Aldrichimica Acta

Volume 17, Number 1, 1984

"Our Chemist-Collector Approaches Sixty"

chemists helping chemists in research & industry
aldrich chemical co.

Aldrichimica Acta

Volume 17, Number 1, 1984
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About Our Cover:

This portrait of Adriaen Brouwer by the Flemish artist Joos van Craesbeeck (1605 - 1662) was the first painting acquired by our chemist-collector, Dr. Alfred Bader, and we know it has remained one of his favorites. Consequently, we considered it appropriate for the cover of this issue which features the article "Our Chemist-Collector Approaches Sixty." Furthermore, nothing could better depict the surprise of our chemist-collector upon seeing this *Aldrichimica Acta.*

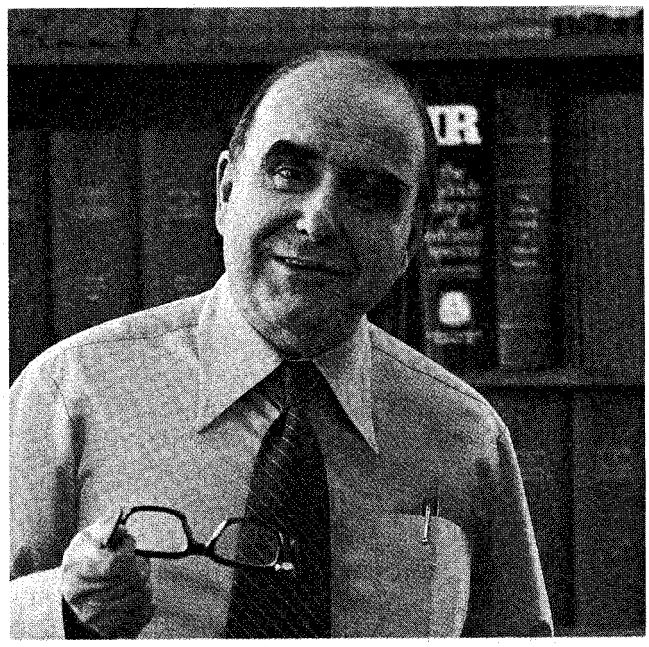
As our chemist-collector approaches sixty, all his friends and colleagues wish him many more productive years in chemistry and art.

Are you interested in our *Acta* covers? Selections from the Bader Collection, with 30 duotone reproductions, many of previous *Acta* covers, and an introduction by Professor Wolfgang Stechow is available to all chemist art-lovers.

Six beautiful 11 x 14-in., full-color reproductions of paintings on our catalog covers are available, ready for framing, to add beauty to your laboratory.

Many of the early issues of the *Aldrichimica Acta* have become very rare. Please do not throw your issues away. In time, we believe that complete sets will become valuable, and — if you do not want to keep them — there probably are chemists near you who would be interested.

"OUR CHEMIST-COLLECTOR" APPROACHES SIXTY



Dr. Alfred Bader

In 1924, Vienna, so recently the flamboyant capital of the Austrian Hungarian Empire and echoing the strains of the waltzes of Johann Strauss, was hardly recovering from World War I and the effect of the Peace Treaty. The lively, bustling, self-indulgent, high-living Viennese had been forced to change their lifestyle.

This was the world into which our "Chemist-Collector," Chairman of Sigma-Aldrich and Founder of Aldrich, Dr. Alfred Robert Bader, was born. His mother was a Hungarian of noble family. His father, son of the Chief Engineer to Ferdinand de Lesseps, builder of the Suez Canal, had died shortly after his birth, and he was brought up by his dearly loved aunt and uncle. From early childhood on, he was exposed to art in his own home and to the Old Masters at the Kunsthistorisches Museum in Vienna. It should not have been totally surprising, therefore, when at age ten he used money given to him for another purpose to acquire an Old Master drawing at an auction.

By the mid-thirties, Austria was heading towards the Anschluss with Germany. When possible, Jewish youngsters were sent off to presumably friendlier and safer environments. In 1938, saying goodbye to his surrogate parents for the last time, Alfred Bader journeyed to England, a move which may well have saved him from death at the hands of the Nazis.

At fourteen, Alfred found himself at school in Brighton, Southern England, and, despite a strange language and an unfamiliar lifestyle, he was an exceptional student, whose qualities were soon recognized. He received a modest grant (supplemented by the occasional deal in stamps) to study chemistry at the Brighton Technical College. During this period his interest in art continued, and he became immersed in the study of the Bible. This combination of chemistry, art and Bible became his lifelong passion. Even at this early stage, he had begun to shape a future as scientist, businessman and collector.

This relatively settled interval in his life was soon to be disturbed by the German army advancing to the beaches of Northern France, placing England in danger. Fearful of a threatened invasion, Churchill considered that refugees from Europe could be a potential threat to the security of Great Britain. He then made his "Collar The Lot" decision to intern not only potential Nazi-sympathizers but also a great many refugees. Most were interned on the Isle of Man off Britain, but many were shipped overseas. In 1940, Alfred found himself part of a shipload of German Jewish refugees destined for a prisoner-of-war camp on the Richelieu River near Montreal, Canada. However, finding himself interned with able and learned tutors, Alfred put this most difficult period to good use, furthering his learning of the Bible and science.

Being hungry for any kind of news, he, like others in the camp, read through every line of any available newspaper. In doing so, he ran across the obituary of an elderly lady who had been his benefactor in England.

Editor's Note: Since our Chemist-Collector would never have permitted us to devote space in the *Aldrichimica Acta* to him, the references to his early days necessarily depended upon recollections of reminiscenses by him to friends and associates and could not be checked for accuracy with the "source." Hence, for any inaccuracies in history, our apologies.

The item listed her son of Montreal among her survivors. Alfred's note of condolence led to a lifelong close association with his second surrogate family, the Wolf family of Montreal. Mr. Wolf helped to arrange for Alfred's parole from the camp in November, 1941, and for his admission to Queen's University in Kingston, Ontario, notwithstanding the absence of standard, formal admission requirements and the fact that the term was well along. His gratitude to Queen's University for this special accommodation is manifested by his service on its Board of Trustees and his contributing to a major collection of Old Masters in its Agnes Etherington Art Centre.

While at Queen's, Alfred overcame the obstacles of English as a second language so well that he entered and won the McColloch speaking contest and the sorely needed prize money associated with it. Thereafter, at the urging of his professors, he became a member of the University's championship debate team. He also served as president of the Hillel House and in other campus leadership positions while earning a B.Sc. degree in Chemical Engineering (1945), a B.A. in History (1946) and a M.S. (1947). During the summer and after graduation, Alfred worked for the Murphy Paint Company of Montreal. Here he generally spent a couple of days visiting customers to discover their needs, then as quickly as possible formulated a suitable paint. Sales soon doubled. Thus Alfred was first shocked to find his job terminated until he realized the company simply wished him to further his education and was prepared to assist with funds.

Alfred attended Harvard which provided him with years of stimulation and excitement. Of course, Alfred began to pursue studies in two distinct disciplines, art history competing with research in chemistry. The contest between the two became concern enough for one chemistry professor to declare anxiously, "Alfred, you haven't made up your mind whether you want to be a chemist or an art historian." Alfred decided perhaps reluctantly for chemistry. As a doctoral research student of the famous Louis Fieser[1], he received great inspiration. Upon receiving his doctorate, Alfred intended to return to his former employer, but in the meantime, the Murphy Paint Company had been sold to Pittsburg Plate Glass, and they placed him in Milwaukee.

There, he was employed as a Research Chemist and later became Organic Group Leader in the paint division. Alfred found it wasteful of research chemists' time and talent to prepare high-purity intermediate compounds necessary to get on with the heart of the research itself. At that time, the only significant U.S. source for such products was a division of Eastman Kodak Company. He suggested to his superior to form a division to augment the list of high-quality intermediates available to research chemists. The proposal was rejected.

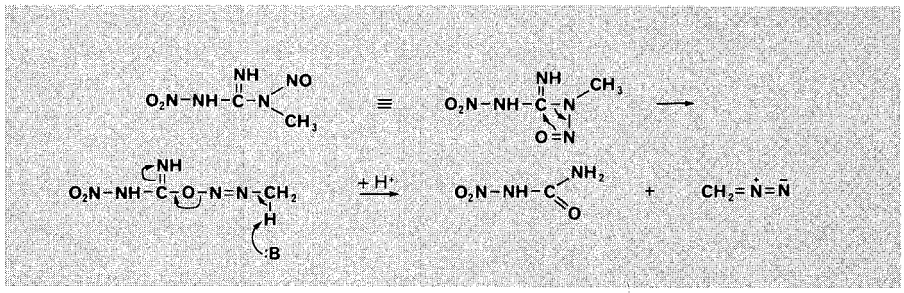
He then requested and received permission to try it on his own during his spare time. In 1951, he rented a $25.00-a-month garage, acquired some basic equipment and made MNNG, 1-methyl-3-nitro-1-nitrosoguanidine which was used as a starting material for diazomethane, and a few other compounds. Not wishing to personalize the company by using his own name he suggested to the attorney preparing the articles of incorporation that they toss a coin between "Daniels" and "Aldrich," the names of his own and the attorney's fiancée. The coin came up "Aldrich."

In 1954, Pittsburgh Glass decided to move its research division to Springdale, Pennsylvania. Although sales from his personal venture were only $15,000 per year, Alfred decided to resign his position and stay in Milwaukee, a city he had come to like. The development of Aldrich now became his full-time occupation.

Alfred began Aldrich with the idea of offering a list of organic chemicals other than those available from Eastman. But, he soon recognized the necessity for developing a complete line of organic chemicals for research. This required the establishment of a network of reliable suppliers to augment Aldrich's then limited production facilities. He also sought close ties with research chemists to enable him to know and even anticipate their needs. Accordingly, he established and developed friendships and working relationships with chemists throughout the world, giving them valuable assistance and promptly responding to their requests and suggestions. Over the years, he has personally helped many able and deserving chemists at universities with research grants underwriting their research, and helping some of them on their way to becoming leading chemists of their time.

While building Aldrich into the world's foremost supplier of high-quality fine organic chemicals, Alfred has been the first to acknowledge his debt to the countless dedicated employees, many of whom are still with the company. But his employees in turn credited him with the vision, drive and readiness to make the pragmatic decisions necessary for such an achievement.

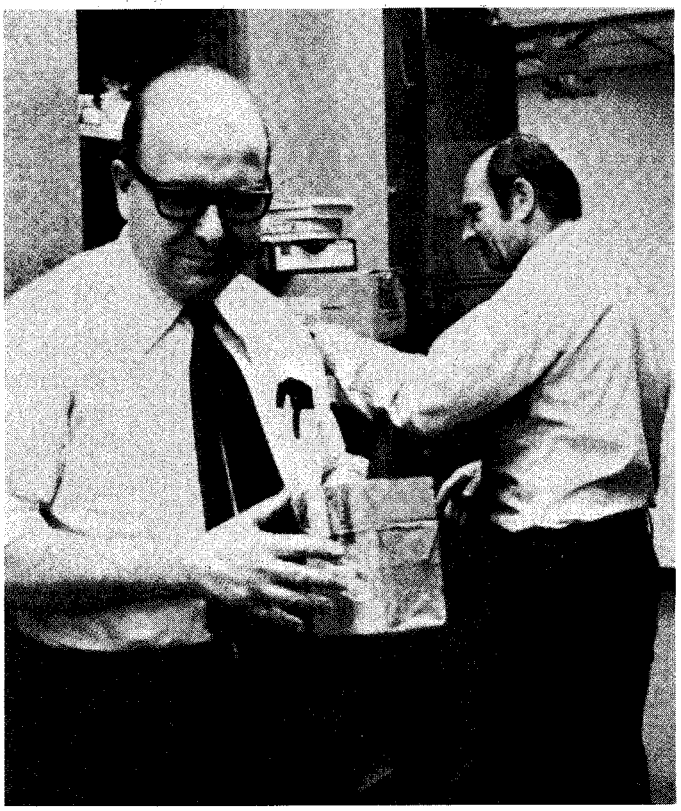
Alfred's enthusiasm and creativity attracted other able chemists who began to cast their lot with Aldrich. Among these was the late John Biel, whose contributions to medicinal chemistry at Lakeside Laboratories, had made him an ideal Director of



Diazomethane production from MNNG

Research at Aldrich. This made possible the carrying on of contract work for governmental and pharmaceutical clients with the natural fall-out of both new products and greater insight into the needs of the research chemist.

A catalog evolved which proved to be not only a valuable sales tool but also an indispensable handbook of fine chemicals. This catalog, readily recognized by the Old Master paintings from Alfred's collection reproduced on the front cover with descriptions by "Our Chemist-Collector," soon became Aldrich's hallmark. The 1984-1985 edition will list over 16,000 products.



Alfred Bader and Professor Gilbert Stork in search of rare chemicals at Columbia University

In 1967 Alfred launched the *Aldrichimica Acta* to promote Aldrich products and also to disseminate chemical review articles by leading chemists. Today, the *Acta* is perhaps more attentively read than many a scientific journal, and there is no shortage of able prospective authors. With his customary attention to detail, Alfred still zealously guards the quality of the *Acta* which is published quarterly, although for this issue he cannot be held responsible.

Another unique development by Aldrich was the formation of the ABC (Alfred Bader Chemical) Division of Rare Chemicals. This certainly stemmed from Alfred's passion for collecting, in this case, chemicals. But again, he saw the possibilities of acquiring rare and difficult-to-obtain chemicals from universities and laboratories around the world and making them available to others in the research community. Today, over 23,000 such products are offered. The chemicals are featured now in the "Aldrich Microfiche Library of Chemical Indices."

Even in the early days, Alfred revealed that looking for a number of compounds from Aldrich's regular and ABC inventory (over 37,000 chemicals in 1984) containing a particular structural fragment was no easy task. Thus, Aldrich developed a computer-search service capable of locating the required compounds. This unique, free service is now used by scientists worldwide.

Of course, emphasis was placed on supplying quality products. From the infrared spectra taken in the laboratory during routine analyses, there developed "The Aldrich Library of Infrared Spectra" in 1970. Alfred rightly surmised that such a book of quality spectra would be welcomed by the research community. This book, currently in its third edition, and its subsequent companion, "The Aldrich Library of NMR Spectra," have established Aldrich compounds as the standard reference.

