Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting Information

for

C-N bond hydrogenolysis of aniline and cyclohexylamine over $TaOx-Al_2O_3$

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Table S1. Product Distribution for the Denitrogenation of Cyclohexylamine

	Product Distribution						Benzene/cyclohexane	
T (°C)	Benzene	Cyclohexene	Cyclohexane	Aniline	Cyclohexyl-amine	HC/NH_2[a]	Obs.	Equil.[b]
150	4.7%	2.4%	0.1%	0.3%	1.1%	5	65	$7.1x10^{-7}$
200	4.5%	6.9%	0.1%	0.1%	0.7%	14	31	$4.4x10^{-4}$
250	10.1%	30.3%	0.4%	0.2%	0.4%	67	25	$8.1x10^{-2}$
300	7.4%	28.9%	0.1%	0.0%	0.1%	274	51	6.0
350	0.5%	0.0%	0.0%	0.0%	0.0%	11	n/a	220
400	0.6%	0.0%	0.0%	0.0%	0.0%	20	n/a	4700
Total	**27.7%**	**68.5%**	**0.8%**	**0.7%**	**2.3%**	32	36	23

[a]Moles C-N bond cleavage products (cyclohexane, cyclohexene, benzene) detected per mole cyclohexylamine and aniline desorbed in a given temperature range.

[b]Equilibrium ratios at a given temperature were calculated based on the thermodynamic data for the hydrogenation of benzene to cyclohexene and cyclohexane by G. G. Janz, *J. Chem. Phys.*, **1954**, *22*, 751.

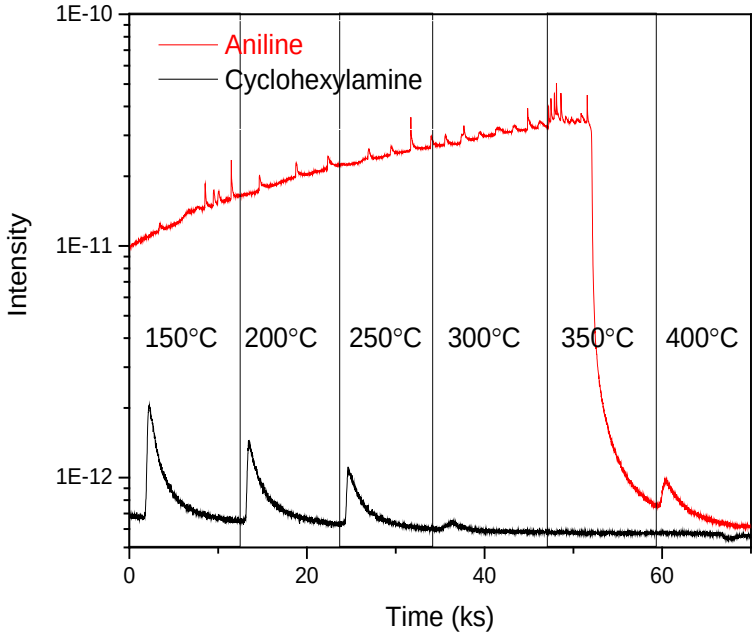

Figure S1. Signals from process mass spectrometry for aniline (m/z = 93) and cyclohexylamine (m/z = 99) desorbing **intact** from TaO_x-Al_2O_3 surfaces saturated in the respective amines.