

Development and Investigation of $\text{N}\equiv\text{W}(\text{OR})_3$, $\text{N}\equiv\text{M}(\text{OR})_3$, and $\text{Mo}_2(\text{OR})_6$ Complexes
for Triple-Bond Metathesis

by

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List of Abbreviations

ACM	alkyne cross-metathesis
AM	alkyne-metathesis
Anal	elemental analysis
Ar	aryl
asym	asymmetrical
br	broad
C ₆ D ₆	benzene- <i>d</i> ₆
Calcd	calculated
CD ₂ Cl ₂	dichloromethane- <i>d</i> ₂
CDCl ₃	chloroform- <i>d</i>
cm ⁻¹	wavenumber
d	day(s), doublet
DCE	1,2-dichloroethane
DFT	density functional theory
DME	1,2-dimethoxyethane
EI MS	electron impact mass spectrometry
Et	ethyl
EtCN	propionitrile

Et ₂ O	diethyl ether
equiv	equivalent(s)
g	grams
GC/MS	gas chromatography mass spectrometry
GOF	goodness of fit
¹ H	proton
h	hour(s)
Hz	hertz
HOMO	highest occupied molecular orbital
HOTF	trifluoromethanesulfonic acid
kcal	kilocalorie(s)
K _{eq}	equilibrium constant
LA	Lewis acid
LA _s	Lewis acids
LUMO	lowest unoccupied molecular orbital
m	multiplet
M	molar
Me	methyl
MeCN	acetonitrile
mg	milligrams
min	minute(s)
mL	milliliters
mol	moles

mM	millimolar
mmol	millimoles
NACM	nitrile-alkyne cross metathesis
NAX	nitrogen atom exchange
NCAr	aryl nitrile
NM	nitrile metathesis
NMR	nuclear magnetic resonance
ORTEP	oak ridge thermal ellipsoid plot
q	quartet
Q	reaction endpoint
Ph	phenyl
POSS	polyhedral oligomeric silsesquioxane
ppm	parts per million
s	singlet
sym	symmetrical
t	triplet
^t Bu	CMe ₃
THF	tetrahydrofuran
TS	transition state
XRD	x-ray diffraction
°C	degrees Celsius
Å	angstroms
δ	chemical shift in ppm downfield from zero

μL microliter(s)

\equiv triple bond