CLAIMS:

We Claim:

1. A process for producing an alkylated aromatic compound stream from at least one untreated alkylatable aromatic compound stream in the liquid phase having catalyst poisons and an alkylating agent stream, wherein said untreated alkylatable aromatic compound stream is treated to reduce catalyst poisons, the process comprising the steps of:

(a) contacting said liquid phase untreated alkylatable aromatic compound stream having said catalyst poisons and an alkylating agent stream with a treatment composition in a treatment zone separate from an alkylation reaction zone under treatment conditions to remove at least a portion of said catalyst poisons and to ~~alkyate~~ alkylate at least a portion of said alkylatable aromatic compound to form a treated effluent stream which comprises treated alkylatable aromatic compound, an alkylated aromatic compound and a reduced amount of catalyst poisons, wherein said treatment composition has a surface area/surface volume ratio of greater than 30 in^{-1} (12 cm^{-1}), said treatment conditions include a temperature of from 30°C to 300°C and a pressure from 101 kPa to 4601 kPa, and a molar ratio of untreated alkylatable aromatic compound to alkylating agent of greater than or equal to 25:1; and

(b) contacting said treated alkylatable aromatic compound in said effluent stream and additional said alkylating agent stream with a catalyst composition in said alkylation reaction zone separate from said treatment zone under at least partial liquid phase catalytic conversion conditions to form an alkylated effluent stream which comprises additional alkylated aromatic compound, wherein said catalyst composition comprises a porous crystalline material having a framework structure type selected from the group consisting of FAU, *BEA, MOR, MWW and mixtures thereof, wherein said at least partial liquid phase catalytic conversion conditions include a temperature of from 100°C to 300°C, a pressure from 689 kPa to 4601 kPa, a molar ratio of treated alkylatable aromatic compound to alkylating agent of from 0.01:1 to 25:1, and a feed weight hourly space velocity (WHSV) based on alkylating agent of from ~~0.5~~ 0.1 to 500 hr^{-1}.

2. The process of claim 1, wherein said catalyst poisons comprise at least one of the following elements: nitrogen, halogens, oxygen, sulfur, arsenic, selenium, tellurium, phosphorus, and Group 1 through Group 12 metals.

3. The process of claim 1, wherein said treatment composition is a molecular sieve selected from the group consisting of zeolite beta, faujasite, zeolite Y, Ultrastable Y (USY), Dealuminized Y (Deal Y), Rare Earth Y (REY), Ultrahydrophobic Y (UHP-Y), mordenite, TEA-mordenite, ZSM-3, ZSM-4, ZSM-5, ZSM-14, ZSM-18, ZSM-20, and combinations thereof.

4. The process of claim 1, wherein said treatment composition is selected from the group consisting of clay, resin, solid phosphoric acid, activated alumina, Linde type X, Linde type A, and combinations thereof.

5. The process of claim 1, wherein said porous crystalline material having said FAU framework structure type is faujasite, zeolite Y, Ultrastable Y (USY), Dealuminized Y (Deal Y), Rare Earth Y (REY), Ultrahydrophobic Y (UHP-Y) or a mixture thereof.

6. The process of claim 1, wherein said porous crystalline material having said *BEA framework structure type is zeolite beta.

7. The process of claim 1, wherein said porous crystalline material having said MOR framework structure type is mordenite, TEA-mordenite or a mixture thereof.

8. The process of claim 1, wherein said porous crystalline material having said MWW framework structure type has an X-ray diffraction pattern including d-spacing maxima at 12.4±0.25, 6.9±0.15, 3.57±0.07 and 3.42±0.07 Angstroms in as-synthesized or calcined form.

9. The process of claim 1, wherein said porous crystalline material having MWW framework structure type is PSH-3, SSZ-25, ERB-1, ITQ-1, ITQ-2, ITQ-30, MCM-22, MCM-36, MCM-49, MCM-56, UZM-8, EMM-10, EMM-12, EMM-13 or mixtures thereof.

10. The process of claim 1, wherein said alkylatable aromatic compound is selected from the group consisting of benzene, naphthalene, anthracene, naphthacene, perylene, coronene, phenanthrene and mixtures thereof.

