

Class	Examples
MoL ₆	<p>Many examples, Mo(CO)₆, Mo(η-arene)₂, Mo(η-arene)(CO)₃, Mo(dpme)₃, Mo(η-arene)(PR₃)₃, Mo(P(OMe)₃)₆, [Mo(η-C₅H₅)(CO)₃]⁻, Mo(triene)(CO)₃, Mo(CO)_nL_{n-6}, where L = PR₃ (n = 1-3), Mo(N₂)₂(depe)₂, Mo(PMe₃)₆, Mo(butadiene)₃, [Mo(η-lutadine)₂], [Mo(PMe₃)₄(η-C₂H₄)₂], Mo(CNR)₆</p>
MoL ₅	Mo(CO) ₅ in an argon matrix
MoL ₅ X	Mo(η-C ₆ H ₆)(η-C ₅ H ₅), [Mo(η-C ₆ H ₆) ₂] ⁺
MoL ₅ X ₂	<p>Many examples. Mo(η-C₅H₅)(CO)₃X, where X = alkyl, Cl, Br, I, H; [Mo(η-C₅H₅)(CO)₄]⁺, Mo(CO)₃L₂X₂, where L = PR₃, L₂ = diars, RS(CH)₂SR, and X = halogen; Mo(η-arene)(η-allyl)(OAc), Mo(η-arene)(dmpe)H₂, [Mo(η-arene)(η-allyl)L₂]⁺, where L = dmpe, diphos, butadiene; Mo(η-C₅H₅)₂CO, Mo(η-C₅H₅)₂(η-olefin), MoH(O₂COEt)(dppe)₂ [Mo(CO)₅]²⁻, [Mo(CNR)₇]²⁺, [Mo(CN)₇]⁵⁻, [Mo(CN)₅(NO)]⁴⁻,</p>

Table 1 (cont 1)

MoL₄X₂	Mo(dppe)₂I₂, [Mo(η-C₅H₅)₂ in a matrix, Mo(CO)₄I₂ , Mo(diars)₂ X₂, [Mo(CN)₆]⁴⁻, [Mo(CO)₄Br₂]
MoL₄X₃	[Mo(diars)(CO)₃Br]⁺Br⁻, [Mo(CN)₇]⁴⁻, [Mo(CO)₂(diars)I₃] (μ_{eff} = 1.40 B.M.)
MoL₃X₃	[Cl₂MoL₂(μ-Cl)₂L₂MoCl₂] (L = MeCN, py, L₂ = dppe); K₃[Mo(CN)₆], [MoX₃]_n, X=Cl, Br ; Mo₂Cl₄(OR)₂(ROH)₄, Mo(acac)₃, [Mo(NCS)₆]³⁻, Mopy₃Cl₃, Mo(thf)₃Cl₃, Mo(PR₃)₃Cl₃, [MoCl₄(dipy)]⁻, [MoX₆]³⁻ (X = Cl, Br, F), [Mo (S₂C₂R₂)₃]³⁻, [MoCl₂(dipy)₂]⁺
MoL₄X₄	K₄[Mo(CN)₈], K₄[MoF₈], Mo(PR₃)₄H₄, Mo(η-C₅H₅)₂X₂ (X = H, alkyl, Cl, Br, I, SH, SR, C≡CR, =O, N₃), [Mo(η-C₅H₅)₂LX]⁺ (LX = (PR₃)H, (CO)H, (CO)Me, (R₂S)Br, etc), [Mo(η-C₅H₅)₂L₂]²⁺ (L₂ = dmpe, (NH₃)₂), Mo(NR₂)₄, Mo(η-allyl)₄, Mo(S₂CNMe₂)₄, Mo(NO)₄, [Mo(η-C₅H₅)(NO)₂Cl],