In the leading scientific journals, Aldrich advertisements were soon a regular feature on the back outside cover. The emphasis was generally on promoting new products, often those suggested by Alfred's friends and colleagues at universities.

Aldrichimica Acta Preview Issue 1967

These varied developments helped establish Aldrich as a major supplier of research chemicals. However, Alfred soon recognized the potential for supplying larger quantities and enlarged Aldrich's production capabilities to become an important source of bulk specialty chemicals. As the business expanded, so did the need for space. After intermediate moves, Aldrich acquired its present St. Paul Avenue headquarters in 1967.

Looking beyond the confines of the United States, Alfred, during the course of his travels to Europe, found a most useful German supplier - later to become known as EGA Chemie. In England, he persuaded an old friend of his war-time sojourn there, to assist with the development of sales and Ralph N. Emanuel, Ltd. was founded. In 1970, both these European companies became totally owned subsidiaries and ultimately bore the Aldrich name. From such beginnings, Aldrich was to become an international company well known on every continent.

In 1972, Aldrich acquired Diaprep, Inc., an Atlanta, Georgia firm and a small supplier of deuterated com-

pounds. Today, Aldrich is one of the world's major suppliers of such stable isotopes. The same year Alfred established Boranes, Inc., an Aldrich subsidiary, to develop entirely new chemical technology based on borane chemistry discovered by Professor H. C. Brown of Purdue University who was later to be recognized with the Nobel Prize in chemistry. Up to that point, Professor Brown had tried in vain to interest larger companies in the technology. In contrast, Alfred, with characteristic vision and decisiveness, promptly recognized and acted on the opportunity. Today, this activity is carried on at a separate plant in Sheboygan, Wisconsin.

In 1975, Aldrich merged with Sigma Chemical Company to form Sigma-Aldrich Corporation, thus combining the world's leading supplier of research biochemicals with what had become the leading supplier of organic and inorganic research chemicals. Alfred Bader, as well as two of Sigma's founders, Aaron Fischer and Dan Broida, envisioned the opportunity for interplay between the technical, service, and marketing strengths of the two companies in a way which would better serve the research community thus making the combined company greater than the sum of its parts.

Sigma Chemical, having started in a small storefront in 1948, had a similar humble beginning. Its first biochemical product was ATP (adenosine triphosphate), a major source of energy in living organisms. The growth of Sigma had been due mainly to the vision, energy and hard work of its president, Dan Broida. Upon the merger, Dan Broida became Chairman and Alfred Bader President. In 1980, Broida stepped aside, and Bader became the Chairman. Unfortunately, Sigma-Aldrich was not to have the continuing support of Broida for long, for he passed away in 1981. However, as Bader has stated, "Broida was a legend in his own lifetime and probably did more than anyone else to advance biochemistry. Sigma will remain a lasting monument to his vision and untiring work."

At the time of the merger, Sigma also had a subsidiary, B-Line, which manufactured and distributed metal components for strut and cable tray systems used in routing electrical and mechanical services in industrial installations and utilities. Emphasizing the same principles of quality product and service, B-Line has prospered over the years as part of the Sigma-Aldrich organization.

Although some relatively small companies were acquired by Sigma-Aldrich over the years — such as, Makor Chemicals, Ltd. in Jerusalem which had the unique ability to produce bacterial and fungal toxins, and Floyd Green's Dyes and Stains Company — the major growth was internal, based on the development of new products and related product lines supplied at competitive prices backed by unsurpassed service.

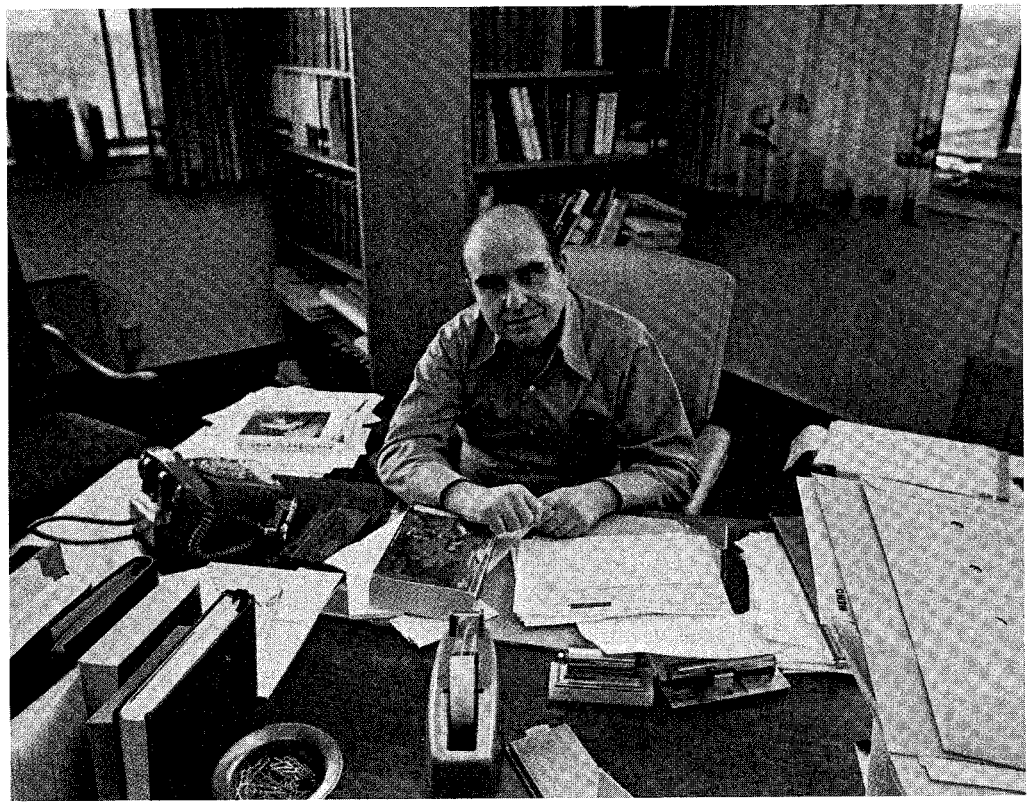
Today, Sigma and Aldrich products are purchased by universities, research institutions, hospitals and industry in nearly every country in the world. Over one million catalogs are distributed. Apart from the USA, Sigma-Aldrich now has warehousing and production plants in England, Germany and Israel and sales locations in Canada, Belgium, France and Japan.

Alfred, as Chairman of a company that now employs over 1,800 people, must surely reflect that this is a far cry from his garage of 1951.

Over the years, Alfred has travelled extensively both in the USA and overseas visiting customers and suppliers. He is known throughout the chemical industry and at many universities. Early on, his main mode of transport was the train, usually at night, while he snatched a few hours sleep to maximize the use of time and minimize expenses. In his customary manner, he soon became an expert on train timetables. As the company grew, Alfred also had the comfort of being driven from place to place by the company's salesmen. Alfred readily adapted to this way of life having the ability to fall asleep quickly, occasionally arousing for a few minutes to comment, "what lovely countryside," without necessarily gazing out of the window. Suitably refreshed between visits to customers and suppliers, Alfred would devote the full day to business. There was hardly any time for eating. A quick sandwich generally sufficed. Even

Alfred Bader and Dan Broida

in the evening, little thought was given to culinary delights, for then Alfred either switched his attentions to looking for objects of art or had further business meetings. At the end of such a day, it was not uncommon for Alfred to remark, "put that down to a day's holiday." The Aldrich salesmen, who perhaps had driven hundreds of miles, did not always agree with these well meant comments, but everyone admired his stamina.



The chemist-collector at his desk in 1972

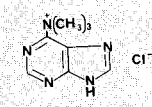
During the growth of the company, Alfred continued his intense interest in art — particularly Old Masters — and the Bible. He has assembled an important private collection of 17th-Century Dutch Masters, and found time to teach Bible at a religious school. Being unable to resist fine paintings, Dutch or otherwise, the homes of Alfred's friends and business associates, museums and universities became the beneficiaries of his remarkable eye for those acquisitions which did not fit into his private collection. Apart from Queen's University, institutions benefiting from his Old Master "finds" include The Milwaukee Art Center, the Allen Memorial Art Center, The Minneapolis Institute of Arts, Oberlin College, and the Fogg Art Museum at Harvard.

As a recognized art historian, Alfred was invited to act as guest curator of The Milwaukee Art Center in 1976 and to organize an exhibition "The Bible through Dutch Eyes." He produced a scholarly catalog reflecting his insight and knowledge of painting and the Bible. He is a much sought-after lecturer throughout the USA, Canada and Europe on subjects such as "the Bible as represented by the Dutch Masters" and "the chemistry involved in the restoring of works of art." He was selected as Fellow of the Royal Society of Arts in London in recognition of his achievements as an art collector and historian, and his research in art restorations.

Ten years ago, on the occasion of Alfred's fiftieth birthday, Professor Wolfgang Stechow wrote in the introduction to "Selections from the Bader Collection:" "Lots of art historians could learn a great many things from Alfred Bader; and all art lovers are indebted to his zeal, his perspicacity and his often proven generosity in sharing his treasures with them."

In spite of his enthusiasm for art, chemistry was never neglected. Alfred has authored or co-authored 25 scientific publications covering a wide range of topics in the field of organic chemistry with the emphasis being on practical rather than theoretical chemistry. He also holds 27 patents.

His first scientific publication dealt with the osmium tetroxide oxidation of some long-chain unsaturated fatty acids[2] while the most recent concerned some work on purin-6-yltrimethylammonium chloride.[3] It is interesting to note that Aldrich now offers all the starting materials which Alfred had to prepare for this research.



purin-6-yltrimethylammonium chloride

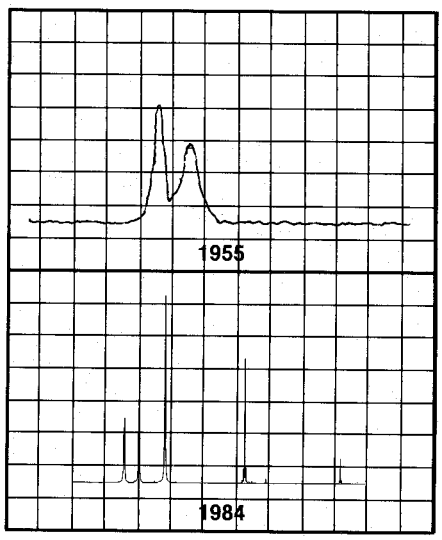
Of course, even Alfred could not completely resist the allure of elucidating structures using new techniques. His 1955 paper on "The Proton Magnetic Resonance Spectrum and Structure of Diketene"[4] confirmed that liquid diketene exists in the 3-buteno-β-lactone form. The contrast of his spectra with those recently taken on Aldrich's 300MHz (superconducting magnet) NMR equipment dramatically illustrates the strides in technology during the last decades.

While Alfred's practical nature and knowledge of chemistry provided the backbone in building Aldrich, he has also proved to be a most successful businessman. Yet, he is known to his many friends and acquaintances as a person who attaches little importance to the so-called "luxuries of life." Paintings — one of his weaknesses, although he does admit to others — are an exception. He still lives in the

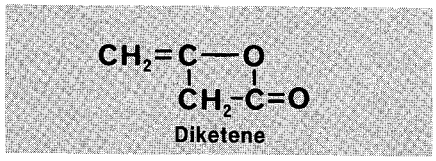
same house, which he himself describes as modest, bought in the early days of Aldrich. He generally drove a car discarded by an Aldrich salesman when it had been driven over 100,000 miles. One of Alfred's own favorite tales concerns the time he drove up to a fund-raising event. The house employee took one look at Alfred and his car and informed him that tradesmen were to use the back entrance.

Kind at heart as many friends can certainly substantiate, Alfred has never suffered fools gladly, and he would be the first to admit that patience is not one of his virtues. Indulging in few hobbies or interests outside of chemistry, the Bible, and art, Alfred's pragmatic, decisive approach and singlemindedness go far toward accounting for his success in the world of both chemistry and art.

Over the years Alfred Bader's contributions to science, industry and art have been recognized in many ways, including an Honorary Doctorate of Science degree from the University of Wisconsin-Milwaukee; the 1983 Engineer-of-the-Year Award given annually to a Milwaukee-area engineer or scientist in recognition of distinguished contributions to the profession and the community; and honorary doctorates from the University of Wisconsin-Madison and Purdue University to be awarded this year.



Diketene NMR Spectra



Diketene

As Alfred Bader approaches his 60th birthday his coworkers and associates at Sigma-Aldrich wish "Our Chemist-Collector" many more productive and fruitful years of activity as our Chairman and as a renowned art collector and historian.

References:

1) Fieser, L.F.; Bader, A.R. *J. Am. Chem. Soc.* **1951**, *73*, 681.
2) Bader, A.R. *ibid.* **1948**, *70*, 3938.
3) Klemm, R.; Schulze, H.; Ettlinger, M.G.; Bader, A.R. *J. Med. Chem.* **1966**, *9*, 981.
4) Bader, A.R.; Gutowsky, H.S.; Williams, G.A.; Yankwich, P.E. *J. Am. Chem. Soc.* **1956**, *78*, 2385.

