Organic Reactions Standard Acronyms and Abbreviations

[α].....specific rotation

Å.....angstrom(s)

Ac.....acetyl

acac .....acetylacetonate

ACHN .....1,1-azobis(cyclohexanecarbonitrile)

Ad.....adamantyl

AIBN.....2,2'-azobis(isobutyronitrile)

Anal.....combustion elemental analysis

anhyd.....anhydrous

aq.....aqueous

Ar .....aryl

atm.....atmosphere(s)

BARF .....tetrakis[3,5-bis(trifluoromethyl)phenyl]borate

9-BBN .....9-borabicyclo[3.3.1]nonyl

9-BBN-H....9-borabicyclo[3.3.1]nonane

BINAP.....2,2′-bis(diphenylphosphino)-1,1′-binaphthyl

BINOL .....1,1'-bi-2-naphthol

Bn.....benzyl

Boc .....*tert*-butoxycarbonyl

BODIPY.....boron dipyrromethene

BOM .....benzyloxymethyl

bp.....boiling point; base pair

Bpin.....pinacol boryl ester

bpy.....2,2'-bipyridyl

BQ 1,4-benzoquinone

br .....broad (spectral)

brsm .....based on recovered starting material

Bs .....benzenesulfonyl

Bu, *n*-Bu.....normal (primary) butyl

i-Bu .....*iso*-butyl

s-Bu.....*sec*-butyl

t-Bu .....*tert*-butyl

Bus .....*t*-butylsulfonyl

Bz.....benzoyl

calcd.....calculated

CAN.....ceric ammonium nitrate

cat.....catalytic

Cbz.....benzyloxycarbonyl

CD.....circular dichroism

cm^{-1}.....wavenumber(s)

COD.....1,5-cyclooctadiene

concd.....concentrated

Cp.....cyclopentadienyl

Cp*.....1,2,3,4,5-pentamethylcyclopentadienyl

m-CPBA.....*meta*-chloroperoxybenzoic acid

CPME .....cyclopentyl methyl ether

CSA.....camphorsulfonic acid

CuTC.....copper(I) thiophene-2-carboxylate

CV.....cyclic voltammetry

δ .....chemical shift (parts per million) downfield from tetramethylsilane

d .....day(s); doublet (spectral); deci

d .....density

DABCO.....1,4-diazabicyclo[2.2.2]octane

dansyl.....5-(dimethylamino)-1-naphthalenesulfonyl

dba.....dibenzylideneacetone

DBN.....1,5-diazabicyclo[4.3.0]non-5-ene

DBU.....1,8-diazabicyclo[5.4.0]undec-7-ene

DCC.....*N,N*'-dicyclohexylcarbodiimide

DCE.....1,2-dichloroethane

DCM.....dichloromethane

DDQ.....2,3-dichloro-5,6-dicyano-1,4-benzoquinone

DEAD.....diethyl azodicarboxylate

DFT.....density functional theory

DIBALH....diisobutylaluminum hydride

DIPEA.....diisopropylethylamine (Hünig's base)

DMA.....*N,N*-dimethylacetamide

DMAP.....4-(*N,N*-dimethylamino)pyridine

DMDO.....dimethyldioxirane

DME.....1,2-dimethoxyethane

DMF.....dimethylformamide

DMPU.....1,3-dimethyl-3,4,5,6-tetrahydro-2(1*H*)-pyrimidinone

DMSO.....dimethyl sulfoxide

DMT.....4,4'-dimethoxytrityl (4,4'-dimethoxyltriphenylmethyl)

DNA.....deoxyribonucleic acid

DPEPhos....bis[(2-diphenylphosphino)phenyl]ether

dpm.....dipivaloylmethane

dppe.....1,3-bis(diphenylphosphino)ethane

dppp.....1,3-bis(diphenylphosphino)propane

dppf.....1,3-bis(diphenylphosphino)ferrocene

dr.....diastereomer ratio

dtbbpy.....4,4'-di-*tert*-2,2'-bipyridine

E1.....unimolecular elimination

E2.....bimolecular elimination

EDG.....electron donating group

EDTA.....ethylenediaminetetraacetic acid

EI.....electron impact

EPR.....electron paramagnetic resonance

equiv.....equivalent

er.....enantiomer ratio

ESI.....electrospray ionization

EWG.....electron withdrawing group

FAB.....fast atom bombardment

FD.....field desorption

FID.....flame ionization detector; free induction decay

Fmoc.....9-fluorenylmethoxycarbonyl

FT.....Fourier transform

GC.....gas chromatography

HAT.....hydrogen atom transfer

c-Hex.....cyclohexyl

n-Hex.....*n*-hexyl

HFIP.....hexafluoroisopropanol

HMPA.....hexamethylphosphoramide

HOMO.....highest occupied molecular orbital

HPLC.....high-performance liquid chromatography

HRMS.....high-resolution mass spectrometry

Hz.....hertz

IBX.....2-iodoxybenzoic acid

IMes .....1,3-bis(2,4,6-trimethylphenyl)imidazol-2-ylidene

IPr.....1,3-bis(2,6-diisopropylphenyl)imidazol-2-ylidene

IR.....infrared

J.....NMR spectroscopy coupling constant

Josiphos.....(*R*)-1-[(*S*)-2(diphenylphosphino)ferrocenyl] ethyldicyclohexylphosphine

