



Table: Selected synthetic methods to access aliphatic and/or aromatic thiocyanates

Precursor	"SCN" or "CN" source	Method	Section	Thiocyanate	Yields (%)	Ref.
RCl, RBr, ROTs	KSCN	path 1 (SN2)	II.A.1.a.	RSCN Aliphatic (primary)	70-95	4
ROMs, ROTs	[bmim]SCN	path 1 (SN2)	II.A.1.a.	RSCN Aliphatic (primary, secondary)	90-99	5
RSH	Ph ₃ P(SCN) ₂	path 1 (SN2)	II.A.1.a.	RSCN Aliphatic (primary, secondary)	80-90%	6
ROH, RSH, ROSiMe ₃ , ROTHP	NBu ₄ SCN	path 1 (Mitsunobu)	II.A.1.a.	RSCN Aliphatic (primary, secondary)	70-90	7
Epoxide	NH ₄ SCN	path 1 (SN2)	II.A.1.a.	AlkCH(OH)CH ₂ SCN ArCH(SCN)CH ₂ OH	80-90	8
ArCH ₂ Br, RC(O)CH ₂ Br	MeC(O)NCS, PhC(O)NCS	path 1 (SN2)	II.A.1.a.	ArCH ₂ SCN RC(O)CH ₂ SCN	50-80	9

Precursor	“SCN” or “CN” source	Method	Section	Thiocyanate	Yields (%)	Ref.
RC(O)CH ₂ R'	NH ₄ SCN	path 1 (SCN ⁻ /oxidant)	II.A.1.b.	RC(O)CH(SCN)R'	60-80	14
ArCH=CH ₂	KSCN	path 1 (SCN ⁻ /FeCl ₃)	II.A.1.b.	ArCH(SCN)CH ₂ SCN	70-85	15
ArH, indoles	NH ₄ SCN	path 1 (SCN ⁻ /oxidant)	II.A.1.b.	ArSCN, 3-(SCN)-indole	70-98	10, 11
ArI	KSCN	path 1 (cat. [Cu]/ligand)	II.A.1.c.	ArSCN	40-60	16
ArN ₂ BF ₄	KSCN	path 1 (cat. [Cu]/ligand)	II.A.1.c.	ArSCN	40-90	17
ArB(OH) ₂	KSCN	path 1 (cat. [Cu]/ligand, O ₂)	II.A.1.c.	ArSCN	10-90	18
RSH	TMSCN	path 2 (cat. [Cu]/ligand, O ₂)	II.B.1.	RSCN Aliphatic, aromatic	60-99	23

Precursor	“SCN” or “CN” source	Method	Section	Thiocyanate	Yields (%)	Ref.
RSH	ArI(X)CN (iodine(III) reagent)	path 2	II.B.2.	RSCN Aliphatic, aromatic	80-99	25
RSM _e	ArI(OTf)CN (iodine(III) reagent)	path 2	II.B.2.	RSCN Aliphatic, aromatic	20-90	26
ArSH	IM(Br)CN (sulfur(III) reagent)	path 2	II.B.2.	ArSCN	80-99	27
ArSH, ArSSAr	CuCN	path 2	II.B.3.	ArSCN	15-95	28
RSSR	Me ₂ C(CN)N=NC(CN)Me ₂ (AIBN)	path 2 (cat. [Cu], O ₂)	II.B.3.	RSCN Aliphatic, aromatic	50-80	29