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The Use of Acronyms in Organic Chemistry

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An acronym (Greek, *akros* tip + *onyma* name) is a "word" formed from the first letters or syllables of other words.[1] We constantly encounter acronyms through the news media and even in our daily conversations. Some of the first recalled by one of us (GHD) date back to the Roosevelt (FDR) administration: NRA (**N**ational **R**ecovery **A**ct), CCC (**C**ivilian **C**onservation **C**orps), and WPA (**W**orks **P**rogress **A**dministration). Today most of us are familiar with such acronyms as UN, PLO, and others on the international scene; NAACP, ACLU, LULAC, NOW, and ERA in the national news; and even MTM in the television and entertainment area. Chemists and other scientists understand the meaning of such acronyms as NIH, NSF, PRF and NCI used with reference to important funding agencies which actively support the cost of scientific research. There are hundreds of others and, depending on our income-earning environment or outside interests, we may or may not know the meaning of such acronyms as ACS, CIO, AFL, UAW, or AAA, BMWCCA, USGA, NFL, and NBA. Of course, acronyms relating to chemistry and chemical terms are well known to all chemists, or are they? Each area of chemistry has its own sets of acronyms which are generally understood by those active in that area but may not be familiar to those chemists outside of the particular area. Some acronyms may be well understood by most chemists independent of area: among them are probably NMR, IR, UV, ESR (EPR), CIDNP, FT, FID, HOMO, LUMO, NOE, HPLC, MPLC, LC, PLC, FC, GCMS, SET, VPC, GLC, ICR, ISC, and DNMR.[2] The word LASER which is familiar to the layman is actually an acronym derived from "Light Amplification by the Stimulated Emission of Radiation". Other acronyms recently encountered by the authors are MIRC (Michael-Induced Ring Closure)[3] and S_{RN}ANRORC (Nucleophilic Substitution by Addition of Nucleophile, Ring Opening, and Ring Closure).[4]

The use of acronyms in describing reagents, solvents, and selected functional or protecting groups in synthetic chemistry is now widespread in both oral presentations and published work. As early as the nineteenth century chemists have introduced abbreviations for certain common functional groups (Ph, Ac, Me, Et, *etc.*) in the general literature, but it was not until the late 1940's and early 1950's that acronyms started to appear for some common reagents and solvents (DMF, DME, NBS, NBA, *etc.*). Perhaps the most active users of acronyms in the 1950's were those individuals publishing in the biochemical area; however, the use was not general. For example, in one issue of *J. Am. Chem. Soc.* (1958) chosen at random a few acronyms appeared (TETA, TMA, KPP, PMT, FH_2 FH_4, DNP, TNP, DNPH & TNPH) and all were defined as they appeared either in the text or in a suitable footnote.[5] In recent issues of both *J. Am. Chem. Soc.* and *J. Org. Chem.* (as well as other journals) acronyms abound especially in synthetic papers and in synthetic schemes. In some cases acronyms are defined in the text or in footnotes but in others they are not, especially where the author(s) felt that the acronym was so common that identification was unnecessary.

At the Spring 1982 National Meeting of the American Chemical Society in Las Vegas, the use of acronyms in oral presentations and on slides illustrating synthetic schemes was common, and the unenlightened chemist or student may have had difficulty interpreting some of the chemistry. In some of the talks, new acronyms were introduced (*e.g.*, NPSP for *N*-phenylselenenylphthalimide).

The use of acronyms in the chemical literature may best be illustrated by a specific example appearing in a relatively recent issue of *J. Org. Chem.*[6] in which the reagents used in a synthetic scheme were presented as follows:

(a) "$Ti(OPr)_4$, (-)-DET, TBHP (CCl_4), -20 °C, 3h.
(b) Red-Al(THF), 22 °C, 3h.
(c) i, 0.8% H_2SO_4 (MeOH), 22 °C, 15h, 86%;
ii, $(C_3H_3N_2)_2C(=S)$ (THF), reflux, 5h;
iii, $(Me_3O)_3P$, 110 °C, 10h;
iv, disiamylborane (THF), NaOH, H_2O_2, 50%;
v, NaH, $PhCH_2Br$ (DMF), 50 °C, 5h, 87%;
vi, Dowex 50W-X8 resin (H_2O), 50 °C, 2h, 100%;
vii, $NaBH_4$ (EtOH), 22 °C, 2h, 100%.
(d) i, TBDMS-Cl, DMAP (CH_2Cl_2), 22 °C, 5h;
ii, H_2, 5% Pd/C (MeOH), 22 °C, 8h;
iii, Ac_2O, C_5H_5N, 60 °C, 5h.
(e) i, Ac_2O, C_5H_5N, 60 °C, 5h;
ii, H_2, 5% Pd/C (MeOH), 22 °C, 12h;
iii, TBDMS-Cl, DMAP (CH_2Cl_2), 22 °C, 5h.
(f) $Ti(OPr)_4$, (+)-DET, TBHP (CH_2Cl_2), -20 °C, 18h.
(g) i, $NaIO_4$ (H_2O), 22 °C;
ii, $NaBH_4$ (EtOH), 27 °C, 10h.
(h) i, TBDMS-Cl, DMAP (CH_2Cl_2), 22 °C, 5h;
ii, H_2, 5% Pd/C (MeOH), 22 °C, 8h;
iii, Ac_2O, C_5H_5N, 60 °C, 5h.
(i) i, TBDMS-Cl, DMAP (CH_2Cl_2) 22 °C, 5h;
ii, H_2, 5% Pd/C (MeOH), 22 °C, 8h;
iii, $NaIO_4$ (H_2O), 22 °C;
iv, $NaBH_4$ (EtOH), 22 °C, 10h;
v, Ac_2O, C_5H_5N, 60 °C, 5h."

Note that the authors used a combination of chemical formulas, standard abbreviations, abbreviated chemical formulas, commercial names, and acronyms in defining the reagents and conditions for each step in the sequence. The reader must be familiar with all of these terms in order to understand the chemistry presented.

It appears that acronyms are here to stay and well they should since they are very convenient to use; however, a current listing would be helpful to those unfamiliar with some of them. Other forms of notation such as the Wiswesser Line Formula Notation (WLN)[7] could be considered as alternatives to acronyms and for some examples the WLN could be conveniently short. Such examples include: tetrahydrofuran - THF *vs.* T5OTJ; dimethylformamide - DMF *vs.* VHN1&1; dimethyl sulfoxide - DMSO *vs.* OS1&1; *N*-bromosuccinimide - NBS *vs.* T5VNVTJ BE; and *tert*-butyl hydroperoxide - TBHP *vs.* QOX1&1&1. WLN was developed as a succinct and precise description of a molecule with its obvious advantages over what is often a lengthy chemical name. Acronyms, however, are usually only a few characters long and they sacrifice accuracy for convenience. WLN's often can become quite lengthy as illustrated in Table I. Thus, overall, the use of WLN in the chemical literature is unlikely to become a substitute for an acronym but it will continue to retain a place in computer systems for the manipulation of chemical structure information.

Table I
Some Common Acronyms and Their WLN's

Material	Acronym	WLN
Dicyclohexylcarbodiimide	DCC	L6TJ ANUCUN- AL6TJ
Diisobutylaluminum hydride	DIBAH	1Y1&1-AL-H1Y1&1
Ethylenediaminetetraacetic acid	EDTA	QV1N1VQ2N1VQ1VQ
Guanosine 5'-monophosphate	GMP	T56 BN DN FMYMVJ GUM D- BT5OTJ CQ DQ E1OPQQO

One disadvantage of the acronym is that a single acronym has been used to represent more than one chemical compound. For example, TEA has been used as an acronym for *trie*thanol*a*mine, *trie*thyl*a*mine, and *trie*thyl*a*luminum. Other acronyms having more than one meaning include AA, BCP, CMC, DAA, DAP, DDS, DEP, DMAP, DMC, DMP, DNS, DSS, EAA, NIP, OCT, PADA, PCT, PMA, TBP, TCP, TES, TFA, THF, TIBA, TLCK, TNS, and TPP. There are also cases in which a single compound has more than one acronym.

Table II lists mainly acronyms but, in addition, some widely used abbreviations and a few commercial names for organic reagents. This table is not meant to be all inclusive; however, it should be helpful to those not very familiar with the common acronyms. Generally, we have not included those associated with the polymer field (PU, PVA, PVC, DMT, PTA, TDI, *etc.*) or the explosive field (TNT, PETN, TNB, TATB, RDX, HMX, HNS, HNAB, *etc.*) but mainly used those associated with reagents which might appear in organic synthetic papers. Sources for the reagents listed in Table II include selected journals, chemical catalogs and selected reference works bearing a list of abbreviations and acronyms in a Glossary or Appendix.[8]

References:

1) Thorndike Barnhart Comprehensive Desk Dictionary, Doubleday, 1952, p 40.
2) In order: Nuclear Magnetic Resonance, Infra Red, Ultra Violet, Mass Spectrometry, Electron Spin Resonance (Electron Paramagnetic Resonance), Chemically Induced Dynamic Nuclear Polarization, Fourier Transform, Free Induction Decay, Highest Occupied Molecular Orbital, Nuclear Overhauser Enhancement, High Pressure Liquid Chromatography, Medium Pressure Liquid Chromatography, Liquid Chromatography, Preparative Liquid Chromatography, Flash Chromatography, Gas Chromatography Mass Spectrometry, Single Electron Transfer, Vapor Phase Chromatography, Gas Liquid Chromatography, Ion Cyclotron Resonance, Intersystem Crossing, and Dynamic Nuclear Magnetic Resonance.
3) Little, R.D.; Verhe, R.; Monte, W.T.; Nugent, S.; Dawson, J.R. *J. Org. Chem.* **1982**, *47*, 362.
4) Van der Plas, H.C. *Acc. Chem. Res.* **1978**, *11*, 462.
5) (a) Jarnagan, R.C.; Wang, J.H. *J. Am. Chem. Soc.* **1958**, *80*, 6477.
(b) Strauss, U.P.; Ander, P. *ibid.* **1958**, *80*, 6494.
(c) Popov, A.I.; Bisi, C.C.; Craft, M. *ibid.* **1958**, *80*, 6513.
(d) Peters, J.M.; Greenberg, D.M. *ibid.* **1958**, *80*, 6679.
6) Ma, P.; Martin, V.S.; Masamune, S.; Sharpless, K.B.; Viti, S.M. *J. Org. Chem.* **1982**, *47*, 1378.
7) Wiswesser, W.J. "A Line-Formula Chemical Notation;" Thomas Y. Crowell Co.: New York, 1954. For a recent description, see Smith, E.G.; Baker, P.A. *The Wiswesser Line-Formula Chemical Notation*, 3rd ed., Chemical Information Management Inc.: Cherry Hill, New Jersey.
8) *J. Am. Chem. Soc.* and *J. Org. Chem.*, 1981 and 1982 issues; Aldrich Catalog/Handbook of Fine Chemicals, Catalog 20, Aldrich Chemical Company, Inc., 1980; Buehler, C.A.; Pearson, D.E. "Survey of Organic Synthesis;" Wiley-Interscience: New York, Vol. I, 1970, Vol. II, 1977; Harrison, I.T.; Harrison, S. "Compendium of Organic Synthetic Methods;" Wiley-Interscience: New York, 1971; Wade, L.G.; O'Donnell, M.J. "Annual Report in Organic Synthesis;" Academic Press: New York, 1979 and 1980; Greene, T.W. "Protective Groups in Organic Synthesis;" John Wiley and Sons, Inc.: New York, 1981; Stowell, J.C. "Carbanions in Organic Synthesis;" John Wiley and Sons, Inc.: New York, 1979; Anand, N.; Bindra, J.S.; Ranganahan, S. "Art In Organic Synthesis;" Holden-Day, Inc.: San Francisco, 1970; Bindra, J.S.; Bindra, R. "Creativity in Organic Synthesis;" Academic Press, Inc.: New York, Vol. I, 1975; Fieser, L.F.; Fieser, M. "Reagents for Organic Synthesis;" John Wiley and Sons, Inc.: New York, Vol. 1-7, 1967-1979; Vol. 8 (Fieser, M.) 1980; Vol. 9 (Fieser, M.; Danheiser, R.L.; Roush, W.R.), 1981.

