Supplementary Information for

Novelties of triphasic phase transfer catalysed Zinin reduction of nitrochlorobenzene by $H_2S$-laden monoethanolamine

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General Information:

Method of GC-FID and GC-MS:

In present work, GC-MS of model with FID detector has been used for analysis. The column used was DB-5MS capillary column with dimension 30 m × 320 µm × 0.25 µm. The optimum programming conditions of GC is as follows:

- Oven Conditions: Initial Temperature: 60° C, Maximum Oven temperature: 324° C, Ramp 1 - 50° C/min, from 60° C to 190° C; Ramp 2 - 15° C/min, form 190° C to 230° C.
- Column Flow rate (N\textsubscript{2})– 1.6 mL/min, Pressure – 16.724 psi,
- FID detector conditions: Heater temperature- 300° C, Air flow rate- 400ml/min, H\textsubscript{2} fuel flow 30ml/min, makeup flow N\textsubscript{2} – 25 mL/min

The optimum programming conditions of MS is as follows:

- Column flow rate- 1mL/min, pressure- 7.6522 psi.
- Oven conditions: Initial Temperature: 60° C, Maximum Temperature- 324° C, Initial Temperature: 60° C, Maximum Oven temperature: 324° C, Ramp 1 - 50° C/min, from 60° C to 190° C; Ramp 2 - 15° C/min, form 190° C to 230° C.
Figure S1: $^1$H-NMR spectrum of m-chloroaniline in CDCl$_3$

Figure S2: $^{13}$C-NMR spectrum of m-chloroaniline in CDCl$_3$
**m-Chloroaniline** colourless liquid, $^1$H-NMR (400 MHz, CDCl$_3$, 293K, TMS) $\delta$= 3.665 (2H, s), 6.556 (1H, dd, J= 6.8 & 1.2 Hz), 6.6691(1H, S), 6.780(1H, d, J= 8Hz), 7.670 (1H, t, J=8Hz); $^{13}$C-NMR (400 MHz, CDCl$_3$, 293K, TMS) 113.18, 114.88, 118.91, 130.32, 134.77, 147.60.

Figure S3: GC Spectra showing formation of m-chloroaniline from reactant m-chloronitrobenzene in solvent toluene.
Figure S4: Mass spectra for all the peaks shown in Figure S3

Figure S5: Mass spectra of product m-Chloroaniline