

# NAMED RULES IN CHEMISTRY

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<http://www.chem.yorku.ca/NAMED/>

## Kurt Alder



10 July 1902 - 20 June 1958

German, b. Konigshütte, Upper Silesia, now Chorzow, Poland

Nobel Prize Chemistry 1950

### Alder Rule

Alder, K.; Günzl, W. *Chem. Ber.* **1960**, 93, 809

### Biographical References:

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Gunzl, M.; Gunzl, W., *Angew. Chem.* **1960**, 72, 219

Abbott, David (ed.), *The Biographical Dictionary of Scientists: Chemists*, Peter Bedrick Books: New York, 1983

## Richard McLean Badger

4 May 1896 – 26 November 1974

American, b. Elgin, Illinois, USA

Badger rules, Badger equation, Badger constants

Badger, R.M., *J. Chem. Phys.* **1934**, 2, 128

Badger, R.M., *J. Chem. Phys.* **1935**, 3, 710

Biographical references:

Wulf, O.R., *Biog. Mem. Natl. Acad. Sci.* **1987**, 56, 3

## Sir Jack Edward Baldwin

8 August 1938 -

British, b. Bow Bells, U.K.

Baldwin's Rules

Baldwin, J.E., *J. Chem. Soc. Chem. Commun.* **1976**, 734

Baldwin, J.E.; Thomas, R.C.; Kruse, L.I.; Silberman, L., *J. Org. Chem.* **1977**, 42, 3846

Biographical References:

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## Sidney William Benson

26 September 1918 -

American, b. New York, New York, USA

Benson's Additivity Rule

Benson, S.W.; Cruickshank, F.R.; Golden, D.M.; Haugen, G.R.; O'Neal, H.E.;

Rodgers, A.S.; Shaw, R.; Walsh, R., *Chem. Rev.* **1969**, 69, 279

Benson, S.W., *J. Chem. Educ.* **1965**, 42, 502

Biographical References:

R.R. Bowker's *American Men & Women of Science 1998 - 99*, 20th ed., R.R. Bowker: New Providence, New Jersey, 1998

## Konrad Julius Brecht

29 March 1855 - 21 September 1937

German, b. Aachen, Germany

### Brecht's Rule

Brecht, K.J., *Ann. Chem.* **1924**, 437, 1

### Biographical References:

Daintith, J.; Mitchell, S.; Tootill, E.; Gjersten, D., *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994

## Robert Sidney Cahn

9 June 1899 – 15 September 1981

British, b. ?

### Cahn-Ingold-Prelog Rules

Cahn, R.S.; Ingold, C.K., *J. Chem. Soc.* **1951**, 612

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### Biographical References:

Prelog, V.; Helmchen, G., *Angew. Chem. Int. Ed. Engl.* **1982**, 21, 567

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## Thomas Carnelley

22 October 1854 - 27 August 1890

British, b. Manchester, England

### Carnelley's melting point-molecular symmetry rule

Carnelley, T. *Phil. Mag.* **1882**, 13[5], 112

Carnelley, T. *Phil. Mag.* **1882**, 13[5], 180

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### Biographical references:

*Pogg.* 3, 237; 4, 222

Anon. *J. Chem. Soc.* **1890**, 59, 455

H.E.R.; P.P.B. *Nature* **1890**, 42, 522

## William Wallace Cleland

6 January 1930 -

American, b. Baltimore, Maryland, USA

### Cleland rules

Cleland, W.W., *Biochim. Biophys. Acta* **1963**, 67, 188

### Biographical references:

R.R. Bowker's *American Men & Women of Science 1998 - 99*, 20th ed., R.R.

Bowker: New Providence, New Jersey, 1998

## Gerhard Ludwig Closs

1 May 1928 - 24 May 1992

German - American, b. Wuppertal, Germany

### Kaptein-Closs Rules

Closs, G.L., *J. Am. Chem. Soc.* **1969**, 91, 4552

Kaptein, R.; Oosterhoff, L.J., *Chem. Phys. Lett.* **1969**, 4, 214

### Biographical References:

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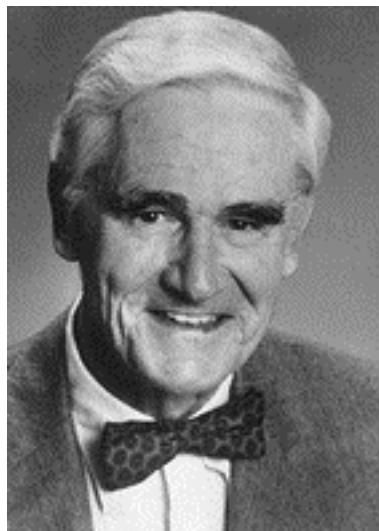
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Roth, H.D., *J. Phys. Chem.* **1993**, 97, 13036