Table II - Acronyms in Organic Chemistry

Acronym	Description	Aldrich Cat. No.
A	adenine	10,496-5
AA	(see ACAC)	
AA	anisylacetone	
AAA	acetoacetanilide	A873-2
AAAF	2-(*N*-acetoxyacetylamino)fluorene	
AAMX	acetoacet-*m*-xylidide (*m*-aceto-acetoxylidide)	
AAO	acetaldehyde oxime	A100-2
AAOA	acetoacet-*o*-anisidide (*o*-acetoacet-anisidide)	A875-9
AAOC	acetoacet-*o*-chloroanilide (*o*-aceto-acetochloranilide)	
AAOT	acetoacet-*o*-toluidide (*o*-acetoaceto-toluidide)	
ABA	abscisic acid	86,216-9
ABL	α-acetyl-γ-butyrolactone	A1,340-9
ABTS	2,2′-azinobis(3-ethylbenzothiazoline-6-sulfonic acid)	27,172-1
Ac	acetate	
Ac	acetyl	
7-ACA	7-aminocephalosporanic acid	19,114-0
ACAC (acac)	acetylacetone	P775-4
ACES	*N*-(2-acetamido)-2-aminoethane-sulfonic acid [*N*-(carbamoylmethyl)-taurine]	85,759-9
ACTH	adrenocorticotropic hormone	
ADA	*N*-(2-acetamido)iminodiacetic acid [*N*-(carbamoylmethyl)iminodiacetic acid]	85,760-2
7-ADCA	7-aminodesacetoxycephalosporanic acid	
ADDC	ammonium diethyldithiocarbamate	
ADMA	alkyldimethylamine	
ADP	adenosine 5′-diphosphate	14,810-5
AEP	aminoethylpiperazine	A5,520-9
AET	*S*-2-aminoethylisothiouronium bromide hydrobromide	A5,460-1
AIBN	2,2′-azobisisobutyronitrile	
AICA	5(4)-aminoimidazole-4(5)carboxamide	16,496-8
AIP	aluminum isopropoxide	22,041-8 22,940-7
Ala	alanine	A2,680-2
Am	amyl	
AMBA	3-amino-4-methoxybenzanilide	
AMEO	3-aminopropyltriethoxysilane	11,339-5
AMMO	2-aminopropyltrimethoxysilane	
AM-ex-OL	4-chloro-2-phenylquinazoline	16,243-4
bis-AMP	*N*-bis(hydroxyethyl)-2-amino-2-methyl-1-propanol	
AMP	adenosine 5′-monophosphate	A2,500-8
AMPD	2-amino-2-methyl-1,3-propanediol	A6,517-4
AMPS	2-acrylamido-2-methylpropanesulfonic acid	
AMTCS	amyltrichlorosilane	26,233-1
AN	acetonitrile	15,460-1 11,008-6
ANM	*N*-(4-anilino-1-naphthyl)maleimide	
ANPP	4-azido-2-nitrophenyl phosphate	
ANS-NH4	8-anilinonaphthalene-1-sulfonic acid, ammonium salt	21,690-9
ANT	(see AN)	
APAD	3-acetylpyridine adenine dinucleotide	
APAP	*N*-acetyl-*p*-aminophenol	A730-2
APDC	ammonium 1-pyrrolidinecarbodithioate	14,269-7
APDTC	ammonium pyrrolidinedithiocarbamate	14,269-7
APG	*p*-azidophenylglyoxal hydrate	
p-APMSF	(*p*-amidinophenyl)methylsulfonyl fluoride	
APS	adenosine 5′-phosphosulfate	
APTP	*N*-(4-azidophenylthio)phthalimide	
Ar	aryl	
Arg	arginine	A9,240-6
ASC	*p*-acetylaminobenzenesulfonyl chloride	11,274-7
ATA	anthranilamide	A8,980-4
ATC	ethyltrichlorosilane	
ATEE	*N*-acetyl-L-tyrosine ethyl ester monohydrate	A2,290-4
ATP	adenosine 5′-triphosphate	A2,620-9
B	nucleoside base (adenine, cytosine, guanine, thymine, or uracil)	
BA	benzyladenine	85,243-0
BAA	Nα-benzoyl-L-arginineamide hydrochloride monohydrate	
1,3-BAC	1,3-bis(aminomethyl)cyclohexane	18,046-7
BACO	1,4-diazabicyclo[2.2.2]octane	D2,780-2
BAEE	Nα-benzoyl-L-arginine ethyl ester	B1,225-3
BAL	2,3-dimercapto-1-propanol (British anti-Lewisite)	D12,880-5
BAME	Nα-benzoyl-L-arginine methyl ester	
BANA	Nα-benzoyl-DL-arginine-2-naphthyl-amide	
BANI	Nα-benzoyl-DL-arginine-4-nitroanilide	85,711-4
BAO	bis(4-aminophenyl)-1,3,4-oxadiazole	
BaP (BAP)	benzo[*a*]pyrene	B1,008-0
BAP	benzylaminopurine	85,243-0
BAPNA	Nα-benzoyl-DL-arginine-*p*-nitroanilide hydrochloride	85,711-4
9-BBN	9-borabicyclo[3.3.1]nonane	17,871-3 19,385-2 15,107-6
BBO	2,5-bis(4-biphenylyl)oxazole	21,890-1
BBOD	2,5-bis(4-biphenylyl)-1,3,4-oxadiazole	
BBOT	2,5-bis(5-*tert*-butyl-2-benzoxazolyl)-thiophene	22,399-9
BBP	benzyl butyl phthalate	
BCA	*N*-benzylcyclopropylamine	
BCB	bromocresol blue	
BCDC	*N*-benzylcinchonidinium chloride	
BCG	bromocresol green	11,435-9 11,436-7
BCNC	(+)-*N*-benzylcinchonidinium chloride	
BCNU	1,3-bis(2-chloroethyl)-1-nitrosourea	
BCP	bromocresol purple	11,437-5 86,089-1
BCP	butyl carbitol piperonylate	
BCPB	bromochlorophenol blue	21,298-9
BCPC	*sec*-butyl *N*-(3-chlorophenyl)carbamate	
BDCS	(see TBSCl)	
t-BDEA	*tert*-butyldiethanolamine	
BDMA	benzyldimethylamine	18,558-2 13,692-1
BDPA	α,γ-bisdiphenylene-β-phenylallyl, free radical	15,256-0
BES	*N*,*N*-bis(2-hydroxyethyl)-2-amino-ethanesulfonic acid	16,372-4
BGE	butyl glycidyl ether	
BHA	3-*tert*-butyl-4-hydroxyanisole	
BHC	benzene hexachloride	
BHMF	2,5-bis(hydroxymethyl)furan	19,461-1
BHMT	bis(hexamethylene)triamine	
BHT	2,6-di-*tert*-butyl-4-methylphenol (butylated hydroxytoluene)	24,002-8 D4,740-4
BICINE	*N*,*N*-bis(2-hydroxyethyl)glycine	16,379-1
BIS-MSB	*p*-bis(*o*-methylstyryl)benzene	22,244-5 25,740-0
BIS-TRIS	2,2-bis(hydroxymethyl)-2,2′,2″-nitrilo-triethanol [bis(2-hydroxyethyl)amino-tris(hydroxymethyl)methane]	15,666-3 14,609-9
BLO	γ-butyrolactone	B10,360-8
BMS	borane-methyl sulfide complex	17,982-5 19,211-2 19,212-0 19,303-8 19,482-4
Bn	benzyl (also Bz, BZL, or Bnz)	
BN	benzonitrile	B895-9 15,463-6
BNAH	1-benzyl-1,4-dihydronicotinamide	
BNB	2,4,6-tri-*tert*-butylnitrosobenzene	22,378-6
Bnz	(see Bn)	
BOC (or Boc)	*tert*-butoxycarbonyl (or carbo-*tert*-butoxy)	
t-BOC	(see BOC)	
BOC-ON	2-(*tert*-butoxycarbonyloxyimino)-2-phenylacetonitrile	19,337-2
BOC-OSU	*N*-(*tert*-butoxycarbonyloxy)succinimide	
BOC-OTCP	*tert*-butyl 2,4,5-trichlorophenyl carbonate	15,020-7
BON	β-oxynaphthoic acid	H4,600-7
BOP	benzotriazol-1-yloxytris(dimethylamino)-phosphonium hexafluorophosphate	22,608-4
BPB	bromophenol blue	11,439-1 11,440-5
BPBG	butyl phthalyl butyl glycolate	

Acronym	Description	Aldrich Cat. No.
BPC	*n*-butylpyridinium chloride	
BPCC	2,2′-bipyridinium chlorochromate	23,674-8
BPO	2-(4-biphenylyl)-5-phenyloxazole	21,698-4
BPPM	(2*S*,4*S*)-*N*-*tert*-butoxycarbonyl-4-diphenylphosphino-2-diphenylphosphinomethylpyrrolidine	
BPR	bromophenol red	
BSA	*N*,*O*-bis(trimethylsilyl)acetamide	12,891-0
BSC	*N*,*O*-bis(trimethylsilyl) carbamate	
BSH	benzenesulfonyl hydrazide	B380-9
BSOCOES	bis[2-(succinimidooxycarbonyloxy)ethyl] sulfone	
BST Chloride	2-(2′-benzothiazolyl)-5-styryl-3-(4′-phthalhydrazidyl)tetrazolium chloride	
BSTFA	*N*,*O*-bis(trimethylsilyl)trifluoroacetamide	15,519-5
BT	blue tetrazolium	B5,480-0
BTA	benzoyltrifluoroacetone	21,704-2
BTB	bromothymol blue	11,441-3 11,442-1
BTDA	3,3′,4,4′-benzophenonetetracarboxylic dianhydride	B975-0 26,246-3
BTEAC	benzyltriethylammonium chloride	14,655-2
BTEE	*N*-benzoyl-L-tyrosine ethyl ester	85,658-4
BTFA	bis(trifluoroacetamide)	
BTMSA	bis(trimethylsilyl)acetylene	18,743-7
Bu	butyl	
nBu	*n*-butyl	
iBu	isobutyl	
sBu	*sec*-butyl	
tBu	*tert*-butyl	
Bz	benzoyl	
BZL	(see Bn)	
CAN	ceric ammonium nitrate	21,547-3 22,954-7
CAP	cellulose acetate phthalate	
CAP-Li_2	carbamoyl phosphate, dilithium salt	
CAPS	3-cyclohexylamino-1-propanesulfonic acid	16,376-7
CAT	2-chloro-4,6-bis(ethylamino)-*s*-triazine	
Cathyl	ethoxycarbonyl (or carbethoxy)	
p-CBA	*p*-carboxybenzaldehyde	12,491-5
CBC	carbomethoxybenzenesulfonyl chloride	24,521-6
CBn (or Cb)	benzyloxycarbonyl (or carbobenzoxy)	
CBz (or CBZ)	(see CBn)	
CBZ-HONB	*N*-benzyloxycarbonyloxy-5-norbornene-2,3-dicarboximide	20,891-4
CCH	cyclohexylidenecyclohexane	
CCNU	1-(2-chloroethyl)-3-cyclohexyl-1-nitrosourea	
CD	cyclodextrin	85,609-6 85,608-8 86,141-3
CDAA	chlorodiallylacetamide	
CDC	cycloheptaarylose-dansyl chloride complex	
CDEC	2-chloroallyl *N*,*N*-diethyldithiocarbamate	
CDP	cytidine 5′-diphosphate	
CDTA	*trans*-1,2-diaminocyclohexane-*N*,*N*,*N*′,*N*′-tetraacetic acid	12,581-4
CE	cyanoethyl	
CEEA	*N*-(2-cyanoethyl)-*N*-ethylamine	
CEEMT	*N*-(2-cyanoethyl)-*N*-ethyl-*m*-toluidine	
CEMA	*N*-(2-cyanoethyl)-*N*-methylaniline	
CEPEA	*N*-(2-hydroxyethyl)-*N*-(2-cyanoethyl)-aniline	
CF	5(6)-carboxyfluorescein	
CHAPS	3-[(3-cholamidopropyl)dimethylammonio]propanesulfonate	22,694-7
CHES	2-(cyclohexylamino)ethanesulfonic acid	22,403-0
CHP	*N*-cyclohexyl-2-pyrrolidone	
CHT	cycloheptatriene	C9,920-5
5-CIA	5-chloroisatoic anhydride	C4,810-4
CMA	carbomethoxymaleic anhydride	
CMC	carboxymethyl cellulose	
CMC	1-cyclohexyl-3-(2-morpholinoethyl)-carbodiimide	19,756-4 C10,640-2
CMDMCS	(chloromethyl)dimethylchlorosilane	22,618-1
CMP	cytidine 5′-monophosphate	85,200-7

Acronym	Description	Aldrich Cat. No.
CNT	cyanotoluene	11,977-6 13,232-2 13,233-0
CoA	coenzyme A	
COD	cyclooctadiene	C10,920-7
COT	cyclooctatetraene	13,892-4
Cp (or cp)	cyclopentadiene	
Cp* (or cp*)	pentamethylcyclopentadiene	21,402-7
6-CP	6-chloropurine	16,117-9
4-CPA	4-chlorophenoxyacetic acid	15,316-8
*m*CPBA	*m*-chloroperoxybenzoic acid	C6,270-0
CPR	chlorophenol red	19,952-4 23,548-2
CPTEO	3-chloropropyltriethoxysilane	
CPTMO	3-chloropropyltrimethoxysilane	25,457-6
12-Crown-4	1,4,7,10-tetraoxacyclododecane	19,490-5
15-Crown-5	1,4,7,10,13-pentaoxacyclopentadecane	18,883-2
18-Crown-6	1,4,7,10,13,16-hexaoxacyclooctadecane	18,665-1
CSA	camphorsulfonic acid	C210-7
CSI	chlorosulfonyl isocyanate	14,266-2
CTA	citraconic anhydride	12,531-8
CTAB (or CTABr)	cetyltrimethylammonium bromide	85,582-0
CTACl	cetyltrimethylammonium chloride	
CTACN	cetyltrimethylammonium cyanide	
CTAOH	cetyltrimethylammonium hydroxide	
CTP	cytidine 5′-triphosphate	85,201-5
CYAP	*O*,*O*-dimethyl *O*-(*p*-cyanophenyl) phosphorothioate	
cyclic AMP	adenosine 3′,5′-cyclic monophosphoric acid	85,120-5
CYP	*p*-cyanophenyl ethyl phenylphosphonothioate	
CySH	cysteine	16,814-9
D	2,2′-dithiodibenzoic acid	D21,940-1
2,4-D	2,4-dichlorophenoxyacetic acid	D7,072-4
DAA	diacetone alcohol	H4,154-4
DAA	diacetone acrylamide	22,234-8
DAB	*p*-dimethylaminoazobenzene	11,449-9
DAB	diaminobenzidine (usually 3,3′)	D1,238-4 26,189-0
DABCO (or TED)	1,4-diazabicyclo[2.2.2]octane	D2,780-2
DABITC	4-(*N*,*N*-dimethylamino)azobenzene-4′-isothiocyanate	
DABS-Cl	4-(*N*,*N*-dimethylamino)azobenzene-4′-sulfonyl chloride	22,626-2
3,5-DACB	3,5-diaminochlorobenzene	
DACH	*trans*-1,2-diaminocyclohexane	13,255-1
DACM-3	*N*-(7-dimethylamino-4-methyl-3-coumarinyl)maleinimide	
DAD	(see DEAD)	
DAMN	diaminomaleonitrile	16,388-0
DAMO	*N*-aminoethylaminopropyltrimethoxysilane (diaminotrimethoxysilane)	23,577-6
DANSYL	5-dimethylaminonaphthalene-1-sulfonyl	
DAP	diammonium phosphate	21,599-6
DAP	diallyl phthalate	
DAPI	4′,6-diamidino-2-phenylindole dihydrochloride	21,708-5
DAS	4,4′-diaminostilbene-2,2′-disulfonic acid	
DAST	diethylaminosulfur trifluoride	23,525-3
DATMP	diethylaluminum 2,2,6,6-tetramethylpiperidide	
2,4-DB	2,4-dichlorophenoxybutyric acid	26,188-2
DBA	dibenz[*a*,*h*]anthracene	D3,140-0
DBC•Br_2	dibenzo-18-crown-6/Br_2	
DBCP	1,2-dibromo-3-chloropropane	
DBDPO	decabromodiphenyl oxide	19,442-5
DBIC	dibutylindolocarbazole	
DBMIB	dibromomethylisopropylbenzoquinone	
DBN	1,5-diazabicyclo[4.3.0]non-5-ene	13,658-1
DBP	dibutyl phthalate	15,243-9 24,047-8
DBPC	2,6-di-*tert*-butyl-*p*-cresol	D4,740-4 24,002-8
DBS	dibutyl sebacate	
DBU	1,8-diazabicyclo[5.4.0]undec-7-ene	13,900-9
2,4-DCAD	2,4-dichlorobenzaldehyde	14,675-7
DCAF	2′,4′-bis[di(carboxymethyl)aminomethyl]fluorescein	
DCB	dicyanobenzene	14,585-8 24,108-3
2,4-DCBA	2,4-dichlorobenzoic acid	13,957-2

