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APPENDIX

Appendix A Study Acetaldehyde feed

Table A1 Product yield and acetaldehyde conversion over HZSM-5 with SiO₂/Al₂O₃ of 80 (Reaction conditions: 400 °C, 300 psig, and TOS = 3 h)

W/F (h)	0.1	0.5
Conversion (%)	72.6	98.6
<i>Oxygenate (mol_{carbon} %)</i>	43.3	6.5
Acetaldehyde	27.4	1.4
Formaldehyde	0.0	0.0
Propanal	1.4	1.4
Acetone	0.0	0.0
Propenal	0.0	0.0
Methanol	0.0	0.0
Ethanol	0.0	0.0
Alkyl alcohol	0.0	0
Acetol	0.0	0.0
Acetic acid	14.6	3.7
Propanoic acid	0.0	0.0
Heavy oxygenate	0.0	0.0
<i>Hydrocarbon (mol_{carbon} %)</i>	56.7	93.5
C1-C3 Paraffins	2.6	24.0
C4+ Paraffins	1.5	11.3
Ethylene	12.8	2.3
Propylene	17.4	0.9
Butene	0.0	0.0
Benzene	2.6	7.7
Toluene	7.4	26.1
EB	0.8	1.0
<i>p</i> -Xylene	1.3	2.9
<i>m</i> -Xylene	2.6	6.5
<i>o</i> -Xylene	1.2	2.9
C9Aromatics	4.3	5.8
C10Aromatics	0.7	0.7
C11Aromatics	0.5	0.8
C12Aromatics	0.4	0.2
C13Aromatics	0.6	0.2

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2. Ubolcharoen, W., Jongpatiwut, S., and Tungasamita, D. (2013, April 23) Conversion of Glycerol to Aromatic Hydrocarbons over Modified HZSM-5 Catalysts. Poster presented at The 4th Research Symposium on Petroleum and Petrochemicals, and Advanced Materials and The 19th PPC Symposium on Petroleum, Petrochemicals, and Polymers, Bangkok, Thailand