CLAIMS

1. A method for alkylation of feedstock comprising:

contacting the feedstock comprising at least one alkylatable aromatic compound and an alkylating agent with a first alkylating catalyst composition under alkylating conditions, the first alkylating catalyst composition comprising UZM-8 zeolite, nitrogen, and a binder, the first alkylating catalyst composition having 2-10 wt% UZM-8 zeolite, and the catalyst having a nitrogen to zeolite aluminium molar ration of between 0.01 to 0.040 to produce a product stream;

wherein a total alkylated selectivity at a temperature and a molar ratio of alkylatable aromatic compound to alkylating agent is greater than 99.0%; and

contacting the product stream with a second alkylating catalyst to convert the unconverted olefins exiting from the first alkylating catalyst, the second alkylating catalyst composition having greater than 30 wt% zeolite, the second alkylating catalyst composition is made of less than 30% of the total alkylating catalyst composition.

2. The method of claim 1 wherein the first alkylating catalyst composition has 10 wt% UZM-8 zeolite.

3. The second alkylating catalyst of claim 1 comprises zeolite UZM-8, UZM-37, MCM-22, BEA, FAU or a mixture of thereof at a combined zeolite content of greater than 30wt%.

4. The second alkylating catalyst of claim 2 comprises zeolite UZM-8, UZM-37, MCM-22, BEA, FAU, or a mixture of thereof at a combined zeolite content of greater than 30wt%.

5. The method of claim 1 further comprising contacting the feedstock with at least one additional catalyst composition before contacting the feedstock with the first alkylating catalyst composition, the at least one additional catalyst composition capable of reacting with one or more of nitrogen, oxygenate species, sulfur, or metals, to reduce a level of nitrogen, oxygen, sulfur, or metals in the feedstock.

6. The method of claim 1 further comprising contacting the effluent exiting the first alkylating catalyst with the second alkylating composition comprising a zeolite and a binder.

7. The method of claim 1 wherein the alkylating conditions include a temperature of 90ºC to 230ºC, a pressure of from 1.3 MPa to 4.58 MPa, a molar ratio of alkylatable

aromatic compound to alkylating agent of from 1 to 5, and a feed hourly weight space velocity based on the alkylating agent of from 0.5 to 10 hr^{-1}.

8. The method of claim 1 wherein the alkylatable aromatic compound is benzene, the alkylating agent is propylene, and the propylene conversion across the first catalyst composition is greater than 90%.

9. The method of claim 1 wherein the alkylatable aromatic compound is benzene, the alkylating agent is propylene, and the propylene conversion across the first catalyst composition is greater than 95%.

10. The method of claim 1 wherein the alkylatable aromatic compound is benzene, the alkylating agent is ethylene, and the ethylene conversion across the first catalyst composition is greater than 80%.