Acronym	Description	Aldrich Cat. No.
2,4-DCBC	2,4-dichlorobenzyl chloride	13,925-4
2,4'-DCBP	2,4'-dichlorobenzophenone	
3,4-DCBTE	3,4-dichlorobenzotrifluoride	23,580-6
2,4-DCBTF	2,4-dichlorobenzotrifluoride	
3,4-DCBTF	3,4-dichlorobenzotrifluoride	23,580-6
DCC	dicyclohexylcarbodiimide	D8,000-2
DCCI	(see DCC)	
DCDC	2,4-dichlorodichlorotoluene	
DCEE	dichloroethyl ether	
DCHA	dicyclohexylamine	D7,950-0
		18,584-1
DCHBH	dicyclohexylborane	
DCI-HCl	1-(3',4'-dichlorophenyl)-2-isopropyl-aminoethanol hydrochloride	D7,175-5
DCOC	2,4-dichlorobenzoyl chloride	11,193-7
DCPD	dicyclopentadiene	11,279-8
2,4-DCT	2,4-dichlorotoluene	14,500-9
3,4-DCT	3,4-dichlorotoluene	16,136-5
2,4-DCTC	2,4-dichlorobenzotrichloride	
3,4-DCTC	3,4-dichlorobenzotrichloride	
DCU	*N,N*-dichlorourethane	14,209-3
DDA	4,4'-dichlorodiphenylacetic acid	10,087-0
DDB	2,3-dimethoxy-1,4-bis(dimethylamino)-butane	21,296-2
		19,548-0
DDD	2,2'-dihydroxy-6,6'-dinaphthyl disulfide	
o,p'-DDD	1-(*o*-chlorophenyl)-1-(*p*-chlorophenyl)-2,2-dichloroethane	C6,380-4
p,p'-DDD	2,2-bis(*p*-chlorophenyl)-1,1-dichloro-ethane	B3,959-3
		B3,960-7
o,p'-DDE	1-(*o*-chlorophenyl)-1-(*p*-chlorophenyl)-2,2-dichloroethylene	14,498-3
p,p'-DDE	2,2-bis(*p*-chlorophenyl)-1,1-dichloro-ethylene	12,389-7
DDH	1,3-dibromo-5,5-dimethylhydantoin	15,790-2
DDM	4,4'-dichlorodiphenylmethane	
DDM	diphenyldiazomethane	
DDMU	4,4'-dichlorodiphenyl-2-chloroethylene	
DDOH	4,4'-dichlorodiphenylethanol	18,888-3
DDP	dichlorodiammineplatinum	20,407-2
		22,691-2
DDQ	2,3-dichloro-5,6-dicyano-1,4-benzo-quinone	D6,040-0
DDS	*p,p'*-diaminodiphenyl sulfone	A7,480-7
DDS	dihydroxydiphenyl sulfone	10,303-9
DDSA	dodecenylsuccinic anhydride	D22,190-2
o,p'-DDT	1-(*o*-chlorophenyl)-1-(*p*-chlorophenyl)-2,2,2-trichloroethane	10,464-7
p,p'-DDT	1,1-bis(*p*-chlorophenyl)-2,2,2-trichloro-ethane	10,002-1
DDVP	dimethyl 2,2-dichlorovinyl phosphate	
DDZ	α,α-dimethyl-3,5-dimethoxybenzyloxy-carbonyl	
DEA	*N,N*-diethylaniline	D8,990-5
		18,586-8
DEAA	*N,N*-diethylacetoacetamide	
DEAC	diethylaluminum chloride	21,280-6
		19,273-2
DEAD	diethyl azodicarboxylate	D9,000-8
DEAE-cellulose	diethylaminoethyl cellulose	
DEAH	diethylaluminum hydride	
DEAI	diethylaluminum iodide	19,277-5
DEAP	2,2-diethoxyacetophenone	22,710-2
DEASA	*N,N*-diethylaniline-3-sulfonic acid	
DEC	diethylaminoethyl chloride hydro-chloride	D8,720-1
DEDM	diethyl diazomalonate	
DEII	diethylindoloindole	
DEP	diethyl phthalate	D9,962-5
DEP	diethyl pyrocarbonate	15,922-0
DEPC	diethylphosphoryl cyanide	24,673-5
DEPHA	di-(2-ethylhexyl)phosphoric acid	23,782-5
DESS	diethyl succinylsuccinate	12,612-8
DET	diethyl tartrate (+ or −)	15,684-1
		21,396-9
DFP	diisopropyl fluorophosphate	D12,600-4
DHA	dehydroacetic acid	D290-0
DHA	9,10-dihydroanthracene	12,617-9
		10,755-7
DHBA	3,4-dihydroxybenzylamine hydro-bromide	85,878-1
DHBP	dihydroxybenzophenone (usually 4,4')	D11,050-7
DHEBA	1,2-dihydroxyethylene-bis-acrylamide	
DHET	dihydroergotoxine	

Acronym	Description	Aldrich Cat. No.
DHN	5,12-dihydronaphthacene	
DHP	diheptyl phthalate	
DHP	dihydropyran	D10,620-8
DIAD	diisopropyl diazodicarboxylate	22,554-1
DIB	1,3-diphenylisobenzofuran	10,548-1
DIBAC	diisobutylaluminum chloride	25,680-3
DIBAH	diisobutylaluminum hydride	19,030-6
		21,496-5
		25,683-8
		21,494-9
		21,497-3
		25,684-6
		25,688-9
		25,687-0
		21,500-7
		21,498-1
		19,272-4
		25,686-2
		21,495-7
		25,681-1
		25,685-4
DIBAL	(see DIBAH)	
DIBAL-H	(see DIBAH)	
DIC	(dimethylamino)isopropyl chloride hydrochloride	D14,240-9
DIDP	diisodecyl phthalate	
DI-ET	*N,N*-diethyl-*p*-phenylenediamine monohydrochloride	
Diglyme	diethylene glycol dimethyl ether	M1,410-2
DiHPhe	2,5-dihydroxyphenylalanine	
Dimsyl Na	sodium methylsulfinylmethide	
DIOP	2,3-*O*-isopropylidene-2,3-dihydroxy-1,4-bis(diphenylphosphino)butane	23,765-5
		23,766-3
DIPC	dimethylaminoisopropyl chloride hydrochloride	D14,240-9
Diox	dioxane	D20,186-3
		15,482-2
DIPHOS	ethylenebis(diphenylphosphine)	10,649-6
DIPSO	3-[*N*-bis(hydroxyethyl)amino]-2-hydroxy-propanesulfonic acid	
DIPT	diisopropyl tartrate (+ or −)	22,918-0
		22,780-3
DITC	1,4-phenylene diisocyanate	26,224-2
DMA	*N,N*-dimethylaniline	D14,575-0
DMA	dimethylacetamide	15,480-6
		18,588-4
		D13,751-0
2,6-DMA	2,6-dimethylanisole	D14,640-4
DMAA	*N,N*-dimethylacetoacetamide	
DMAC	(see DMA, dimethylacetamide)	
DMAD	dimethyl acetylenedicarboxylate	D13,840-1
DMA-DEA	*N,N*-dimethylacetamide diethyl acetal	
DMAEMA	2-dimethylaminoethyl methacrylate	23,490-7
DMAP	dimethylaminopropylamine	D14,500-9
		24,005-2
DMAP	4-dimethylaminopyridine	10,770-0
DMAPMA	dimethylaminopropyl methacrylamide	
DMB	4,4'-dichloro-α-methylbenzhydrol	19,132-9
DMC	2-(dimethylamino)ethyl chloride	D14,120-8
DMCS	dimethylchlorosilane	14,420-7
DMDAAC	dimethyldiallylammonium chloride	
DME	1,2-dimethoxyethane (glyme)	25,952-7
		25,638-2
		E2,740-8
DMECS	dimethylethylchlorosilane	
DMEU	*N,N'*-dimethylethyleneurea	19,345-3
DMF	dimethylformamide	15,481-4
		22,705-6
		D15,855-0
DMF-DMA	dimethylformamide dimethyl acetal	14,073-2
DMI	1,3-dimethyl-2-imidazolidinone	19,345-3
DMP	dimethyl phthalate	D17,898-5
		24,068-0
DMP	dimethyl pyrocarbonate	
DMP	2,2-dimethoxypropane	D13,680-8
2,6-DMP	2,6-dimethylphenol	D17,490-4
		D17,500-5
DMP-30	2,4,6-tris(dimethylaminomethyl)phenol	T5,820-3
DMPA	2,2-dimethoxy-2-phenylacetophenone	19,611-8
DMPC	dimethylaminopropyl chloride hydro-chloride	D14,520-3
DMPE	1,2-bis(dimethylphosphino)ethane	26,193-9
DMPO	5,5-dimethyl-1-pyrroline-*N*-oxide	19,458-1

Acronym	Description	Aldrich Cat. No.
DMPP	1,1-dimethyl-4-phenylpiperazinium iodide	D17,750-4
DMPS	2,3-dimercapto-1-propanesulfonic acid (sodium salt)	19,452-2
DMPU	*N,N'*-dimethylpropyleneurea	25,156-9
DMS	4,6-dimethoxybenzene-1,3-disulfonyl chloride	
DMSO	dimethyl sulfoxide	15,493-8 M8,180-2
DMSS	dimethyl succinylsuccinate	18,527-2
DMT	dimethyl terephthalate	18,512-4
DMTD	dimercaptothiadiazole	D12,900-3 13,943-2
DMTSF	dimethyl(methylthio)sulfonium fluoroborate	
DNA	deoxyribonucleic acid	
DNAP	4-(2',4'-dinitrophenylazo)-9-phenanthrol	
DNBS	2,4-dinitrobenzenesulfonic acid	25,993-4
DNBSC	2,4-dinitrobenzenesulfenyl chloride	10,545-7
DNF	2,4-dinitrofluorobenzene	D19,680-0
DNFA	2,4-dinitro-5-fluoroaniline (Bergmann's reagent)	D19,670-3
DNFB	(see DNF)	
DNP	2,4-dinitrophenylhydrazine	D19,930-3
DNP	dinonyl phthalate	
DNPBA	3,5-dinitroperoxybenzoic acid	
2,6-DNPC	2,6-dinitro-*p*-cresol	22,753-6
Dnp-F	(see DNF)	
DNPF	(see DNF)	
DNS	5-dimethylamino-1-naphthalenesulfonic acid	19,434-4
DNS	4,4'-dinitrostilbene-2,2'-disulfonic acid, disodium salt	
DNS-BBA	*N*-dansyl-3-aminobenzeneboronic acid	
DNSA	5-dimethylaminonaphthalene-1-sulfonamide	21,889-8
DNTC	4-dimethylamino-1-naphthyl isothiocyanate	22,627-0
DOA	dioctyl adipate	
DOCA	deoxycorticosterone acetate	
DOP	dioctyl phthalate	D20,115-4
DOPA	3-(3,4-dihydroxyphenyl)-DL-alanine	10,216-4
DOPET	3,4-dihydroxyphenethyl alcohol	
DOPS	DL-*threo*-3,4-dihydroxyphenylserine	14,884-9
2,4-DP	2,4-dichlorophenoxypropionic acid	26,187-4
DPB	1,4-diphenyl-1,3-butadiene	D20,600-8
DPDM	diphenyl diazomalonate	
DPH	1,6-diphenyl-1,3,5-hexatriene	D20,800-0
DPP-Cl	diphenylphosphinyl chloride	23,023-5
DPPA	diphenylphosphoryl azide	17,875-6
DPPC	dipalmitoylphosphatidylcholine	
DiPT	diisopropyl tartrate (+ or −)	22,918-0 22,780-3
DPS	*trans-p,p'*-diphenylstilbene	D21,375-6
DSAH	disuccinimidyl (*N,N'*-diacetylhomocysteine)	
DSP	dithiobis(succinimidyl propionate)	
DSS	3-(trimethylsilyl)-1-propanesulfonic acid (sodium salt hydrate)	17,883-7
DSS	disuccinimidyl suberate	
DSS	2,2-dimethyl-2-silapentane-5-sulfonate	17,883-7
DST	disuccinimidyl tartrate	
DTE	dithioerythritol	16,176-4
DTMC	4,4'-dichloro-α-(trichloromethyl)-benzhydrol	
DTNB	5,5'-dithiobis(2-nitrobenzoic acid)	D21,820-0
DTPA	diethylenetriaminepentaacetic acid	D9,390-2
DTT	dithiothreitol	15,046-0
DVB	divinylbenzene	
DXE	dixylylethane	
EAA	ethyl acetoacetate	E964-1 24,070-2
EAA	*N*-ethylanthranilic acid	
EADC	ethylaluminum dichloride	19,275-0 25,161-5 25,691-9 25,692-7 25,693-5
EAK	ethyl amyl ketone	13,691-3
EASC	ethylaluminum sesquichloride	19,276-7 25,694-3 25,695-1
EBA	*N*-ethyl-*N*-benzylaniline	
EBASA	*N*-ethyl-*N*-benzylaniline-4-sulfonic acid	
EBSA	*p*-ethylbenzenesulfonic acid	24,520-8
ECEA	*N*-ethyl-*N*-chloroethylaniline	
EAK	ethyl amyl ketone	13,691-3
EASC	ethylaluminum sesquichloride	19,276-7 25,694-3 25,695-1
EBA	*N*-ethyl-*N*-benzylaniline	
EBASA	*N*-ethyl-*N*-benzylaniline-4-sulfonic acid	
EBSA	*p*-ethylbenzenesulfonic acid	24,520-8
ECEA	*N*-ethyl-*N*-chloroethylaniline	
EDANS	2-aminoethylamino-1-naphthalenesulfonic acid (1,5 or 1,8)	19,387-9 19,388-7
EDB	ethylene dibromide	D4,075-2 24,065-6
EDC	ethylene dichloride	D6,156-3 15,478-4
EDCI	1-ethyl-3-[3-(dimethylamino)propyl]-carbodiimide hydrochloride	16,146-2
EDDP	*O*-ethyl *S,S*-diphenyl dithiophosphate	
EDTA	ethylenediaminetetraacetic acid	E2,628-2
EDTN	1-ethoxy-4-(dichloro-*s*-triazinyl)-naphthalene	16,319-9
EDTP	ethylenediamine tetrapropanol	12,226-2
EEDQ	*N*-ethoxycarbonyl-2-ethoxy-1,2-dihydroquinoline	14,983-7 15,207-2
EGS	ethylene glycol bis(succinimidyl succinate)	
EGTA	1,2-di(2-aminoethoxy)ethane-*N,N,N',N'*-tetraacetic acid	23,453-2
en	ethylenediamine	E2,626-6
EPN	*O*-ethyl *O*-(*p*-nitrophenyl)thiobenzenephosphate	
EPPS	4-(2-hydroxyethyl)-1-piperazinepropanesulfonic acid	16,374-0
Et	ethyl	
ETA	(see EDTA)	
ETSA	ethyl trimethylsilylacetate	20,912-0
EVK	ethyl vinyl ketone	E5,130-9
FA	furfuryl alcohol	F1,990-6 18,593-0
FAD	flavin adenine dinucleotide	
FAMSO	methyl methylsulfinylmethyl sulfide	17,795-4
FDMA	perfluoro-*N,N*-dimethylcyclohexylmethylamine	
FDNB	(see DNF)	
FDNDEA	5-fluoro-2,4-dinitro-*N,N*-diethylaniline	
FDP	D-fructose-1,6-diphosphate	85,912-5
FHZ	ferritin hydrazide	
FITC	fluorescein isothiocyanate	F250-2
Fl	flavin	
FMA	fluoroscein mercuric acetate	
FMN	flavin mononucleotide	
FNPS	bis(4-fluoro-3-nitrophenyl) sulfone	F1,170-0
FS	Fremy's salt (dipotassium nitrosodisulfonate)	22,093-0
FTN	perfluoro-1,3,7-trimethylbicyclo[3.3.1]-nonane	
FUDR	5-fluorodeoxyuridine	85,665-7
G	guanine	G1,195-0
GABA	4-aminobutyric acid	A4,440-1
GAPDH	glyceraldehyde-3-phosphate dehydrogenase	
GDP	guanosine 5'-diphosphate	
GLDH	glutamate dehydrogenase	
gln	glutamine	G320-2
Glu	glutamic acid	12,843-0
Gly	glycine	G620-1 24,126-1
Glyme (glyme)	1,2-dimethoxyethane (see DME)	
GLYMO	3-glycidyloxypropyltrimethoxysilane	23,578-4
GMP	guanosine 5'-monophosphate	85,285-6
GOD	glucose oxidase	
G-6-P	glucose-6-phosphate	
GSH	glutathione, reduced	G470-5
GSSG	glutathione, oxidized hydrate	15,056-8
GTP	guanosine 5'-triphosphate	85,205-8
HABA	2-(*p*-hydroxyphenylazo)benzoic acid	14,803-2
HABBA	2-(4'-hydroxyazobenzene)benzoic acid	
Hb	hemoglobin	

