

THE  
MERCK  
INDEX  
★  
TWELFTH EDITION



# THE MERCCK INDEX

AN ENCYCLOPEDIA OF  
CHEMICALS, DRUGS, AND BIOLOGICALS

TWELFTH EDITION

Susan Budavari, *Editor*  
Maryadele J. O'Neil, *Senior Associate Editor*  
Ann Smith, *Associate Editor*  
Patricia E. Heckelman, *Assistant Editor*  
Joanne F. Kinneary, *Assistant Editor*

*Published by*  
*Merck Research Laboratories*  
*Division of*

**MERCK & CO., INC.**

Whitehouse Station, NJ

1996

**MERCK & CO., INC.**  
Whitehouse Station, N.J.  
U.S.A.

---

1st Edition—1889  
2nd Edition—1896  
3rd Edition—1907  
4th Edition—1930  
5th Edition—1940  
6th Edition—1952  
7th Edition—1960  
8th Edition—1968  
9th Edition—1976  
10th Edition—1983  
11th Edition—1989

---

Library of Congress Catalog  
Card Number 89-60001  
ISBN Number 0911910-12-3

First Printing—March 1996  
Second Printing—April 1997

Copyright © 1996 by MERCK & CO., INC.  
All rights reserved. Copyright under the Universal Copyright Convention  
and the International Copyright Convention.  
Copyright reserved under the Pan-American Copyright Convention.

Printed in the U.S.A.

With t  
century  
ciplinary  
lished in  
cation ov  
the text  
biochem  
tion of in  
of discip  
mind, bu  
lence in .

This e  
which m  
ticals, ov  
and anot  
tional 1,  
almost 1  
hundred

A num  
lished in  
chemical  
chemical  
scriptors  
readership  
1983 in th  
of Chemi  
panded. S  
some of t  
and immu

