our Web site leads the industry with a wealth of information that we continue to expand –

so far we have just over one-third of our available information on the web. We have also created Web site extensions with local language and flavor. And many more are planned. Our worldwide Technical Service departments handle nearly a million phone calls yearly and an increasing number of e-mails. So, not surprisingly, we've earned a reputation as the company to turn to for superior technical service.

Through strategic alliances with leading edge companies, Sigma-Aldrich is also fast becoming a leader in business-to-business E-commerce as well. Customers, including many well-known large companies and universities are using Sigma-Aldrich for

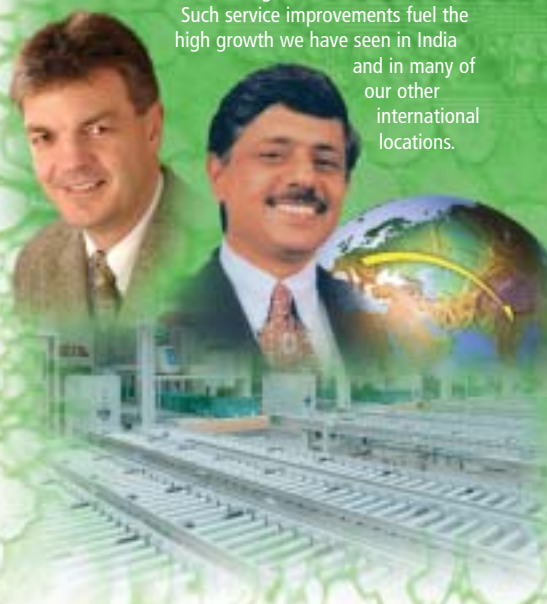
OBSESSION WITH SERVICE

RESEARCH PRODUCTS GROWING SALES

Sigma-Aldrich endeavors to give its customers worldwide the best possible service. And cycle time, the time it takes to ship a product from one of our main brand warehouses to a subsidiary location, is now at an all-time Company low.

Our country Manager in India, **Raja Ram**, and European distribution Director, **Peter Schule**, collaborated to transfer India's fulfillment from five different manufacturing sites to our central distribution center in Schnellendorf, Germany. This change cut cycle time in half (from 25 days to 10 days). Our customers were delighted.

Such service improvements fuel the high growth we have seen in India and in many of our other international locations.

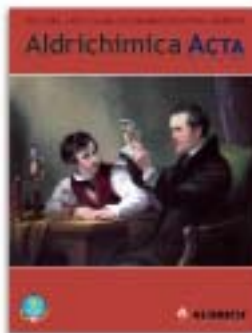


more efficient methods of on-line purchasing and inventory management.

The best way we serve our customers, of course, is through our 6,500 dedicated employees who embrace service every day with an obsession. Service is what built our Company and ensures our competitive edge. We're certainly making the investments to

remain competitive. But it's our collective commitment to serving our customers that makes the difference. It's an understatement to say Sigma-Aldrich has an obsession with service to our customers in Life Science and High Technology.

Our ACTA publication is a forum for the frontiers of organic chemistry.





PROCESS IMPROVEMENT PROCESS IMPROVEMENT PRO

PROCESS IMPROVEMENT *Sigma-Aldrich has a passion for process improvement. Our aims are to look for new and better ways to serve our customers and substantially reduce operating costs.*

Process improvement, over the past five years, has become an integral part of our culture and a tremendous success story. Above all, we're looking for improved ways to serve our customers and consequently increase the demand for our Life Science and High Technology products. Furthermore, by developing more efficient processes, we can also reduce costs. This is an area where everyone in the Company worldwide can contribute to improving our performance.

Such improvements are often a matter of doing the obvious. And no savings is too small to be addressed. At Sigma-Aldrich, we aim to spend the Company's money as carefully as we would our own!

In comparison, our "High Hanging Fruit" projects require fundamental changes that produce substantial improvements. These projects often require teamwork across business divisions and country boundaries. In many cases the goal is often to transfer knowledge gained

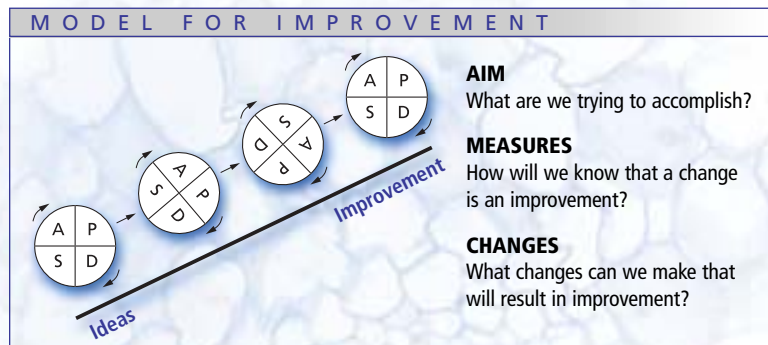
at one location to another.