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## Donald J. Cram



22 April 1919 – 17 June 2001  
American, b. Chester, Vermont, USA

Nobel Prize Chemistry 1987

#### Cram's Rule

Cram, D.J.; Elhafez, F.A.A., *J. Am. Chem. Soc.* **1952**, 74, 5828

Cram, D.J.; Kopecky, K.R., *J. Am. Chem. Soc.* **1959**, 81, 2748

#### Biographical References:

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Cram, D.J., *From Design to Discovery*, ACS: Washington, 1990

Byrum, A.L. *Chem. Eng. News* **2001**, 79(30), 38

### Mostafa Amr El-Sayed

8 May 1933 -

Egyptian-American, b. Zifta, Egypt

#### El-Sayed's Rule

El-Sayed, M.A., *Acc. Chem. Res.* **1968**, 1, 8

Lower, S.K.; El-Sayed, M.A., *Chem. Rev.* **1966**, 66, 199

#### Biographical References:

McMurray, Emily J. (ed.), *Notable Twentieth-Century Scientists*, Gale Research, Inc.: New York, 1995

## Kasimir Fajans



27 May 1887 - 18 May 1975

Polish, b. Warsaw, Poland

### Fajans' Rules on Bonding

Fajans, K., *Umschau* **1915**, 19, 661

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## Louis Frederick Fieser

7 April 1899 - 25 July 1977

American, b. Columbus, Ohio, USA

### Biographical References:

Gates, M., *Biog. Memoirs Natl. Acad. Sci.* **1994**, 65, 161

## Mary Peters Fieser

27 May 1909 - 22 March 1997

American, b. Atchison, Kansas, USA

### Biographical References:

Daintith, J.; Mitchell, S.; Tootill, E.; Gjersten, D., *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994

### Fieser-Woodward UV Absorption Rules

Fieser, L.F.; Fieser, M.; Rajagopalan, S., *J. Org. Chem.* **1948**, 13, 800

Woodward, R.B., *J. Am. Chem. Soc.* **1941**, 63, 1123

Woodward, R.B., *J. Am. Chem. Soc.* **1942**, 64, 72; 76

Fieser, L.F.; Fieser, M., *Steroids*, Reinhold Publ. Corp.: New York, 1959

## George Gamow

4 March 1904 - 20 August 1968

Ukrainian, b. Odessa, Ukraine

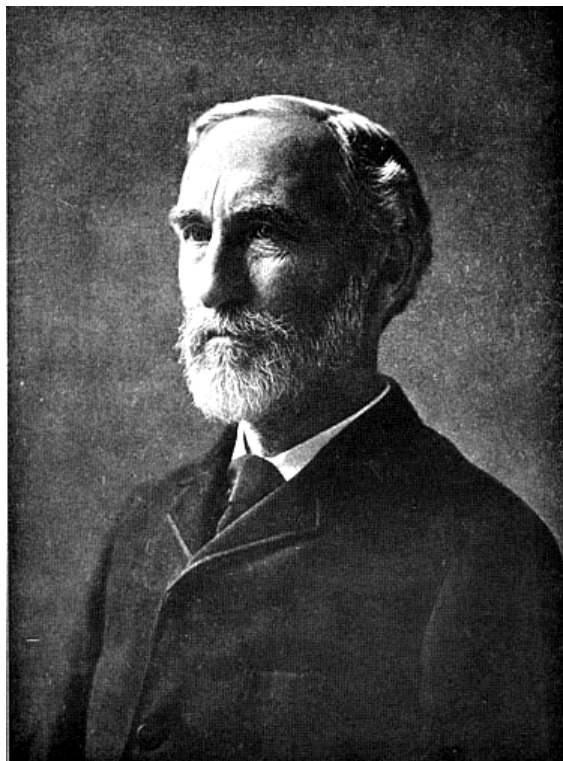
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### Biographical References:

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## Josiah Willard Gibbs



11 February 1839 - 28 April 1903  
American, b. New Haven, Connecticut, USA

### Gibbs Phase Rule

Gibbs, J.W., *Trans. Conn. Acad.* **1875-1876**, 3, 108

Gibbs, J.W., *Trans. Conn. Acad.* **1877-1878**, 3, 353

Gibbs, J.W., *Amer. J. Sci.* **1878**, 16, 441

### Biographical References:

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Klein, M.J. in Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1972, Vol. 5, 386

## Roald Hoffmann



18 July 1937 -

Polish-American, b. Zloczow, Poland, now Zolochev, Ukraine

Nobel Prize Chemistry 1981

Woodward-Hoffmann Rules

Woodward, R.B.; Hoffmann, R., *J. Am. Chem. Soc.* **1965**, 87, 395

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August Wilhelm von Hofmann



8 April 1818 - 2 May 1892

German, b. Giessen, Germany

### Hofmann's Rule

Hofmann, A.W., *Ann. Chem.* **1851**, 78, 253

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### Biographical References:

