

LIST OF CHEMICALS USED IN THE SYNTHESIS OF
SIS AND SAMS-I-SAMS TRITHIOL ELASTOMERS

SOLIDS AND LIQUIDS

Alpha-Methylstyrene (monomer)
Alumina
1,3-Bis(1-phenylethene)benzene (BE) precursor
t-Butyllithium
n-Butyllithium (at or below 2.6M in hexanes)
s-Butyllithium (at or below 1.5M in hexanes)
Isobutene
Isoprene (monomer)
Lithium isopropoxide (or can be made from 2-Propanol)
Molecular Sieves
1-Propanol
2-Propanol
Silica Gel
Styrene (monomer)
Toluene

GASES

Carbon dioxide (compressed gas)
Inertant Air (compressed gas)
Nitrogen (compressed gas)
Steam (compressed gas & thermal exposure)

EQUIPMENT	I.D. NAME OR NUMBER & VESSEL SIZE	HAZARDOUS CHEMICALS IN CONC. OF .1% OR GREATER
De-aeration Vessel	1. S-561 1000 ml	a. Styrene
Purification Box	1. S-235 2000 ml	a. Silica Gel b. Alpha-Methylstyrene c. Cyclohexane d. Toluene
	2. S-559 2000 ml	a. Silica Gel b. Alpha-Methylstyrene c. Cyclohexane

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d. Toluene

3. S-560 350 ml
or S-577a. Alumina
h. Styrene4. S-567 500 ml
or S-575a. Alumina
h. Isoprene

5. A-1 1500 ml

a. Alpha-Methylstyrene
h. Alumina
c. Cyclohexane
d. Toluene
e. Molecular sieves

6. A-2 1500 ml

a. Alpha-Methylstyrene
h. Alumina
c. Cyclohexane
d. Toluene
e. Molecular sievesReagent Addition
Sequence

1. S-123 500 ml

a. Cyclohexane
b. Styrene

2. S-379 75 ml

a. Diisobutylaluminum
Hydride (DIBAL-H)
b. Hexanes

3. S-410 75 ml

a. Cyclohexane
h. DFT
c. Toluene

4. S-566 500 ml

a. n-Butyllithium ($\approx 2.6M$
in hexanes)
b. s-Butyllithium ($\approx 1.5M$
in hexanes)
c. DFT
d. Toluene

5. S-570 1.0 gal

a. Hexane
h. Isoprene

Recovery Vessel	1. X-1	15.0 gal	a. Alpha-Methylstyrene b. Cyclohexane c. Hexane d. Polyisoprene e. Polystyrene f. 1-Propanol g. 2-Propanol h. SIS i. SAMR-I-SAMS j. Toluene
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Storage Vessels	1. B-1	6.0 gal	a. Alpha-Methylstyrene b. Cyclohexane c. Hexane d. Toluene
	2. B-2	2.5 gal	a. Isoprene
	3. B-3	25.0 gal	a. Alpha-Methylstyrene b. Cyclohexane
	4. B-4	25.0 gal	a. Alpha-Methylstyrene b. Cyclohexane
	5. B-7	5.0 gal	a. Cyclohexane
	6. B-8	25.0 gal	a. Toluene
	7. B-9	25.0 gal	a. Toluene
	8. B-10	25.0 gal	a. Isoprene
	9. B-11	25.0 gal	a. Isoprene
	10. B-12A	2.5 gal	a. Styrene

Transfer Vessel	1. B-5	5.0 gal	a. Alpha-Methylstyrene b. Cyclohexane c. Hexane d. Isoprene e. Polyisoprene f. Polyisoprene g. Styrene h. Toluene
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