

**Table 1. Standard List of Abbreviations**

$\alpha$	observed optical rotation in degrees	IR	infrared
$[\alpha]$	specific rotation [expressed without units; the actual units, deg mL/(g dm), are understood]	<i>J</i>	coupling constant (in NMR)
Ac	acetyl	k	kilo
acac	acetylacetonate	L	liter(s)
ADP	adenosine 5'-diphosphate	LCAO	linear combination of atomic orbitals
AIBN	2,2'-azobisisobutyronitrile	LDA	lithium diisopropylamide
AMP	adenosine 5'-monophosphate	LFER	linear free energy relationship
anhyd	anhydrous	LHMDS	lithium hexamethyldisilazane, lithium bis(trimethylsilyl)amide
AO	atomic orbital	LTMP	lithium 2,2,6,6-tetramethylpiperidide
Ar	aryl	LUMO	lowest unoccupied molecular orbital
atm	atmosphere(s)	$\mu$	micro
ATP	adenosine 5'-triphosphate	m	multiplet (spectral), meter(s), milli
ATPase	adenosinetriphosphatase	M	moles per liter
9-BBN	9-borabicyclo[3.3.1]nonyl	<i>m</i> -CPBA	<i>m</i> -chloroperoxybenzoic acid
9-BBN-H	9-borabicyclo[3.3.1]nonane	Me	methyl
Bn	benzyl	MEM	(2-methoxyethoxy)methyl
bpy	2,2'-bipyridyl	Mes	mesityl, 2,4,6-trimethylphenyl (not methanesulfonyl)
BOC, Boc	<i>tert</i> -butoxycarbonyl	MHz	megahertz
bp	boiling point	min	minute(s)
br	broad (spectral)	MINDO	modified intermediate neglect of differential overlap
Bu	butyl	mM	millimoles per liter
<i>s</i> -Bu	<i>sec</i> -butyl	MO	molecular orbital
<i>t</i> -Bu	<i>tert</i> -butyl	mol	mole(s)
°C	degrees Celsius	MOM	methoxymethyl
calcd	calculated	mp	melting point
cAMP	adenosine cyclic 3',5'-phosphate	mRNA	messenger RNA
CAN	ceric ammonium nitrate	Ms	methanesulfonyl (mesyl)
CBZ, Cbz	benzyloxycarbonyl	MS	mass spectrometry
CD	circular dichroism	<i>m/z</i>	mass to charge ratio (in mass spectrometry)
CI	chemical ionization (in mass spectrometry); configuration interaction (in MO theory)	NAD	nicotinamide adenine dinucleotide
CIDNP	chemically induced dynamic nuclear polarization	NADH	reduced NAD
cm	centimeter(s)	NBS	<i>N</i> -bromosuccinimide
CNDO	complete neglect of differential overlap	NCS	<i>N</i> -chlorosuccinimide
concd	concentrated	NMR	nuclear magnetic resonance
COSY	correlation spectroscopy	NOE	nuclear Overhauser effect
COT, cot	cyclooctatetraene	NOESY	nuclear Overhauser effect spectroscopy
Cp	cyclopentadienyl	Nu	nucleophile
$\delta$	chemical shift in parts per million downfield from tetramethylsilane	OD	optical density
d	day(s); doublet (spectral)	ORD	optical rotary dispersion
DABCO	1,4-diazabicyclo[2.2.2]octane	ot	oven temperature (in Kugelrohr distillations)
DBN	1,5-diazabicyclo[4.3.0]non-5-ene	PCC	pyridinium chlorochromate
DBU	1,8-diazabicyclo[5.4.0]undec-7-ene	PDC	pyridinium dichromate
DCC	<i>N,N</i> -dicyclohexylcarbodiimide	PE	photoelectron
DDQ	2,3-dichloro-5,6-dicyano-1,4-benzoquinone	Ph	phenyl
de	diastereomeric excess	PPA	poly(phosphoric acid)
DEAD	diethyl azodicarboxylate	ppm	parts per million (in NMR)
DEPT	distortionless enhancement by polarization transfer	PPTS	pyridinium <i>p</i> -toluenesulfonate
DIBALH	diisobutylaluminum hydride	Pr	propyl
DMAP	4-(dimethylamino)pyridine	<i>i</i> -Pr	isopropyl
DME	1,2-dimethoxyethane	q	quartet (spectral)
DMF	dimethylformamide	$R_f$	retention factor (in chromatography)
DMSO	dimethyl sulfoxide	rRNA	ribosomal RNA
DNA	deoxyribonucleic acid	rt	room temperature
E1	unimolecular elimination	s	singlet (NMR); second(s)
E2	bimolecular elimination	SET	single electron transfer
ED <sub>50</sub>	dose that is effective in 50% of test subjects	S <sub>N</sub> 1	unimolecular nucleophilic substitution
EDTA	ethylenediaminetetraacetic acid	S <sub>N</sub> 2	bimolecular nucleophilic substitution
ee	enantiomeric excess	S <sub>N</sub> '	nucleophilic substitution with allylic rearrangement
EI	electron impact (in mass spectrometry)	t	triplet (spectra)
ESR	electron spin resonance	TBDMS	<i>tert</i> -butyldimethylsilyl
Et	ethyl	TCNE	<i>tetracyanoethylene</i>
FAB	fast atom bombardment (in mass spectrometry)	Tf	trifluoromethanesulfonyl (triflyl)
FD	field desorption (in mass spectrometry)	TFA	trifluoroacetic acid
FID	flame ionization detection	TFAA	trifluoroacetic anhydride
FT	Fourier transform	THF	tetrahydrofuran
g	gram(s)	THP	tetrahydropyran
GC	gas chromatography	TIPS	triisopropylsilyl
GTP	guanosine 5'-triphosphate	TLC	thin layer chromatography
h	hour(s)	TMEDA	<i>N,N,N,N</i> -tetramethyl-1,2-ethylenediamine
HMO	Hückel molecular orbital	TMS	trimethylsilyl, tetramethylsilane
HMPA	hexamethylphosphoric triamide	Torr	1 mmHg, 1/760 atm
HOMO	highest occupied molecular orbital	Tr	triphenylmethyl (trityl)
HPLC	high-performance liquid chromatography	tRNA	transfer RNA
HRMS	high-resolution mass spectrum	Ts	tosyl, <i>p</i> -toluenesulfonyl
Hz	hertz	TS	transition state
ICR	ion cyclotron resonance	$t_R$	retention time (in chromatography)
INDO	incomplete neglect of differential overlap	UV	ultraviolet
IP	ionization potential		