Acronym	Description	Aldrich Cat. No.
HBD	hexabutyldistannoxane	B5,338-3
HDCBS	2-hydroxy-3,5-dichlorobenzenesulfonic acid	23,882-1
HDODA	1,6-hexanediol diacrylate	24,681-6
HDPE	high-density polyethylene	18,190-0
HEA	*N*-(2-hydroxyethyl)aziridine	10,690-9
HEDTA	hydroxyethylethylenediaminetriacetic acid	H2,650-2
HEEI	*N*-(2-hydroxyethyl)ethyleneimine	10,690-9
HEMA	2-hydroxyethyl methacrylate	12,863-5
HEPES	4-(2-hydroxyethyl)-1-piperazineethanesulfonic acid	16,371-6 23,388-9
HEPSO	*N*-hydroxyethylpiperazine-*N*′-2-hydroxypropanesulfinic acid	
Hex	hexane (or hexyl)	13,938-6 24,887-8 20,875-2
HFA	hexafluoroacetone	13,923-8
HFBA	heptafluorobutyric acid	16,419-4
HFIP	hexafluoroisopropyl alcohol	10,522-8
HFP	hexafluoropropene	
HFTA	hexafluorothioacetone	
HHPA	hexahydrophthalic anhydride	12,346-3 14,829-6
His	histidine	15,168-8
HMAT	hexa[1-(2-methyl)aziridinyl]-1,3,5-triphosphatriazine	
HMB	2-hydroxy-4-methoxybenzophenone	H3,620-6
HMB	2-hydroxy-5-methoxybenzaldehyde	14,686-2
HMDS	1,1,1,3,3,3-hexamethyldisilazane	H1,000-2
HMDSO	hexamethyldisiloxane	20,538-9
HMI	hexamethyleneimine	H1,040-1
HMN	2,2,4,4,6,8,8-heptamethylnonane	12,851-1
HMPA	hexamethylphosphoramide (hexamethylphosphoric triamide)	H1,160-2
HMPT	hexamethylphosphorous triamide	14,355-3
HMPTA	(see HMPA)	
HMTT	3-hexadecanoyl-4-methoxycarbonyl-1,3-thiazolidine-2-thione	
HOAc	acetic acid	10,908-8 24,285-3
HOBT	hydroxybenztriazole	15,726-0
HONB	*N*-hydroxy-5-norbornene-2,3-dicarboxylic acid imide	22,637-8
HOSA	hydroxylamine-*O*-sulfonic acid	21,313-6 22,797-8
HPPH	5-hydroxyphenyl-5-phenylhydantoin	16,154-3
HTMP	2,2,6,6-tetramethylpiperidine	11,575-4
HVA	homovanillic acid (4-hydroxy-3-methoxyphenylacetic acid)	14,364-2
Hylv	α-hydroxyisovaleric acid	21,983-5
I-AEDANS	*N*-iodoacetyl-*N*′-(X-sulfo-1-naphthyl)-ethylenediamine (X = 5, 1,5-I-AEDANS; X = 8, 1,8-I-AEDANS)	
1,5-I-AEDANS	(see I-AEDANS, X = 5)	85,861-7
1,8-I-AEDANS	(see I-AEDANS, X = 8)	85,985-0
IBD	iodobenzene dichloride	
IBMX	3-isobutyl-1-methylxanthine	85,845-5
IBTMO	isobutyltrimethoxysilane	
ICD	isocitric dehydrogenase	
ICl	isophthaloyl chloride	I-1,940-3
IDP	inosine 5′-diphosphate	85,207-4
IDU	5-iodo-2′-deoxyuridine	I-775-6
IH	immobilized histamine	
IIDQ	2-isobutoxy-1-isobutoxycarbonyl-1,2-dihydroquinoline	17,824-1
Ile	isoleucine	15,171-8
IMEO	imidazolinepropyltriethoxysilane	
IMP	inosine 5′-monophosphate	85,206-6
INAH	isonicotinic acid hydrazide	I-1,753-2
INH	(see INAH)	
INT	2-(*p*-iodophenyl)-3-(*p*-nitrophenyl)-5-phenyltetrazolium chloride	I-1,040-6
IPA	isopropyl alcohol	10,982-7 15,497-0 19,076-4
IPC	isopropyl *N*-phenylcarbamate	
$IpcBH_2$	isopinocampheylborane	
Ipc_2BH	diisopinocampheylborane	
IPDI	isophorone diisocyanate (3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate)	
IPN	isophthalonitrile	14,585-8 24,108-3

Acronym	Description	Aldrich Cat. No.
IPOTMS	isopropenyloxytrimethylsilane	
IPTG	isopropyl β-D-thiogalactoside	85,875-7
ITA	itaconic anhydride	25,992-6
ITP	inosine 5′-triphosphate	85,208-2
IZAA	5-chloroindazol-3-acetic acid ethyl ester	
KAPA	potassium 3-aminopropylamide	
KBA	3-ketobutyraldehyde dimethyl acetal	A1,220-8
KBT	4-ketobenztriazine	
KDO	2-keto-3-dioxyoctonate	
K-Selectride®	potassium tri-*sec*-butylborohydride	22,076-0
KS-Selectride®	potassium trisiamylborohydride	22,077-9
LAH	lithium aluminum hydride	19,987-7 21,277-6 21,279-2 21,278-4 23,605-5
LAP	leucine aminopeptidase	
LDA	lithium diisopropylamide	24,661-1
LDH	lactic dehydrogenase	
LDPE	low-density polyethylene	18,189-7
Leu	leucine	L60-2
Lgf_2BH	dilongifolylborane	
LICA	lithium isopropylcyclohexylamide	
LPO	lauroyl peroxide	
L-Selectride®	lithium tri-*sec*-butylborohydride	17,849-7
LS-Selectride®	lithium trisiamylborohydride	22,592-4
LTA	lead tetraacetate	18,519-1
LTMAC	dodecyltrimethylammonium chloride	
Lys	lysine	16,971-4
M	metal	
MA	maleic anhydride	M18-8
MAA	menthoxyacetic acid	M300-0
MAA	methyl acetoacetate	M2,640-2
MAM-acetate	methylazoxymethyl acetate	85,787-4
MAPO	tris[1-(2-methyl)aziridinyl]phosphine oxide	
Phenyl-MAPO	bis[1-(2-methyl)aziridinyl]phenylphosphine oxide	
MAPS	tris[1-(2-methyl)aziridinyl]phosphine sulfide	
MAPTAC	methacrylamidopropyltrimethylammonium chloride	
MASC	methylaluminum sesquichloride	22,397-2
MBA	*N*,*N*′-methylenebisacrylamide	14,832-6 14,607-2
MBBA	*N*-(*p*-methoxybenzylidene)-*p*-butylaniline	15,822-4
MBOCA	methylenebis(*o*-chloroaniline)	
MBS	*m*-maleimidobenzoyl-*N*-hydroxysuccinimide ester	
MBTH	3-methyl-2-benzothiazolinone hydrazone	
MBTH·HCl	3-methyl-2-benzothiazolinone hydrazone hydrochloride	12,973-9
MC	magnesium chlorate	
3-MC	3-methylcholanthrene	21,394-2
MCA	monochloroacetic acid	C1,962-7 24,060-5
MCAA	(see MCA)	
3,3-MCH	3-methyl-3-cyclohexen-1-one	
MCP	*meta*-cresol purple (*m*-cresol purple)	85,789-0 21,176-1
MCP	methylcyclopentane	M3,940-7
MCPBA	*m*-chloroperoxybenzoic acid	C6,270-0
MCPCA	2-methyl-4-chlorophenoxyaceto-*o*-chloroanilide	
MCPDEA	*N*,*N*-di(2-hydroxyethyl)-*m*-chloroaniline	25,047-3
MCPP	4-chloro-3-methylphenoxypropionic acid	
MDA	1,8-*p*-menthanediamine	D1,960-5
MDEB	*N*-methyl-*N*-dodecylephedrinium bromide	23,540-7
MDH	malic dehydrogenase	
Me	methyl	
MeCCNU	1-(2-chloroethyl)-3-(4-*trans*-methylcyclohexyl)-1-nitrosourea	
MEI	2-morpholinoethyl isocyanide	
MEK	methyl ethyl ketone	11,026-4 23,029-4
MeLeu	*N*-methylleucine	
MEM-Cl	methoxyethoxymethyl-β-methoxyethoxymethyl chloride	19,354-2
MEMO	3-methacryloxypropyltrimethoxysilane	23,579-2

Acronym	Description	Aldrich Cat. No.
1-MEO-PMS	1-methoxy-5-methylphenazinium methyl sulfate	
MEP	*O,O*-dimethyl *O*-(3-methyl-4-nitrophenyl) phosphorothioate	
MES•hydrate	4-morpholineethanesulfonic acid	16,373-2
Met	methionine	15,169-6
Meth	2-mercaptoethanol	M370-1
MG-Ch	methyl glycol chitosan	
MHHPA	methylhexahydrophthalic anhydride	14,993-4
MIA	*N*-methylisatoic anhydride	12,988-7
MIBK	methyl isobutyl ketone	M6,710-9 24,289-6
MIPK	methyl isopropyl ketone	23,861-9
MIX	3-isobutyl-1-methylxanthine	85,845-5
MMA	methyl methacrylate	M5,590-9
MMAA	mono-*N*-methylacetoacetamide	
MMC	methyl magnesium carbonate	24,840-1 24,842-8
MMH	methylmercuric hydroxide	
MMS	methyl methanesulfonate	12,992-5
MMTrCl	monomethoxytrityl chloride	12,920-8
MMTS	(see FAMSO)	
MNA	methylnadic anhydride (methyl-norbornene-2,3-dicarboxylic acid anhydride)	23,543-1
MNNG	*N*-methyl-*N'*-nitro-*N*-nitrosoguanidine	12,994-1
MNPT	*m*-nitro-*p*-toluidine	M5,980-7
MO	methyl orange	11,451-0 23,410-9
MOM-	methoxymethyl-	
MOPS	4-morpholinepropanesulfonic acid	16,377-5
MOPSO	3-(*N*-morpholino)-2-hydroxypropanesulfonic acid	
6MP	6-mercaptopurine	85,267-8
MPEMA	2-ethyl-2-(*p*-tolyl)malonamide	19,496-4
MPP	*O,O*-dimethyl *O*-(4-methylmercapto-3-methylphenyl) thiophosphate	
MPPH	5-(*p*-methylphenyl)-5-phenylhydantoin	16,145-4
MPS	methyl phenyl sulfide	T2,800-2
Mpt-Cl	methylphosphinothionyl chloride	
MR	methyl red	11,450-2
MRITC	methylrhodamine isothiocyanate	
MS (or Ms)	mesyl (or methanesulfonyl-)	
MSA	methanesulfonic acid	M860-6 M861-4
MsCl	methanesulfonyl chloride	M880-0
MSH	2,4,6-trimethylbenzenesulfonyl hydrazide	19,220-1
MSMA	monosodium methanearsonate	
MSO	*p*-cresyl methyl ether	14,809-1
MSOC	*N*-(2-methylsulfonyl)ethyloxycarbonyl	
MST	mesitylenesulfonyltetrazolide	
MSTFA	*N*-methyl-*N*-trimethylsilyltrifluoroacetamide	24,210-1
α-MT	DL-α-methyltyrosine	12,069-3
MTB	methylthymol blue	B4,200-4
MTBE	*tert*-butyl methyl ether	17,978-7
MTBSTFA	*N*-(*tert*-butyldimethylsilyl)-*N*-methyltrifluoroacetamide	24,205-5
MTC	methyl isothiocyanate	11,277-1
MTCA	2-methylthiazolidine-4-carboxylic acid	
MTD	*m*-toluenediamine	
MTDEA	*N,N*-di(2-hydroxyethyl)-*m*-toluidine (*m*-toluidine-*N,N*-diethanol)	
MTES	methyltriethoxysilane	17,557-9
MTG	methyl β-D-thiogalactoside	
MTH	methylthiohydantoin	
MTHPA	methyltetrahydrophthalic anhydride	
MTM-	methylthiomethyl-	
MTMC	4-(methylthio)-*m*-cresol	
MTMS	methyltrimethoxysilane	24,617-4
MTN	*m*-tolylnitrile	13,232-2
MTP	4-(methylthio)phenol	M5,552-6
MTPA	α-methoxy-α-trifluoromethylphenylacetic acid	15,526-8 15,561-6
MTT	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2*H*-tetrazolium bromide	13,503-8
MTX	(+)-amethopterin	22,394-8
MUGB	4-methylumbelliferyl *p*-guanidinobenzoate	
MVK	methyl vinyl ketone	M8,750-9
MVP	2-methyl-5-vinylpyridine	12,773-6
MXDA	*m*-xylylenediamine	X120-2
5-NAA	5-nitroanthranilic acid	

