

Materials List for:

Reverse Microemulsion-mediated Synthesis of Monometallic and Bimetallic Early Transition Metal Carbide and Nitride Nanoparticles

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Materials

Name	Company	Catalog Number	Comments
n-heptane	Sigma-Aldrich	246654	
polyoxyethylene (4) lauryl ether	Sigma-Aldrich	235989	Brij® L4
tungsten (VI) isopropoxide	Alfa Aesar	40247	W(VI)IPO
tungsten (VI) chloride	Sigma-Aldrich	241911	To prepare W(VI)IPO, homemade
tungsten (IV) chloride	Strem Chemicals	74-2348	To prepare W(IV)IPO, homemade
tantalum (V) isopropoxide	Alfa Aesar	40038	Ta(V)IPO
niobium (V) isopropoxide	Alfa Aesar	36572	Nb(V)IPO
nickel (II) methoxyethoxide	Alfa Aesar	42377	Ni(II)MEO
titanium (IV) isopropoxide	Sigma-Aldrich	87560	Ti(IV)IPO
molybdenum (V) isopropoxide	Alfa Aesar	39159	Mo(V)IPO
molybdenum (V) chloride	Sigma-Aldrich	208353	To prepare Mo(V)IPO, homemade
tetraethyl orthosilicate	Sigma-Aldrich	333859	TEOS
ammonium hydroxide	Sigma-Aldrich	320145	
methanol	Sigma-Aldrich	34860	
anhydrous isopropanol	Sigma-Aldrich	278475	To prepare homemade alkoxides
ammonium bifluoride	Sigma-Aldrich	224820	
carbon black	Cabot Corp.	Vulcan® XC72R	
Methane	AirGas	ME R300	
Hydrogen	AirGas	HY UHP300	
Ammonia	AirGas	AM AH80N705	
Quartz Tube Furnace	MTI Corp.	OTF-1200X-S-UL	