

## 36 in total

Trade name	Empirical formula	Metal	Theoretical metal content	CAS Number	Product number
Umicore Hoveyda-Grubbs Catalyst MZ1c (C633)		Ru	16	1352916-84-7	3000083181
Umicore Hoveyda-Grubbs Catalyst MZ2c (C675)		Ru	15	1451807-77-4	3000083086
Umicore Grubbs Catalyst M80b (C853-bis)	(SI <i>Mes</i> ) <sub>2</sub> Ru(butenylidene) Cl <sub>2</sub>	Ru	12		3000083085
Umicore Grubbs Catalyst M80a (C875-bis)	(SI <i>Mes</i> ) <sub>2</sub> Ru(benzylidene) Cl <sub>2</sub>	Ru	12	508172-19-8	3000083057
Umicore Grubbs Catalyst M23 (C947)	(S I <i>Me</i> s)Ru[P Ph <sub>2</sub> (O <i>Ph</i> )](Ind)Cl <sub>2</sub>	Ru	11	1817799-58-8	3000082991
Umicore Grubbs Catalyst M1b (C801)	Ru(PCy <sub>3</sub> ) <sub>2</sub> (butenylidene)Cl <sub>2</sub>	Ru	13	194659-03-5	3000083000
Umicore Hoveyda-Grubbs Catalyst M70 (C601)		Ru	17	203714-71-0	3000082894
Umicore Grubbs Catalyst M2a (C848)	( SI Mes) Ru(PCy <sub>3</sub> ) (benzylidene)Cl <sub>2</sub>	Ru	12	246047-72-3	3000082847

Your regional Umicore customer expert  
Umicore Precious Metals Chemistry USA, LLC

1305 Main Parkway  
Catoosa, OK 74015  
Tel. +1 (918) 266 4826  
phillip.chalabi@am.umicore.com

Trade name	Empirical formula	Metal	Theoretical metal content	CAS Number	Product number
Umicore Grubbs Catalyst M2b (C827)	( SI Mes) Ru(PCy <sub>3</sub> ) (butenylidene)Cl <sub>2</sub>	Ru	12	253688-91-4	3000082849
Umicore Grubbs Catalyst M24 (C885)	(S IMe s)Ru[P Ph <sub>2</sub> (OMe)](Ind)Cl <sub>2</sub>	Ru	11	2016028-91-2	3000082848
Umicore Hoveyda-Grubbs Catalyst M72 (C627)		Ru	16	301224-40-8	3000082873
Umicore Hoveyda-Grubbs Catalyst M72 SIPr (C711)		Ru	14	635679-24-2	3000082874
Umicore Grubbs Catalyst M52		Ru	16	1014701-61-1	3000034571
Umicore Hoveyda-Grubbs Catalyst M72 SI(o-Tol) (C571)		Ru	18	927429-61-6	3000082888
Umicore Grubbs Catalyst M1a (C823)	Ru(PCy <sub>3</sub> ) <sub>2</sub> (benzylidene)Cl <sub>2</sub>	Ru	12	172222-30-9	3000082846
Umicore Grubbs Catalyst M33i		Ru	15	1203589-76-7	3000021048
Umicore Grubbs Catalyst M31 SIPr	(SIPr)Ru(py)(Ind) Cl <sub>2</sub>	Ru	12	1304756-39-5	3000036122
Umicore Grubbs Catalyst M32h		Ru	15	1416427-09-2	3000034579

Your regional Umicore customer expert  
Umicore Precious Metals Chemistry USA, LLC

1305 Main Parkway  
Catoosa, OK 74015  
Tel. +1 (918) 266 4826  
phillip.chalabi@am.umicore.com

Trade name	Empirical formula	Metal	Theoretical metal content	CAS Number	Product number
Umicore Grubbs Catalyst M91		Ru	15	1415725-62-0	3000036076
Umicore Grubbs Catalyst M35		Ru	12	934538-12-2	3000034564
Umicore Grubbs Catalyst M81		Ru	11	1228169-92-3	3000036143
Umicore Grubbs Catalyst M92		Ru	14	1415725-73-3	3000036077
Umicore Hoveyda-Grubbs Catalyst M71		Ru	14	1025728-56-6	3000034576
Umicore Grubbs Catalyst M93		Ru	15	1415725-68-6	3000036078
Umicore Grubbs Catalyst M31	[(SI <i>Me</i> )Ru(py)(Ind)Cl <sub>2</sub> ]	Ru	14	1031262-76-6	3000034565
Umicore Grubbs Catalyst M20 SIPr	(SI <i>Pr</i> )Ru(PPh <sub>3</sub> )(Ind)Cl <sub>2</sub>	Ru	10	1307233-23-3	3000036123
Umicore Grubbs Catalyst M1	Ru(PCy <sub>3</sub> ) <sub>2</sub> (Ind)Cl <sub>2</sub>	Ru	11	250220-36-1	3000034559
Umicore Grubbs Catalyst M32h SIPr		Ru	13	1416427-12-7	3000034577
Umicore Hoveyda-Grubbs Catalyst M71 SIPr		Ru	12	1212008-99-5	3000036112
Umicore Grubbs Catalyst M11	Ru( <i>i</i> Bu-phobane) <sub>2</sub> (Ind)Cl <sub>2</sub>	Ru	13	894423-99-5	3000034563
Umicore Grubbs Catalyst M51		Ru	15	1031262-71-1	3000034567

Your regional Umicore customer expert  
Umicore Precious Metals Chemistry USA, LLC

1305 Main Parkway  
Catoosa, OK 74015  
Tel. +1 (918) 266 4826  
phillip.chalabi@am.umicore.com

Trade name	Empirical formula	Metal	Theoretical metal content	CAS Number	Product number
Umicore Grubbs Catalyst M22	[(SI Mes) Ru(P(O <sup>i</sup> Pr) <sub>3</sub> )(Ind)Cl <sub>2</sub> ]	Ru	12	1255536-61-8	3000036115
Umicore Grubbs Catalyst M20	[(SI Mes) Ru(PPh <sub>3</sub> )(Ind)Cl <sub>2</sub> ]	Ru	11	340810-50-6	3000036116
Umicore Grubbs Catalyst M2	(SI Mes) Ru(PCy <sub>3</sub> )(Ind)Cl <sub>2</sub>	Ru	11	536724-67-1	3000034561
Umicore Hoveyda-Grubbs Catalyst M73 SIPr		Ru	12	1212009-05-6	3000034573
Umicore Hoveyda-Grubbs Catalyst M73		Ru	13	1025728-57-7	3000034574

Your regional Umicore customer expert  
Umicore Precious Metals Chemistry USA, LLC

1305 Main Parkway  
Catoosa, OK 74015  
Tel. +1 (918) 266 4826  
phillip.chalabi@am.umicore.com