Acronym	Description	Aldrich Cat. No.
NAAD	nicotinic acid adenine dinucleotide	
NAC	1-naphthyl *N*-methylcarbamate	
NAD	nicotinamide adenine dinucleotide	
NADH	nicotinamide adenine dinucleotide phosphate, reduced	
NAI	*N*-acetylimidazole	15,786-4
NAM	*N*-acetylmethionine	85,534-0
NANA	*N*-acetylneuraminic acid	85,565-0
NAP	4-nitroaminophenol	
NB-	*p*-nitrobenzyl-	
NBA	*N*-bromoacetamide	13,513-5
NBDCl	4-chloro-7-nitrobenzo-2-oxa-1,3-diazole	16,326-0
NBD-F	4-nitrobenzol-2-oxa-1,3-diazole-7-fluoro	
NBMPR	*S*-(*p*-nitrobenzyl)-6-thioinosine	86,149-9
NBS	*N*-bromosuccinimide	B8,125-5
NBSac	*N*-bromosaccharin	
NBSC	2-nitrobenzenesulfenyl chloride	14,089-9
NCA	*N*-chloroacetamide	
NCDC	2-nitro-4-carboxyphenyl *N,N*-diphenylcarbamate	
NCN	cyanonaphthalene	C9,280-4
NCS	*N*-chlorosuccinimide	10,968-1
NEM	*N*-ethylmaleimide	12,828-7
NEP	*N*-ethyl-2-pyrrolidinone	14,635-8
NEPIS	*N*-ethyl-5-phenylisoxazolium-3'-sulfonate	E4,526-0
NesMIC	(+)-(neomenthylsulfonyl)methyl isocyanide	
5-NIA	5-nitroisatoic anhydride	
NIP	4-hydroxy-5-nitro-3-iodophenylacetic acid	
NIP	2,4-dichlorophenyl 4'-nitrophenyl ether	
NM	nitromethane	10,817-0 15,494-6 23,073-1
NMA	*N*-methylolacrylamide	24,580-1
NMO	*N*-methylmorpholine *N*-oxide monohydrate	22,428-6
NMP	*N*-methylphthalimide	
NMP	*N*-methylpyrrolidone	M7,960-3 24,279-9
NMSO	4-methyl-2-nitroanisole	
NP-	*p*-nitrophenyl	
p-NPDPP	*p*-nitrophenyl diphenyl phosphate	
α-NPO	2-(1-naphthyl)-5-phenyloxazole	
NPP	2-nitro-2-propenyl pivalate	
NPS-	*o*-nitrophenylsulfenyl-	
NPSP	*N*-phenylselenenylphthalimide	25,461-4
Npys-Cl	3-nitro-2-pyridinesulfenyl chloride	
N-Selectride®	sodium tri-*sec*-butylborohydride	21,340-3
NTA	nitrilotriacetic acid	N840-7
N-t-B	2-methyl-2-nitrosopropane	18,026-2
Nu	nucleophile	
OCAD	*o*-chlorobenzaldehyde	12,497-4
OCBA	*o*-chlorobenzoic acid	13,557-7
OCBC	*o*-chlorobenzyl chloride	19,425-5 24,118-0
OCBN	*o*-chlorobenzonitrile	C2,479-5
OCCN	*o*-chlorobenzyl cyanide	18,849-2
OCDC	*o*-chlorodichlorotoluene	
OCOC	*o*-chlorobenzoyl chloride	10,391-8
OCPA	*o*-chlorophenylacetic acid	19,063-2
OCPT	2-chloro-4-aminotoluene (*o*-chloro-*p*-aminotoluene)	10,164-8 23,632-2
OCT	*o*-chlorotoluene	11,191-0
OCT	ornithine carbamyl transferase	
OCTC	*o*-chlorobenzotrichloride	C2,540-6
OCTEO	octyltriethoxysilane	
ODA	4,4'-oxydianiline	A7,250-2 24,727-8 24,839-8
OMH-1	sodium diethyldihydroaluminate	18,911-1
OMP	orotidine 5'-monophosphate	
OTB	*o*-toluidine boric acid	
OTD	*o*-toluenediamine	
P	polymer substituent	
PABA	*p*-aminobenzoic acid	10,053-6
PADA	poly(adipic anhydride)	
PADA	pyridine-2-azo-*p*-dimethylaniline	
Bromo-PADAP	2-(5-bromo-2-pyridylazo)-5-diethylaminophenol	18,001-7
PAH	polycyclic aromatic hydrocarbon	
PAH	*p*-aminohippuric acid	12,295-5
PAL	phenylalanine ammonia lyase	
PAM	pyridine-2-aldoxime methiodide	P6,020-5

Acronym	Description	Aldrich Cat. No.
2-PAM	(see PAM)	
2-PAMCl	2-pyridinealdoxime methochloride	13,163-6
PAN	1-(2-pyridylazo)-2-naphthol	10,103-6
PAP	*O,O*-dimethyl *S*-α-(ethoxycarbonyl)-benzyl phosphorothiolothioate	
PAPA	poly(azelaic anhydride)	
PAPS	3′-phosphoadenosine-5′-phosphosulfate	
PAR	4-(2-pyridylazo)resorcinol, sodium salt monohydrate	17,826-8
PAS	*p*-aminosalicylic acid	A7,960-4
PASAM	*p*-toluenesulfonamide	10,590-1 23,633-0
PBA	*p*-benzoquinone-2,3-dicarboxylic anhydride	
PBBO	2-(4-biphenylyl)-6-phenylbenzoxazole [6-phenyl-2-(4-biphenylyl)benzoxazole]	23,536-9
PBD	2-(4-biphenylyl)-5-phenyl-1,3,4-oxadiazole	25,785-0
Butyl-PBD	2-(4-biphenylyl)-5-(4-*tert*-butylphenyl)-1,3,4-oxadiazole	22,400-6
PBI	*p*-benzoquinone-2,3-dicarboxylic imide	
PBN	*N*-*tert*-butyl-α-phenylnitrone	18,027-0
PBP	*p*-(benzyloxy)phenol	
PBS	poly(butene-1-sulfone)	
PC	propylene carbonate	P5,265-2
PCAD	*p*-chlorobenzaldehyde	11,221-6
PCB	polychlorobiphenyl	
PCBA	*p*-chlorobenzoic acid	13,558-5
PCBC	*p*-chlorobenzyl chloride	11,196-1
PCBN	*p*-chlorobenzonitrile	11,562-2
PCBTF	*p*-chlorobenzotrifluoride	C2,640-2
PCC	pyridinium chlorochromate	19,014-4
PCCN	*p*-chlorobenzyl cyanide	C2,800-6
PCDC	*p*-chlorodichlorotoluene	
P-Cellulose	cellulose phosphate	
PCMB	*p*-chloromercuribenzoic acid	C4,960-7
PCMX	*p*-chloro-*m*-xylenol	C3,830-3
PCNB	pentachloronitrobenzene	P220-5
PCOC	*p*-chlorobenzoyl chloride	11,190-2
PCONA	*p*-chloro-*o*-nitroaniline	10,166-4
PCOT	4-chloro-2-aminotoluene (*p*-chloro-*o*-aminotoluene)	C5,120-2
PCP	pentachlorophenol	P260-4 14,016-3
PCPA	*p*-chlorophenylacetic acid	13,926-2
PCT	polychloroterphenyl	
PCT	*p*-chlorotoluene	11,192-9
PCTC	*p*-chlorotrichlorotoluene	C2,580-5
PDA	phorbol 12,13-diacetate	
PDBz	phorbol 12,13-dibenzoate	
PDC	pyridinium dichromate	21,469-8
PDEA	*N*-phenyldiethanolamine	P2,240-0
PDQ	sodium (2-methyl-4-chlorophenoxy)-butyrate	
PDT	3-(2-pyridyl)-5,6-diphenyl-1,2,4-triazine	16,041-5
PEA	*N*-(2-hydroxyethyl)aniline (*N*-phenylethanolamine)	15,687-6
PEEA	*N*-(2-hydroxyethyl)-*N*-ethylaniline (*N*-phenyl-*N*-ethylethanolamine)	
PEEK	poly ether ketone (ICI)	
PEG	polyethylene glycol	20,236-3 to 20,246-0
PEI-Cellulose	polyethyleneimine-impregnated cellulose	
PEMA	2-ethyl-2-phenylmalonamide	19,502-2
PEP	phosphoenolpyruvic acid	86,007-7 85,858-7 86,195-2
PET	poly(ethylene terephthalate)	20,025-5
PETA	pentaerythritol triacrylate	24,679-4
PG	protective group	
PG	prostaglandin	
PGE	phenyl glycidyl ether	24,848-7
Ph	phenyl	
Phe	phenylalanine	P1,700-8
PHR	phorbol	
Phth	phthaloyl	
PIA	phenyliodoso diacetate	17,872-1
PIPES	1,4-piperazinebis(ethanesulfonic acid)	16,375-9
PMA	phorbol 12-myristate 13-acetate	
PMA	phenylmercuric acetate	P2,712-7
PMDTA	pentamethyldiethylenetriamine	
PMEA	*N*-(2-hydroxyethyl)-*N*-methylaniline (*N*-phenyl-*N*-methylethanolamine)	
PMH	phenylmercuric hydroxide	P2,714-3
PMHS	polymethylhydrosiloxane	17,620-6
PMI	3-phenyl-5-methylisoxazole	
PMI-ACID	3-phenyl-5-methylisoxazole-4-carboxylic acid	13,419-8
PMP	*O,O*-dimethyl *S*-(phthalimidomethyl) phosphorodithioate	
PMS	phenazine methosulfate	P1,340-1
PNASA	*p*-nitroaniline-*o*-sulfonic acid	
PNMT	phenylethanolamine-*N*-methyltransferase	
PNOT	*p*-nitro-*o*-toluidine	14,643-9
PNPDPP	*p*-nitrophenyl diphenyl phosphate	
PNPG	α-*p*-nitrophenylglycerine	
PNPP	*p*-nitrophenyl phosphate	N2,200-2 85,758-0
POBN	α-(4-pyridyl-1-oxide)-*N*-*tert*-butylnitrone	21,543-0
4-POBN	(see POBN)	
POC	cyclopentyloxycarbonyl	
POM	chloromethyl pivalate	14,118-6
POPOP	1,4-bis(5-phenyloxazol-2-yl)benzene	B5,080-5
dimethyl-POPOP	1,4-bis(4-methyl-5-phenyl-2-oxazolyl)-benzene	22,291-7
POPSO	piperazine-*N*,*N*′-bis(2-hydroxypropanesulfonic acid)	
PPA	polyphosphoric acid	20,821-3
PPDA	phenyl phosphorodiamidate	
PPDP	*p*,*p*′-diphenol	16,873-4
PPE	polyphosphate ester (ethyl *m*-phosphate)	
PPNCl	bis(triphenylphosphoranylidene)-ammonium chloride	22,383-2
PPO	2,5-diphenyloxazole	D21,040-4
PPTS	pyridinium *p*-toluenesulfonate	23,223-8
Pr	propyl	
PR	phenol red	11,452-9 11,453-7
iPr	isopropyl	
Pro	proline	13,154-7
P2S	2-pyridinealdoxime methyl methanesulfonate	
PS-Cl	2-pyridinesulfenyl chloride	
PSPA	poly(sebacic anhydride)	
PTAD	*N*-phenyl-1,2,4-triazoline-3,5-dione	
PTAP	phenyltrimethylammonium perbromide	13,971-8
PTBBA	*p*-*tert*-butylbenzoic acid	15,035-5 23,971-8
PTC	phenyl isothiocyanate	13,974-2
PTH	phenylthiohydantoin	
PTMO	*n*-propyltrimethoxysilane	
PTSA	*p*-toluenesulfonic acid	T3,592-0 16,199-3 25,537-8
PTSI	*p*-toluenesulfonyl isocyanate	18,927-8
PVA	polyvinyl alcohol	18,933-2 and others
PVC	polyvinyl chloride	18,261-3 18,262-1 18,956-1 18,958-8
PVDF	polyvinylidene fluoride	18,270-2
PVP	polyvinylpyrrolidone	23,425-7 85,645-2 85,647-9 85,656-8
PVPDC	poly(4-vinylpyridinium) dichromate	23,746-9
PVP-I	polyvinylpyrrolidone-iodine complex	86,056-5
PVSK	potassium polyvinyl sulfate	
PyOTs	(see PPTS)	
Pyr (or Py)	pyridine	P5,750-6 18,452-7
QUIBEC	benzylquinidinium chloride	
RDB	sodium dihydrobis(2-methoxyethoxy)-aluminate	19,619-3
Red-Al®	(see RDB)	
RNA	ribonucleic acid	
RNase	ribonuclease	
SAA	succinic anhydride	13,441-4 23,969-0
SADP	*N*-succinimidyl (4-azidophenyldithio)-propionate	