The model we're using to implement major change is one of "trial and learning", the principles of which are outlined in *The Improvement*



Using this approach, our initiatives have already resulted in substantial accumulated savings of about \$25 million. If we use our formula \$1 saved = \$5 sales, that is equivalent to roughly sales of \$125 million. These savings have made it possible for us to make major investments in new systems (SAP computer software and the Internet), additional R&D facilities and researchers and an expanded sales and marketing force.

Initially our key improvements were in operations, but now there are PDSA's going in almost all departments. We've launched major worldwide initiatives in production, purchasing, packaging, labeling and distribution, all of which will help us improve service and better manage inventory. Regarding production, our First Pass initiative (reduce batch failures) has met with great success. This certainly helps our profitability. We're



Well, what is process improvement? It's a methodology for testing and implementing changes - changes that will result in improvement. As most of us know, from our business or private life, not all change is an improvement. So it's important to make the right changes.

At its simplest level, "Low Hanging Fruit," we're talking about using common sense ways to save money that produce immediate results.

Guide, co-authored by our long-time consultant and advisor Tom Nolan, the 2000 recipient of the prestigious Deming Medal from the American Society for Quality. First we define our aim - what we are trying to accomplish? Next we determine measures - how will we know that a change is an improvement? And finally we consider possible changes that will result in an improvement. Then we test with a PDSA cycle (Plan, Do, Study, Act).

Sigma-Aldrich employee Louise DeMay realized the exact paper funnel her dentist asked her to use could serve as a disposable tool for chemical weighing. The funnels eliminate the need to clean and dry a plastic funnel for reuse - a low hanging fruit idea that's a real time saver.



**Sigma-Aldrich
Worldwide
Process
Improvement**

Aim
Measures
Changes

**FINE CHEMICALS
INCREASING SALES**

Sigma-Aldrich's employees worldwide are committed to process improvement. **Lourdes Weltzien, Ph.D.**, Vice President of the Fine Chemicals division, concluded from USA customer surveys that improvement in service would result in considerably higher sales. Consequently, Weltzien implemented a PDSA (Plan, Do, Study, Act). The first step was to clarify the aim and measures throughout the organization and challenge individuals to look for "low hanging fruit" ways to improve performance. Within a few months, a notable change had already occurred. Teams were then created to analyze reasons for orders being late and their underlying causes. This pinpointed where the best opportunities for change existed. What developed was a unified approach to solving problems that has accelerated to the point where Sigma-Aldrich Fine Chemicals has one of the best on-time delivery records in the industry (85%).

2001 turned out to be a great sales year in the USA. Weltzien, currently located in Germany, is now leading a similar project to increase Fine Chemical sales in Europe.



sales which grew twice as fast as in the USA.

All these major projects will help us to reduce our level of inventory. There were also numerous local initiatives which we expect to further increase as we intensify our efforts.

Process improvement has already changed the way we do business at Sigma-Aldrich and will play an even more important role in the future. Clearly, process improvement takes out tremendous costs, improves our service and above all helps maintain our leadership in Life Science and High Technology.

PROCESS IMPROVEMENT

also using an even more sophisticated statistical approach to determine the optimum composition of our Cell Culture products i.e.

times reduced and the percentage of orders shipped on time increased, but lead times quoted to customers were also reduced from five

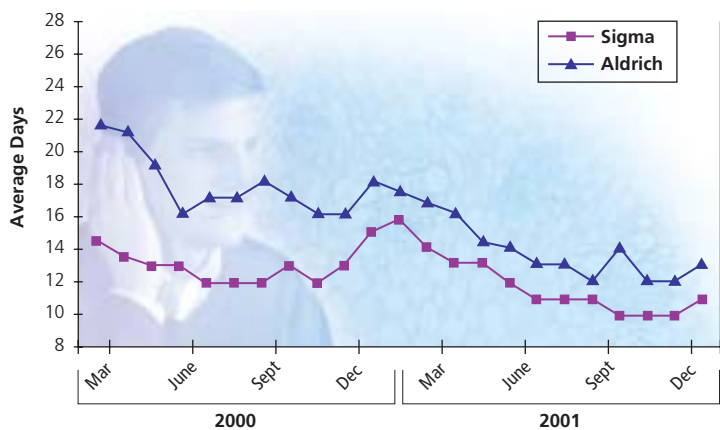
days to three days. No doubt this accounts for part of the exceptional 2001 Fine Chemicals sales growth in 2001. And, there's still plenty of room for further improvement.

The worldwide Label on Demand project will help Sigma-Aldrich improve customer service, reduce backorders, increase plant utilization and control inventory because all product labels will be available wherever

Sigma-Aldrich material is located.