In reco  
reference  
major onl  
which is t

Compa  
unparallel  
ronment,  
refer to Th  
by Merck  
the traditio

## Abbreviations and Selected Definitions

*Please consult the Glossary (Misc. Tables Section) for additional definitions.*

A	adenine; adenosine; absorbance (extinction)	A.S.T.M.	American Society for Testing Materials
Å	Angstrom units	as-, asym-	asymmetrical, unsymmetrical
AAT	$\alpha_1$ -antitrypsin	at.	atomic
Ab	antibody	ATCC	American Type Culture Collection
abs	absolute; absorption	atm, atmos	atmosphere(s), atmospheric
abs config	absolute configuration	at. no.	atomic number
abstr	abstract	ATP	adenosine triphosphate
Abu	$\alpha$ -aminobutyric acid	ATPase	adenosine triphosphatase
Ac	acetyl $\text{CH}_3\text{CO}$ —	at. wt.	atomic weight
acc	according	BAN	British Approved Name
ACE	angiotensin converting enzyme	B cell	bone marrow or bursa of Fabricius derived cell
Acetyl CoA	acetyl coenzyme A	BCG	Bacillus Calmette-Guerin
Ac <sub>2</sub> O	acetic anhydride	Bé	Baumé (a specific gravity scale)
AcOEt	ethyl acetate	Beilstein	Beilstein's Handbuch der Organischen Chemie
AcOH	acetic acid	Belg. pat.	Belgian patent
ACP	acyl carrier protein	Ber.	Chemische Berichte (Berichte der Deutschen Chemischen Gesellschaft)
A.C.S.	American Chemical Society	BGG	bovine gamma globulin
ACTH	adrenocorticotropic hormone	biol	biological
AcylSCoA	acyl coenzyme A	B.I.O.S.	British Intelligence Objectives Subcommittee
ADCC	antibody-dependent cellular cytotoxicity	BOC	tert-butoxycarbonyl
add(n)	adding, addition	B.O.D.	biochemical oxygen demand
Ade	adenine	boil.	boiling
ADH	alcohol dehydrogenase	bp	basepair; boiling point; boils at; boiling at Example: bp <sub>70</sub> 48° means boils at 48°C if the pressure is 70 mm Hg
ADP	adenosine diphosphate	B.P.	British Pharmacopeia
AEC	(United States) Atomic Energy Commission	B.P.C.	British Pharmaceutical Codex
Ag	antigen, silver	Brit. pat.	British patent
AI	anaphylotoxin inhibitor	BRM	biological response modifier
AIDS	acquired immunodeficiency syndrome	BSA	bovine serum albumin
Ala	alanine	Btu	British thermal units
alc, alcohol	alcohol(ic); ethanol; ethyl alcohol	Bu	butyl
ALG	anti-lymphocyte globulin	Bz	benzoyl $\text{C}_6\text{H}_5\text{CO}$ —
alk	alkali(ne)	BzH	benzaldehyde
$[\alpha]_D^{25}$	specific optical rotation at 25° C for D (sodium) line; absence of brackets indicates optical rotation of a liquid in a 1 decimeter cell, neat	BzOH	benzoic acid
ALS	anti-lymphocyte serum, amyotrophic lateral sclerosis	c	concentration by volume (g/100ml) after optical rotations only
$a_M$	molar absorptivity (concn in g-moles/l)	C	cytosine; cytidine; complement
amorph	amorphous	°C	Centigrade degrees; Celsius degrees
AMP	adenosine 5'-monophosphate (adenylic acid)	$C_p$	heat capacity (constant pressure)
cAMP	cyclic AMP	ca.	(circa) about
amps	ampules	C.A.	Chemical Abstracts
amt(s)	amount(s)	cal	calorie(s)
ANF	anti-nuclear factor; atrial natriuretic factor	calc(d)	calculate, calculated
anhydr	anhydrous	Can. pat	Canadian patent
anti	stereodescriptor, see Glossary	Cbz	carbobenzoxy
Ann.	Justus Liebig's Annalen der Chemie	cbc	complete blood count
APhA	American Pharmaceutical Association	cc	cubic centimeter(s) (milliliter)
approx	approximate(ly)	CCK	cholecystokinin
APT	alum precipitated toxoid	CD	circular dichroism
aq	aqueous	CDP	cytidine diphosphate
Ar	aryl	CEA	carcinoembryonic antigen
A.R.	analytical reagent	cf.	(confer) compare
ARC	AIDS related complex	CFA	complete Freund's adjuvant (same as FCA)
Archiv Exp. Pathol. Pharmakol.	Naunyn Schmiedebergs Archiv für Experimentelle Pathologie und Pharmakologie	CFT	complement fixation test
ArCO-	aromatic acyl radical	CHD	coronary heart disease
Arg	arginine	CHF	congestive heart failure
Asa	$\beta$ -carboxyaspartic acid	chem	chemical
Asn	asparagine	Chem. Commun.	Journal of the Chemical Society, Chemical Communications.
Asp	aspartic acid	Ci	curie
assoc(d)	association; associated	C.I.	Colour Index (British)
		cis-	stereodescriptor, see Glossary
		cm	centimeter(s)



CM-cellulose  
CMI  
CML  
CMP

CNS  
CoA or CoASH  
coll. vol.  
compd  
compn  
Con A  
conc(d)  
concn  
confg  
constit  
contd  
contg  
CoQ  
cor(r)  
corresp  
cp  
C.P.  
cpd  
crit press  
crit temp  
cryst  
crystn  
CSF

CTFA

CTP  
Cys  
Cyt  
d

d-  
D-

Da  
DEAE cellulose  
dec, decomp  
decompn  
deg  
deliquesc  
Δ (delta)

deriv  
determn  
DFP, DIFP, DIPP

Dha  
Dhb

diff  
dil(d), (n)  
distln  
dl-  
DL-

dm  
DMA  
DMARD  
DMF  
DMSO  
DNA  
cDNA  
mtDNA  
DNAase  
DNFB  
DNP

Dopa  
dp, DP

O-(carboxymethyl) cellulose  
cell-mediated immunity  
cell-mediated lymphocytotoxicity  
cytidine 5'-monophosphate (cytidylic acid)  
central nervous system  
coenzyme A  
collective volume  
compound  
composition  
concanavalin A  
concentrated  
concentration  
configuration  
constituent  
continued  
containing  
coenzyme Q (ubiquinone)  
corrected  
corresponding, corresponds  
centipoise  
chemically pure  
compound  
critical pressure  
critical temperature  
crystalline, crystals  
crystallization  
colony stimulating factor; cerebral spinal fluid  
Cosmetic, Toiletory and Fragrance Assoc.  
cytidine triphosphate  
cysteine  
cytosine  
density; specific gravity (d<sub>4</sub><sup>19</sup> specific gravity at 19° referred to water at 4°)  
*dextro* (rotatory), the opposite of *l dextro* (in configurational sense only), the opposite of *L*  
daltons  
O-(diethylaminoethyl)cellulose  
decompose(s), decomposition  
decomposition  
degree  
deliquescent  
indicates the locant of the double bond  
derivative  
determination  
diisopropyl fluorophosphate or diisopropyl phosphofluoridate  
dihydroalanine  
dehydrobutyrine, β-methyldehydroalanine  
difference  
dilute, diluted, dilution  
distillation  
racemic  
optically inactive by external compensation as contrasted with *meso-*  
decimeter(s)  
dimethylacetamide  
disease modifying antirheumatic drug  
dimethylformamide  
dimethylsulfoxide  
deoxyribonucleic acid  
complementary DNA  
mitochondrial DNA  
deoxyribonuclease  
2,4-dinitro-1-fluorobenzene  
2,4-dinitrophenyl or 2,4-dinitrophenol  
dihydroxyphenylalanine  
degree of polymerization (number of monomeric units in the polymer)