Acronym	Description	Aldrich Cat. No.
SBH	sodium borohydride	19,807-2 21,346-2 21,553-8 23,704-3
SDP	4,4′-sulfonyldiphenol	10,303-9
SDPP	*N*-succinimidyl diphenyl phosphate	
SDS	sodium dodecyl sulfate	85,192-2 86,201-0
SDS	sodium dodecylbenzenesulfonate	
Ser	serine	S260-0
SEX	sodium ethyl xanthate	
Sia_2BH	disiamylborane	22,078-7
SLS	sodium lauryl sulfate	85,192-2 86,201-0
SMCC	succinimidyl 4-(*N*-maleimidomethyl-cyclohexane)-1-carboxylate	
SMPB	succinimidyl 4-(*p*-maleimidophenyl)-butyrate	
Di-SNADNS	2,7-bis(4-sulfo-1-naphthylazo)-1,8-dihydroxynaphthalene-3,6-disulfonic acid	
SPA	super phosphoric acid	
SPADNS	2-(*p*-sulfophenylazo)-1,8-dihydroxy-3,6-naphthalenedisulfonic acid (trisodium salt)	11,475-8
SPDP	*N*-succinimidyl 3-(2-pyridyldithio)-propionate	
SSP	1,2-distearoylpalmitin	
STPP	sodium tripolyphosphate	23,850-3
Super-Hydride®	lithium triethylborohydride	17,972-8
T	thymidine	13,199-7
2,4,5-T	2,4,5-trichlorophenoxyacetic acid	19,712-2
TAC	triallyl cyanurate	11,423-5
TAMA	*N*-methylanilinium trifluoroacetate	21,008-0
TAME	*N*α-*p*-tosyl-L-arginine methyl ester hydrochloride	T4,350-8
TAMM	tetrakis(acetoxymercuri)methane	
TAPA	α-(2,4,5,7-tetranitro-9-fluorenylidene-aminoxy)propionic acid (+ or −)	
TAPS	3-[tris(hydroxymethyl)methylamino]-1-propanesulfonic acid	21,993-2
TAPSO	3-[*N*-(tris(hydroxymethyl)methylamino]-2-hydroxypropanesulfonic acid	
TAS-	tris(diethylamino)sulfonium-	
TB	thexylborane	22,079-5
TB	thymol blue	11,454-5 86,136-7
2,3,6-TBA	2,3,6-trichlorobenzoic acid	
TBAB	tetrabutylammonium bromide	19,311-9
TBAC	*tert*-butylacetyl chloride	B8,880-2
TBAF	tetrabutylammonium fluoride	21,614-3 24,151-2
TBAF	tetra-*n*-butylammonium fluoroborate	21,796-4
TBAHS	tetrabutylammonium hydrogen sulfate	15,583-7
TBAP	tetra-*n*-butylammonium perchlorate	
TBAS	tetra-*n*-butylammonium succinimide	
TBC	*p*-*tert*-butylcatechol	12,424-9
TBDA	thexylborane-*N*,*N*-diethylaniline	
TBDMS-	(see TBS-)	
TBDMSCl	(see TBSCl)	
TBDMSI	1-(*tert*-butyldimethylsilyl)imidazole	25,023-6
TBE	tetrabromoethane	13,527-5 18,557-4
TBHC	*tert*-butyl hypochlorite	
TBHP	*tert*-butyl hydroperoxide	18,471-3 21,312-8
TBO	3-[(trimethylsilyl)oxy]-3-buten-2-one	
TBP	tri-*n*-butyl phosphate	15,861-5 24,049-4
TBP	triphenylbutylphosphonium bromide	B10,280-6
TBS-	*tert*-butyldimethylsilyl-	
TBSCl	*tert*-butyldimethylsilyl chloride	19,050-0
TBTD	tetrabutylthiuram disulfide	
TBUP	tri-*n*-butylphosphine	T4,948-4
TC	2,3,4,5-tetraphenylcyclopentadienone	T2,580-1
TCA	trichloroacetic acid	11,611-4
TCB	trichlorobenzene (usually 1,3,5)	T5,460-7
Tce	2,2,2-trichloroethyl-	
Tcec	β,β,β-trichloroethoxycarbonyl-	
TcecCl	β,β,β-trichloroethoxycarbonyl chloride	14,207-7
TCI	terephthaloyl chloride	12,087-1
TCNE	tetracyanoethylene	T880-9
TCNP	11,11,12,12-tetracyanopyreno-2,7-quinodimethane	
TCNQ	7,7,8,8-tetracyanoquinodimethane	15,763-5
TCP	tricresyl phosphate	26,891-7
TCP	trichlorophenol (usually 2,4,5 or 2,4,6)	15,651-5 T5,530-1
TCTFP	1,1,2,2-tetrachloro-3,3,4,4-tetrafluoro-cyclobutane	
TDI	tolylene diisocyanate	21,683-6
TDP	4,4′-thiodiphenol	21,617-8
TEA	triethanolamine	T5,830-0
TEA	triethylaluminum	19,270-8 25,266-2 25,716-8 25,718-4 25,717-6
TEA	triethylamine	13,206-3 23,962-3
TEAB	triethylammonium bicarbonate	
TEAE-Cellulose	triethylaminoethyl cellulose	
TEAS	tetraethylammonium succinimide	
TEBA	benzyltriethylammonium chloride	14,655-2
TED	(see DABCO)	
TEG	triethylene glycol	T5,945-5
TEM	triethylenediamine (1,4-diazabicyclo-[2.2.2]octane)	D2,780-2
TEMPO	2,2,6,6-tetramethylpiperidinooxy, free radical	21,400-0
TES-	triethylsilyl-	
TES (Aldrich)	2-[tris(hydroxymethyl)methylamino]-1-ethanesulfonic acid	22,320-4
TES (Fluka)	*N*,*N*,*N*′,*N*′-tetraethylsulfamide	25,958-6
TETD	tetraethylthiuram disulfide	T1,160-6
TETM	tetraethylthiuram monosulfide	
TETN	triethylamine	13,206-3 23,962-3
TFA	trifluoroacetic acid	T6,220-0
TFA	trifluoroacetyl-	
TFAA	trifluoroacetic anhydride	10,623-2
TFA-ME	methyl trifluoroacetate	24,983-1
TFE	2,2,2-trifluoroethanol	T6,300-2
TFMC-Eu	tris[3-(trifluoromethylhydroxy-methylene)-*d*-camphorato]•Eu(III)	17,649-4
TFMC-Pr	tris[3-(trifluoromethylhydroxy-methylene)-*d*-camphorato]•Pr(III)	17,770-9
THAM	tris(hydroxymethyl)aminomethane	15,456-3 T8,760-2
THE	tetrahydrocortisone	
THF	tetrahydrofuran	14,722-2 17,881-0 18,656-2 24,288-8
THF	tetrahydrofolic acid	
THFA	tetrahydrofurfuryl alcohol	18,539-6 T1,265-3
THFC-Eu	tris[3-(heptafluoropropylhydroxy-methylene)-*d*-camphorato]•Eu(III)	16,474-7
THIP	4,5,6,7-tetrahydroisoxazolo[5,4-*c*]-pyrimidin-3(2*H*)-one	
THP	tetrahydropyran (or tetrahydropyranyl)	T1,440-0
Thr	threonine	T3,420-7
TIBA	triiodobenzoic acid (usually 2,3,5)	12,097-9
TIBA	triisobutylaluminum	19,271-6 25,720-6 25,721-4
TIPSCl	1,3-dichloro-1,1,3,3-tetraisopropyl-disiloxane	23,420-6
TLCK	1-chloro-3-tosylamido-7-amino-2-heptanone hydrochloride	85,751-3
TMA	trimethylaluminum	19,804-8 25,722-2 25,723-0
TMAC	trimellitic anhydride monoacid chloride	T6,802-0
TMAEMC	2-trimethylammoniumethylmethacrylic chloride	
TMAT	tetramethylammonium tribromide	
TMAT	tris-2,4,6-[1-(2-methyl)aziridinyl]-1,3,5-triazine	
TMB (Aldrich)	3,3′,5,5′-tetramethylbenzidine	86,033-6 86,151-0
TMB	*N*,*N*,*N*′,*N*′-tetramethylbenzidine	T1,980-1
TMB-4	1,1′-trimethylenebis[4-(hydroxyimino-methyl)pyridinium bromide]	
TMBA	3,4,5-trimethylbenzaldehyde	
TMC	3,3,5-trimethylcyclohexanol	

Acronym	Description	Aldrich Cat. No.
TMCS (Aldrich)	(see TMSCl)	
TMEDA	*N,N,N′,N′*-tetramethylethylenediamine	T2,250-0
TMG	methyl β-D-thiogalactoside	
TMM	trimethylenemethane	
TMO	trimethylamine *N*-oxide	17,686-9
TMP	2,2,6,6-tetramethylpiperidine	11,575-4
TMP	thymidine 5′-monophosphate	
TMPTA	trimethylolpropane triacrylate	24,680-8
TMPTMA	trimethylolpropane trimethacrylate	24,684-0
TMS-	trimethylsilyl-	
TMS	tetramethylsilane	T2,400-7
TMSCl	trimethylsilyl chloride	C7,285-4
TMSCN	trimethylsilyl cyanide	21,284-9
TMSDEA	*N,N*-diethyl-1,1,1-trimethylsilylamine	12,725-6
TMTD	tetramethylthiuram disulfide	T2,420-1
TMTM	tetramethylthiuram monosulfide	
TNBA	tri-*n*-butylaluminum	
TNBT	tetranitro blue tetrazolium	13,316-7
TNF	2,4,7-trinitrofluorenone	T8,080-2
TNM	tetranitromethane	T2,500-3
TNPA	tri-*n*-propylaluminum	25,724-9
TNS	6-(*p*-toluidino)-2-naphthalenesulfonic acid, potassium salt	19,426-3
TNT	2,4,6-trinitrotoluene	
Tol	toluene	15,500-4 17,941-8 17,996-5 24,451-1
TOPO	tri-*n*-octylphosphine oxide	22,330-1
TosMIC	tosylmethyl isocyanide	18,820-4
TP	thymolphthalein	11,455-3
TPB	1,1,4,4-tetraphenyl-1,3-butadiene	17,870-5 18,521-3
TPC	thymolphthalein complexone	22,326-3
TPCD	tetraphenylcyclopentadienone	T2,580-1
TPCK	L-1-*p*-tosylamino-2-phenylethyl chloromethyl ketone	85,725-4
TPE	tetraphenylethylene	T2,620-4
TPN	triphosphopyridine nucleotide, sodium salt	85,659-2
TPNH	reduced triphosphopyridine nucleotide, sodium salt	
TPP	tetraphenylporphyrin	16,099-7 24,736-7
TPP	triphenyl phosphate	10,585-6 24,128-8
TPP	triphenylphosphine	T8,440-9
TPS-	2,4,6-triisopropylbenzenesulfonyl-	
TPS	triphenylsulfonium chloride	
TPSCl (or TPS)	2,4,6-triisopropylbenzenesulfonyl chloride	11,949-0
TPTZ	2,4,6-tris(2′-pyridyl)-*s*-triazine	15,528-4
TRIAMO	triaminosilane	
Tricine	*N*-[tris(hydroxymethyl)methyl]glycine	16,378-3
Tr	trityl	
Triglyme	triethylene glycol dimethyl ether	T5,980-3
TRIS	tris(hydroxymethyl)aminomethane	15,456-3 T8,760-2
TRITC	tetramethylrhodamine isothiocyanate	
TrOC	(see Tcec)	
Trp	tryptophan	T9,020-4
TRPGDA	tripropyleneglycol diacrylate	24,683-2
Ts	tosyl (or *p*-toluenesulfonyl-)	
TSIM	*N*-trimethylsilylimidazole	15,358-3
TSNI	1-(*p*-toluenesulfonyl)-4-nitroimidazole	
TSP	tribasic sodium phosphate	22,200-3
TSPP	tetrasodium pyrophosphate	22,136-8
TTC	2,3,5-triphenyltetrazolium chloride	T8,485-9
TTEGDA	tetraethyleneglycol diacrylate	24,682-4
TTF	tetrathiafulvalene	18,318-0
TTFA	thallium(III) trifluoroacetate	15,053-3
TTN	thallium(III) nitrate	16,301-5
Tyr (or Tyr-OH)	tyrosine	T9,040-9
Tyr-OMe	tyrosine methyl ester	T9,080-8
U	uracil	13,078-8
U	uridine	U288-1
UDMH	*unsym*-dimethylhydrazine	D16,160-8
UDP	uridine 5′-diphosphate	85,211-2
UMP	uridine 5′-monophosphate	85,210-4
UTP	uridine 5′-triphosphate	85,213-9
Val	valine	V70-5
VMA	DL-4-hydroxy-3-methoxymandelic acid	14,880-6
VTC	vinyltrichlorosilane	10,487-6
VTEO	vinyltriethoxysilane	17,556-0
VTMO	vinyltrimethoxysilane	23,576-8
VTMOEO	vinyltris(2-methoxyethoxy)silane	
XDP	xanthosine 5′-diphosphate	
XMP	xanthosine 5′-monophosphate	
XTP	xanthosine 5′-triphosphate	
Xy	xylene	X104-0 13,490-2 18,556-6 13,444-9 21,473-6 24,045-1 24,764-2
Z-	(see CBn)	
ZDBC	zinc dibutyldithiocarbamate	
ZDEC	zinc diethyldithiocarbamate	
ZDMC	zinc dimethyldithiocarbamate	
ZPCK	*N*-CBZ-L-phenylalanine chloromethyl ketone	86,079-4

About the Authors

A native of Milwaukee, Professor Guido H. Daub received the Ph.D. degree from the University of Wisconsin in 1949. He has been a member of the faculty of the University of New Mexico since 1949, attaining the rank of Associate Professor of Chemistry in 1955 and Professor of Chemistry in 1963. He was Director of the University of New Mexico Graduate Center in Los Alamos from 1958 to 1963 and Chairman of the Chemistry Department from 1970 to 1981.

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S. Barrie Walker specializes in chemical information and is an Information Officer with the Plant Protection Division of ICI. During the 1960's he was a chemist with ICI Pharmaceuticals Division and for three years worked on the ICI CROSSBOW system, preparing an inventory of all ICI's test chemicals. He was the systems and database manager for the CAOCI project, involving work groups from many of the leading UK pharmaceutical companies (*J. Chem. Inf. Comp. Sci.* **1983**, *23*, 3-5). For many years he has taught WLN in tutorials at many UK universities on behalf of the Chemical Notation Association (UK). He is Assistant Editor of the British Crop Protection Council's publication "The Pesticide Manual," now in its seventh edition. He is currently involved in the conversion of ICI databases into MACCS (Molecular Access System from Molecular Design, Ltd. of Hayward, California).