Distribution continues to be a focus for process improvement. And, in 2001, we considerably reduced distribution cycle times to our subsidiaries and customers outside the USA. This certainly helped our international

CYCLE TIME FROM BRAND LOCATIONS TO SUBSIDIARIES



Cycle time refers to the time it takes to ship product from one of our brand warehouses to a subsidiary location. After averaging 20 days in 2000, our brands dramatically decreased cycle time in 2001 by implementing a number of process improvements. Our customers appreciate the improved service.

to give the best cell growth and to design R&D projects.

Bearing in mind that we purchase over \$250 million in chemicals and supplies every year, the potential here for cost savings is enormous. And, we intend to get them. This is in fact a very complex project for we have so many products and purchasing in so many countries.

Packaging using "work cell" concepts coupled with better scheduling has not only increased productivity but has substantially reduced cycle times, resulting in the lowest levels of backorders worldwide in recent history. This really helps research sales. Our Fine Chemicals division has produced equally impressive packaging results. Not only were cycle

MAJOR FOCUS AREAS



- Production
- Purchasing
- Packaging
- Labels
- Distribution

OFFICERS



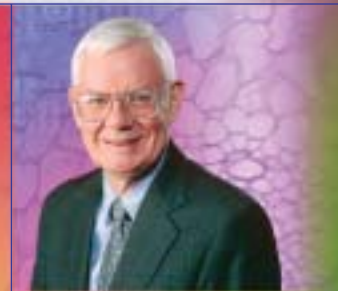
Terry Colvin Vice President Human Resources	Larry Blazevich Vice President Information Systems	Rod Kelley Vice President Safety and Compliance	Kirk Richter Treasurer	Bob Monaghan President Diagnostics	Frank Wicks President Scientific Research	Dave Julien President Biotechnology
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Karen Miller Controller	Mike Hogan Chief Administrative Officer, Chief Financial Officer and Secretary	David R. Harvey Chairman, President and Chief Executive Officer	Jai Nagarkatti President Fine Chemicals	Jim Meteere Vice President Quality Systems
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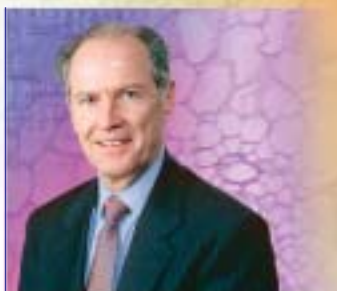
BOARD OF DIRECTORS



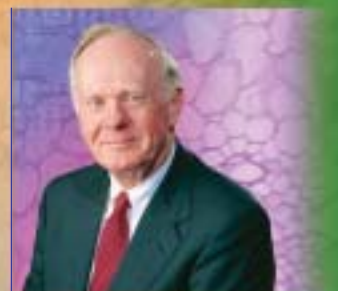
Nina V. Fedoroff
Director, Life Sciences Consortium, Pennsylvania State University, Member, National Science Board



David R. Harvey
Chairman, President and Chief Executive Officer, Sigma-Aldrich Corporation



W. Lee McCollum
Senior Vice President and Chief Financial Officer, S.C. Johnson and Son, Inc.



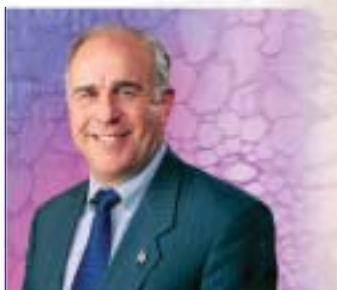
William C. O'Neil, Jr.
Private Investor



J. Pedro Reinhard
Executive Vice President and Chief Financial Officer, Dow Chemical Company



Jerome W. Sandweiss
Former Of Counsel, Blumenfeld, Kaplan & Sandweiss, P.C.



D. Dean Spatz
Chairman and Chief Executive Officer, Osmonics, Inc.



Barrett Toan
Chairman, President and Chief Executive Officer, Express Scripts, Inc.

Corporate Offices

Sigma-Aldrich Corporation
3050 Spruce Street, St. Louis, Missouri 63103
800-521-8956, Fax: 314-286-7874
e-mail: sig-ald@sial.com, Web site: sigma-aldrich.com

Transfer Agent

ComputerShare, Chicago, Illinois,
312-588-4991

Annual Meeting

Date: May 7, 2002
Time: 11:00 a.m.
Place: Sigma-Aldrich Life Science and High Technology Center
2909 Laclède Ave.
St. Louis, MO 63103

General Information

Shares traded on NASDAQ National Market System
Trading symbol: SIAL
Options traded on the Chicago Board Options Exchange

10-K

A copy of the Company's Form 10-K annual report, as filed with the Securities and Exchange Commission, may be obtained without charge by writing to the Secretary, Sigma-Aldrich Corporation, P.O. Box 14508, St. Louis, Missouri 63178