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Partington, J.R., *A History of Chemistry*, Vol. IV, Macmillan and Co., Ltd.: London, 1964, p. 432, 925

## Erich Armand Arthur Joseph Hückel

9 August 1896 - 16 February 1980

German, b. Berlin-Charlottenburg, Germany

### Hückel's Rules

Hückel, E., *Z. Physik* **1931**, 70, 204

Hückel, E., *Z. Physik* **1932**, 76, 628

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## Claude Silbert Hudson

26 January 1881 - 27 December 1952

American, b. Atlanta, Georgia, USA

### Hudson's rules

Hudson, C.S. *J. Am. Chem. Soc.* **1924**, 46, 462; 477; 483

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Small, L.F.; Wolf from, M.L. *Biog. Mem. Natl. Acad. Sci. USA* **1958**, 32, 181

## Friedrich Hermann Hund

4 February 1896 – 31 March 1997

German, b. Karlsruhe, Germany

### Hund's Rules

Hund, F., *Z. Physik***1925**, 33, 345

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### Biographical References:

Rechenberg, H., *Physics Today***1997**, 50, 126

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## Sir Christopher Kelk Ingold

28 October 1893 - 8 December 1970

British, b. Forest Gate, London, England

### Cahn-Ingold-Prelog Rules

see Robert Sidney Cahn

### Biographical References:

Shoppee, C.W., *Biog. Memoirs Fellows Roy. Soc.* **1972**, 18, 349

Cahn, R.S.; Prelog, V., *Helv. Chim. Acta* **1971**, 54, 2206

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## R. Kaptein

Kaptein-Closs Rules

see Gerhard Ludwig Closs

Kaptein's Rules

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Biographical References:

## Michael Kasha

6 December 1920 -

American, b. Elizabeth, New Jersey, USA

Kasha's Rule

Kasha, M., *Discuss. Faraday Soc.* **1950**, 9, 14

Kasha-Vavilov Rule

Vavilov, S.I., *Z. Physik* **1927**, 42, 311

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Biographical References:

Press, Jaques Cattell (ed.) *American Men & Women of Science*, 14th ed., R.R. Bowker Co.: New York, 1979

## Otto Laporte

23 July 1902 - 28 March 1971

German, b. Mainz, Germany

## Laporte rule for dipole radiation

Laporte, O.; Meggers, W.F., *J. Opt. Soc. Am.* **1925**, 11, 459

### Biographical references:

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<http://www.library.yale.edu/pubstation/databases/biogen.html>

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*Pogg.* **1974**, 7B(L-M), 2725 - 6

## Vladimir Vasilevich Markovnikov (also Markownikoff)

22 December 1838 - 11 February 1904

Russian, b. Knyaginino, Nizhegorodskaya (now Gorki region), Russia

### Markovnikov's Rule

Markownikoff, V.V., *Ann. Chem.* **1870**, 153, 228

### Biographical References:

Mills, E.J., *J. Chem. Soc.* **1905**, 87, 597

Maurer, James F. (ed.) *Concise Dictionary of Scientific Biography*, Charles Scribner's Sons: New York, 1981

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## Earl Leonard Muetterties

23 June 1927 -

American, b. Elgin, Illinois, USA

### Muetterties rule

Muetterties, E.L.; Mahler, W.; Schmutzler, R., *Inorg. Chem.* **1963**, 2, 613

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Bergman, R.G.; Parshall, G.W.; Raymond, K.N., *Biog. Memoirs Natl. Acad. Sci.* **1994**, 63, 383

## Eugen Friedrich Wilhelm Müller

6 June 1905 - 7 July 1976

German, b. Merken, near Düren, Germany

Müller-Müller-Rodloff biradical rule

Müller, E.; Müller-Rodloff, I. *Ann. Chem.* **1935**, 517, 134

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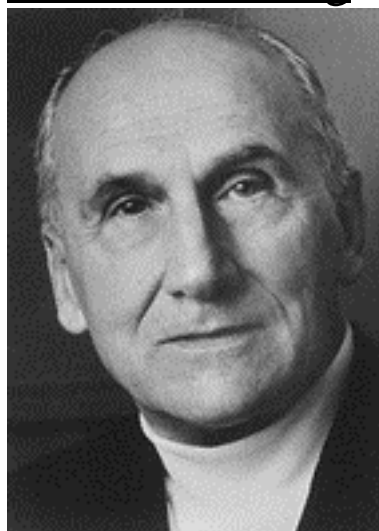
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Biographical references:

Pötsch, W.R.; Fischer, A.; Müller, W., *Lexikon bedeutender Chemiker*, Verlag: Frankfurt, 1989