Class	Example
MoL₄X₄ (cont)	[Mo(η-C ₆ H ₆)(η-C ₇ H ₇)] ⁺ , [Mo(η-C ₅ H ₅)(NO)Cl(μ-Cl)] ₂ [Mo(η-C ₅ H ₅)(CO) ₂ Cl ₃], Mo(R ₃ P) ₄ H ₄ , [Mo(dmpe) ₃ H ₂] ²⁺ , [Mo(O) ₂ (CN) ₄] ⁴⁻ , [Mo(η-C ₄ Ph ₄) ₂ (CO) ₂], [Mo(η-C ₅ H ₅)(NR)(PR ₃)Cl]
MoL₃X₄	MoCl ₄ (PMe ₂ Ph) ₃ , [Mo(O)Cl(MeNC) ₄] ⁺ I ₃ ⁻
MoL₂X₄	[MoCl ₆] ²⁻ , MoCl ₄ L ₂ (L = MeCN, py, PMe ₂ Ph, R ₂ O, R ₂ S; L ₂ = dppe, diars, bipy; typical μ _{eff} = 2.3 -2.5 B.M.), [MoI ₆] ²⁻ , [MoBr ₆] ²⁻ , [Mo(NCS) ₆] ²⁻ , Mo(R ₃ P) ₂ (O)Cl ₂ , [MoO ₂ (CN) ₄] ⁴⁻
MoL₃X₅	K ₃ [MoF ₈], K ₃ [Mo(CN) ₈], [Mo(η-C ₅ H ₅) ₂ X ₂] ⁺ (X = Cl, Br, ,Me) [Mo(η-C ₅ H ₅)(NR)Cl ₂]
MoL₂X₅	[MoOCl ₃] _n , [MoOCl ₄ L] ⁻ (l = MeoH, MeCN, Ph ₃ AsO), [MoO(LX) ₂] ₂ (μ-O), (LX = acac, oxine, dtc), [MoO(NCS) ₅] ²⁻
MoLX₅	[MoX ₅] ₂ , X=Cl, Br; [MoF ₄ (μ-F)] ₄ , K[MoF ₆], ;MoF ₅ L, L = Et ₂ O MeCN, py, [MoCl ₄ (OMe) ₂] ⁻ , MoOCl ₃ L (L = R ₃ PO, Ph ₃ P, R ₂ O, R ₂ S, μ _{eff} = 1.64 - 1.75 B.M.), [MoOCl ₅] ²⁻ , [Mo(O)Cl ₄] ⁻

MoX₅	MoF₅ vapour (decomp at 60°C to [MoF₄]_n and MoF₆)
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Table 2 (cont 3)

MoL₃X₆	MoH₆(PMe₂Ph)₃, [Mo(η-C₅H₅)₂H₃]³⁺, [Cl₃Mo(μ-Cl) MoCl₃]³⁻, [MoOCl₂]_n, Li₂[Mo(NBu^t)₄], (Me₂N)₃Mo≡Mo(NMe₂)₃, Mo(NR₂)₆, MoO₂Cl₂ (vapour), {[η-C₅H₅)Mo(O)₂]₂(μ-O)}, Mo(terpy)(O)₃, [MoO₄]²⁻ (see section 7.5)
MoL₂X₆	MoOCl₄L₂, L = MeCN, Ph₃O, H₂O, L₂=bipy, o-phen; cis-[MoO₂X₄]²⁻, X=F, Cl; [cis-MoO₂F₃(H₂O)]⁻; [MoO₂Cl₂]_n(isomers), [MoO₂X₂]_n, X=Br, I; Mo(O)Cl₂(S₂CNEt₂)₂, Mo(O)(NTs)(S₂CNEt₂), [MoF₈]²⁻, MoO₂Br₂(dipy), [cis-MoO₂Cl₄]²⁻, [Mo₂Cl₈]⁴⁻, [Mo(μ-OAc)₄Mo], [Mo(O)(O₂)₂F₂]²⁻, Mo₂(X-μ-L)₄, where X-μ-L = O₂CR,
MoLX₆	[MoOF₄]₄, [MoOX₄]_n, X = Cl, Br; MoOCl₄L, L= Et₂O, THF, Me₂O, Me; [MoOX₅]⁻, X = Cl, Br, [MoF₇]⁻, [Mo₂O₄(edta)]⁴⁻
MoX₆	MoX₆ (X = F, Cl, Br, Me, OPh, NCS; X₆ =F₅Cl, Cl₃F₃, F₅(OMe), MoO₂Cl₂ vapour, Mo₂Me₆, MoCl₄O vapour, (RO)₃Mo≡Mo(OR)₃, [Mo₆Cl₁₂], [Mo₆Cl₁₄]²⁻