ZSM-22 HMDA BUTOH

13.0K_2O:1.55Al_2O_3:91.0SiO_2:3670.0H_2O:27.0HMDA:91.0ButOH

Katarzyna Lukaszuk
lukaszuk.kasia@gmail.com

1 BATCH COMPOSITION CALCULATION

COMPOSITION MATRIX [C]

Compound	K_2O	Al_2O_3	SiO_2	H_2O	HMDA	ButOH
Mole ratio	13.000	1.550	91.000	3670.000	27.000	91.000
Weight [g]	1224.548	158.040	5467.671	66115.784	3137.557	6745.138
Mol. wt. [g/mol]	94.196	101.961	60.084	18.015	116.206	74.122

BATCH MATRIX [B]

Compound	K_2O	Al_2O_3	SiO_2	H_2O	HMDA	ButOH
KOH (85.0%)	0.7135	0.0000	0.0000	0.2865	0.0000	0.0000
$Al_2(SO_4)_3$*$_{18}H_2O$ (98.0%)	0.0000	0.1530	0.0000	0.4866	0.0000	0.0000
SiO_2 (40.0%)	0.0000	0.0000	0.4000	0.6000	0.0000	0.0000
H_2O (100.0%)	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
HMDA (98.0%)	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000
ButOH (99.0%)	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

RESULT MATRIX [X] = [B]$^{-1}$·[C] (SF=500.0000)

Substance	Mass [g]	Scaled Mass [g] (500.000)	Weighted mass [g]
KOH (85.0%)	1716.1713	3.4323	
$Al_2(SO_4)_3$*$_{18}H_2O$ (98.0%)	1054.0150	2.1080	
SiO_2 (40.0%)	13669.1782	27.3384	
H_2O (100.0%)	56920.0297	113.8401	
HMDA (98.0%)	3201.5884	6.4032	
ButOH (99.0%)	6813.2711	13.6265	
Sum	83374.2537	166.7485	

RESULT MATRIX [X] = [B]$^{-1}$·[C] (SF=15312.1965)

Substance	Mass [g]	Scaled Mass [g] (15312.197)	Weighted mass [g]
KOH (85.0%)	1716.1713	0.1121	
$Al_2(SO_4)_3$*$_{18}H_2O$ (98.0%)	1054.0150	0.0688	
SiO_2 (40.0%)	13669.1782	0.8927	
H_2O (100.0%)	56920.0297	3.7173	
HMDA (98.0%)	3201.5884	0.2091	
Sum	83374.2537	5.4450	
ButOH (99.0%)	6813.2711	0.4450	

2 Synthesis

Sample name	
Time	
Date	
Temperature	
Oven	
Liner	
Autoclave	
Drying	
Comment	

Calcination I

Date:

Mass [g]	Before calcination	After calcination
Weighing boat		
Weighing boat + sample		
Sample		

Ion exchange

Date:

Notes

Calcination II

Date:

Mass [g]	Before calcination	After calcination
Weighing boat		
Weighing boat + sample		
Sample		

3 Analysis

XRD

Date:

Sample name	Result	Comment

SEM

Date:

Sample name	Aspect ratio	Si/Al	Comment