## Vladimir Prelog



23 July 1906 - 7 January 1998

Yugoslavian-Swiss, b. Sarajevo, Bosnia and Hercegovina

Nobel Prize Chemistry 1975

Cahn-Ingold-Prelog Rules

see Robert Sidney Cahn

Prelog's Rule

Prelog, V. *Helv. Chim. Acta* **1953**, 36, 308

### Biographical References:

Eschenmoser, A., *Chimia* **1998**, 52, 74  
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### Otto Redlich

4 November 1896 - 1978  
Austrian, b. Vienna, Austria

#### Teller-Redlich product rule

Redlich, O., *Z. Physik. Chem. B* **1935**, 28, 371

#### Biographical references:

Pogg. **1938**, 6(3), 2137  
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### Martin André Rosanoff

28 December 1874 - 30 July 1951  
Ukrainian-American, b. Nicolajeff, Ukraine

#### Rosanoff-Fischer projection rules

Rosanoff, M.A. *J. Am. Chem. Soc.* **1906**, 28, 525  
Rosanoff, M.A. *Z. Physik. Chem.* **1906**, 56, 565  
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#### Biographical references:

Anon., *School and Society*, **1951**, 74, 94  
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*Pogg.* 5, 1064; 6(3), 2214; 7B(7), 4485

### Aleksandr Mikhailovich Saytzeff (also Zaitsev, Saytzev)

20 June 1841 - 2 September 1910

Russian, b. Kazan, Russia

### Saytzeff's Rule

Saytzeff, A., *Ann. Chem.* **1875**, 179, 296

### Biographical References:

Lewis, D.E., *J. Chem. Educ.* **1994**, 71, 93

Partington, J.R., *A History of Chemistry*, Vol. IV, Macmillan and Co., Ltd.: London, 1964, p. 769

## James Nelson Shoolery

25 June 1925 -

American, b. Worland, Wyoming, USA

### Shoolery NMR Rule

Shoolery, J.N., *J. Chem. Phys.* **1953**, 21, 1899

Dailey, B.P.; Shoolery, J.N., *J. Am. Chem. Soc.* **1955**, 77, 3977

### Biographical References:

Anon., *Chem. Eng. News* **1965**, 43(9), 76

R.R. Bowker's *American Men & Women of Science 1998 - 99*, 20th ed., R.R. Bowker: New Providence, New Jersey, 1998

## Edward Teller



15 January 1908 - 09 September 2003  
Hungarian-American, b. Budapest, Hungary

Gamow-Teller Selection Rule  
see George Gamow

Biographical References:

Daintith, J.; Mitchell, S.; Tootill, E.; Gjersten, D., *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994

Sergey Ivanovich Vavilov

24 March 1891 - 25 January 1951  
Russian, b. Moscow, Russia

Kasha-Vavilov Rule  
see Michael Kasha

Biographical References:

Dorfman, J. in Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1981, Vol. 13, 598

Daintith, J.; Mitchell, S.; Tootill, E.; Gjersten, D., *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994

Schulz, W. *Chem. Eng. News* **2003**, 81(37), 9

## Paul Walden (Pavel Ivanovich)



*P. Walden.*

26 July 1863 - 22 January 1957  
Latvian-German, b. Cesis, Latvia

Walden's Rule; Walden's inversion

Walden, P., *Chem. Ber.* **1893**, 26, 210

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Gunther, P., *Angew. Chem.* **1933**, 46, 497

Partington, J.R., *A History of Chemistry*, Vol. IV, Macmillan and Co., Ltd.:  
London, 1964, p. 855

## Eugene Paul Wigner



17 November 1902 - 1 January 1995  
Hungarian-American, b. Budapest, Hungary

Nobel Prize Physics 1963

### Wigner's Rules

Wigner, E., *Z. Physik* **1927**, 40, 883

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### Wigner tunneling correction

Wigner, E., *Z. Physik. Chem. B* **1932**, 19, 203

### Biographical References:

Seitz, F.; Vogt, E.; Weinberg, A.M., *Biog. Memoirs Natl. Acad. Sci.* **1998**, 74,  
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Inc.: New York, 1995

Seitz, F.; Vogt, E.; Weinberg, A.M. *Biog. Memoirs Fellows Roy. Soc.* **2000**, 46, 577

## Robert Burns Woodward



10 April 1917 - 8 July 1979  
American b. Boston, Massachusetts, USA

Nobel Prize Chemistry 1965

Woodward-Hoffmann Rules

See Roald Hoffmann

Fieser-Woodward Rules

see Louis Frederick Fieser and Mary Fieser

Biographical References:

Lord Todd; Cornforth, Sir J., *Biog. Memoirs Fellows Roy. Soc.* **1981**, 27, 629

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