### D.R.P.

ds  
DTT  
dyn  
(E)-  
E<sub>1cm</sub><sup>1%</sup>  
E<sub>M</sub>  
EAA  
EAC  
EAE  
EC  
ECF-A  
ECG  
E.C. No.  
ed.  
ED  
Ed(s).  
EDTA  
EEG  
e.g.  
EGF  
*eidem*  
EINECS  
EKG  
ELISA  
emf  
en  
*endo-*  
EPA  
EPO  
ε (epsilon)  
eq  
equilib  
equiv  
esp  
esu  
Et  
η (eta)  
*et al.*  
etc.  
Et<sub>2</sub>O  
EtOH  
Eur. pat. Appl.  
ev  
evac  
evapn  
*exo-*  
expt(ly)  
ext(d)  
extern  
°F  
F-1-P  
F-6-P  
FA  
FAB  
FAD (FADH<sub>2</sub>)  
FCA  
Fd  
F.D.A.  
FD & C

(*Deutsches Reichs-Patent*)—German patent  
double stranded  
dithiothreitol  
dynes  
*entgegen*, stereodescriptor, *see Glossary*  
the absorbance of a solution containing one gram per 100 ml contained in a cell having an absorption path of one cm  
molar extinction coefficient (concn in g-moles/l)  
excitatory amino acid  
erythrocyte coated by antibody and complement  
experimental allergic encephalomyelitis  
electron capture  
eosinophil chemotactic factor of anaphylaxis  
electrocardiogram  
Enzyme Commission Number  
edition  
effective dose  
editor(s)  
ethylenediaminetetraacetic acid  
electroencephalogram (*exempli gratia*) for example  
epidermal growth factor  
the same (authors), plural of *idem*  
European Inventory of Existing Chemical Substances  
electrocardiogram  
enzyme-linked immunosorbent assay  
electromotive force  
ethylenediamine (in formulas)  
stereochemical descriptor, *see Glossary*  
Environmental Protection Agency  
erythropoietin; European Patent Office  
molar extinction coefficient (concn in g-moles/l); dielectric constant  
equation  
equilibrium  
equivalent  
especially  
electrostatic units of electrical charge  
ethyl C<sub>2</sub>H<sub>5</sub>—  
viscosity  
(*et alii*) and others  
*et cetera*  
ether  
ethyl alcohol  
European patent application  
electron volt  
evacuated  
evaporation  
stereochemical descriptor, *see Glossary*  
experimental(ly)  
extract, extracted  
externally  
Fahrenheit degrees; also Fourneau  
fructose 1-phosphate  
fructose 6-phosphate  
fatty acid  
fast atom bombardment  
flavin adenine dinucleotide (reduced form)  
Freund's complete adjuvant (same as CFA)  
ferredoxin  
Food and Drug Administration (U.S.A.)  
Food, Drug and Cosmetic (U.S.A.)

FDNB  
FDP  
ff  
FFA  
FFC  
FIA  
FIAT  
FMN (FMNH<sub>2</sub>)  
Fmoc  
*Fortschr. Chem. Org. Naturst.*  
fp  
FP  
FPLC  
Fr. pat.  
*Frdl.*  
Fru  
FSH  
FT  
g  
G  
G-1-P  
G-3-P  
G-6-P  
GABA  
gal  
Gal  
GalNAc  
γ (gamma)  
GC  
GDH  
GDP  
*gem-*  
geol  
Ger. pat.  
GH  
GI  
g/l  
Gla  
Glc  
GLC  
GlcA  
GlcN  
GlcNAc  
GlcUA  
Gln  
Glu  
GluA  
Gly  
Glycerol-3-P  
*Gmelin's*  
GMP  
cGMP  
GM-CSF  
gov't  
GP  
GRF, GHRF  
GSH  
GSSG  
GTP  
GU  
Gua

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.