KIE.....kinetic isotope effect

LDA .....lithium diisopropylamide

LiHMDS ....lithium hexamethyldisilazide

lit. .....literature value

LTMP.....lithium 2,2,6,6-tetramethylpiperidide

LUMO.....lowest unoccupied molecular orbital

m .....multiplet (spectral); meter(s); milli

M.....molar (moles per liter)

M^+ .....parent molecular ion

MALDI .....matrix-assisted laser desorption ionization

MCR.....multicomponent reaction

MD .....molecular dynamics

Me .....methyl

MEM.....(2-methoxyethoxy)methyl

Mes.....2,4,6-trimethylphenyl (mesityl)

MHz .....megahertz

mM.....millimolar (millimoles per liter)

MM .....molecular mechanics/modeling

mol .....mole(s); molecular (as in mol wt)

MOM.....methoxymethyl

mp .....melting point

Ms .....methanesulfonyl (mesyl)

MsOH.....methanesulfonic acid

MS.....molecular sieves; mass spectrometry

MTBE .....methyl *tert*-butyl ether

MW .....microwave irradiation; molecular weight

m/*z*.....mass-to-charge ratio

N .....normal (equivalents per liter)

NaHMDS ...sodium hexamethyldisilazide

nbd .....norbornadiene

NBS.....*N*-bromosuccinimide

NCS.....*N*-chlorosuccinimide

NHC.....*N*-heterocyclic carbene

NIS.....*N*-iodosuccinimide

NMO .....*N*-methylmorpholine-*N*-oxide

NMP.....*N*-methyl-2-pyrrolidone

NMR .....nuclear magnetic resonance

Np .....naphthyl

Ns.....4-nitrobenzenesulfonyl, nosyl

Nu .....nucleophile

OD.....optical density

PCC.....pyridinium chlorochromate

PDC.....pyridinium dichromate

PE.....petroleum ether

c-Pent .....cyclopentyl

Ph .....phenyl

Phen 1,10-phenanthroline

Phth .....phthalyl

PIDA .....(diacetoxyiodo)benzene

Pin .....pinacolato

piv .....pivaloyl

PMB .....*p*-methoxybenzyl

PMBS.....*p*-methoxybenzylsulfonyl

PMHS.....polymethylhydrosiloxane

PMP.....*p*-methoxyphenyl

PPA .....poly(phosphoric acid)

ppm .....part(s) per million

Pr, *n*-Pr .....normal (primary) propyl

i-Pr.....isopropyl

PTC .....phase-transfer catalysis

Py .....pyridine

q.....quartet (spectral)

QSAR.....quantitative structure–activity relationship

RCM.....ring-closure metathesis

redox .....reduction–oxidation

rel .....relative

Rf.....retention factor (in chromatography)

ROMP .....ring-opening metathesis polymerization

rr.....regioisomer ratio

rt .....room temperature

s .....singlet (spectral); second(s)

SAR.....structure–activity relationship

SEM 2-trimethylsilylethoxymethyl

SES.....β-trimethylsilylethanesulfonyl

SET .....single electron transfer

SIMes .....1,3-bis(2,4,6-trimethylphenyl)-4,5-dihydroimidazol-2-ylidene

SIPr .....1,3-bis(2,6-diisopropylphenyl)imidazol-2-ylidene

S_N1 .....unimolecular nucleophilic substitution

S_N2 .....bimolecular nucleophilic substitution

S_N' .....nucleophilic substitution with allylic rearrangement

SOMO.....single-occupied molecular orbital

SPhos .....2-dicyclohexylphospino-2',6'-dimethoxybiphenyl

t .....triplet (spectral)

TBAB.....tetrabutylammonium bromide

TBAC.....tetrabutylammonium chloride

TBAF .....tetrabutylammonium fluoride

TBDPS.....*tert*-butyldiphenylsilyl

TBS .....*tert*-butyldimethylsilyl

TBHP .....*tert*-butyl hydroperoxide

TCA .....trichloroacetic acid

TCNE.....tetracyanoethylene

TEA.....triethylamine

TEAB.....tetraethylammonium bromide

TEMPO.....2,2,6,6-tetramethylpiperidin-1-oxyl

TES .....triethylsilyl

Tf.....trifluoromethanesulfonyl (triflyl)

TFA.....trifluoroacetic acid

TFAA.....trifluoroacetic anhydride

TFE 2,2,2-trifluoroethanol

THF.....tetrahydrofuran

THP.....tetrahydropyran-2-yl

TIPS .....triisopropylsilyl

TLC.....thin-layer chromatography

TMAI .....tetramethylammonium iodide

TMEDA .....*N,N,N',N'*-tetramethyl-1,2-ethylenediamine

TMS .....trimethylsilyl

TOF.....time-of-flight; turnover frequency

Tol .....tolyl

TON .....turnover number

Tp .....hydrotris(pyrazol-1-yl)borate

tpy .....2,2':6',2"-terpyridine

Tr.....triphenylmethyl (trityl)

t_R.....retention time (in chromatography)

Triphos .....1,1,1-tris(diphenylphosphinomethyl)ethane

trisyl 2,4,6-triisopropylbenzenesulfonyl

Ts.....4-toluenesulfonyl (tosyl)

p-TsOH .....4-toluenesulfonic acid

TS.....transition structure

v/v .....volume per unit volume (volume-to-volume ratio)

wt .....weight

w/w .....weight per unit

Xantphos ....4,5-bis(diphenylphosphino)-9,9-dimethylxanthene

XPhos.....2-dicyclohexylphosphino-2',4',6'-triisopropylbiphenyl