11. The process of claim 1, wherein said alkylatable aromatic compound is benzene, said alkylating agent is ethylene and said alkylated aromatic compound is ethylbenzene.

12. The process of claim 1, wherein said alkylatable aromatic compound is benzene, said alkylating agent is propylene and said alkylated aromatic compound is cumene.

13. The process of claim 1, wherein said alkylatable aromatic compound is benzene, said alkylating agent is butene and said alkylated aromatic compound is sec-butylbenzene.

14. The process of claim 1, wherein said alkylatable aromatic compound is benzene, said alkylating agent is ethylene, said alkylated aromatic compound is ethylbenzene, and said at least partial liquid phase conversion conditions include a temperature of from 100°C to 280°C, a pressure of 3102 kPa or less, a weight hourly space velocity (WHSV) based on the ethylene of from 0.1 to 20 hr^{-1}, and a ratio of benzene to ethylene in the alkylation reactor of from ~~0.5:1~~ 1:1 to ~~30:1~~ 20:1 molar.

15. The process of claim 14, wherein said treatment composition is a molecular sieve selected from the group consisting of zeolite beta, faujasite, zeolite Y, Ultrastable Y (USY), Dealuminized Y (Deal Y), Rare Earth Y (REY), Ultrahydrophobic Y (UHP-Y), mordenite, TEA-mordenite, ZSM-3, ZSM-4, ZSM-5, ZSM-14, ZSM-18, ZSM-20, and mixtures thereof.

16. The process of claim 14, wherein said treatment composition is selected from the group consisting of clay, resin, solid phosphoric acid, activated alumina, Linde type X, Linde type A, and mixtures thereof.

17. The process of claim 14, wherein said porous crystalline material having said MWW framework structure type has an X-ray diffraction pattern including d-spacing

maxima at 12.4±0.25, 6.9±0.15, 3.57±0.07 and 3.42±0.07 Angstroms.

18. The process of claim 16, wherein said porous crystalline material having MWW framework structure type is PSH-3, SSZ-25, ERB-1, ITQ-1, ITQ-2, ITQ-30, MCM-22, MCM-36, MCM-49, MCM-56, UZM-8, EMM-10, EMM-12, EMM-13 or mixtures thereof.

19. The process of claim 1, wherein said alkylatable aromatic compound comprises benzene, said alkylating agent is propylene, said alkylated aromatic compound comprises cumene, and said at least partial liquid phase conversion conditions include a temperature of less than 200°C, a pressure of 3102 kPa or less, a weight hourly space velocity (WHSV) based on propylene alkylating agent of from 0.1 hr^{-1} to 250 hr^{-1}, and a ratio of benzene to propylene in the alkylation reactor of from ~~0.5:1~~ 1:1 to ~~30:1~~ 20:1 molar.

20. The process of claim 19, wherein said treatment composition is a molecular sieve selected from the group consisting of zeolite beta, faujasite, zeolite Y, Ultrastable Y (USY), Dealuminized Y (Deal Y), Rare Earth Y (REY), Ultrahydrophobic Y (UHP-Y), mordenite, TEA-mordenite, ZSM-3, ZSM-4, ZSM-5, ZSM-14, ZSM-18, ZSM-20, and mixtures thereof.

21. The process of claim 19, wherein said treatment composition is selected from the group consisting of clay, resin, solid phosphoric acid, activated alumina, Linde type X, Linde type A, and mixtures thereof.

22. The process of claim 19, wherein said porous crystalline material having said MWW framework structure type has an X-ray diffraction pattern including d-spacing maxima at 12.4±0.25, 6.9±0.15, 3.57±0.07 and 3.42±0.07 Angstroms.

23. The process of claim 22, wherein said porous crystalline material having MWW framework structure type is PSH-3, SSZ-25, ERB-1, ITQ-1, ITQ-2, ITQ-30, MCM-22, MCM-36, MCM-49, MCM-56, UZM-8, EMM-10, EMM-12, EMM-13 or mixtures thereof.

24. The process of claim 1, wherein said treatment conditions of contacting step (a) includes a treatment weight hourly space velocity (WHSV) based on the untreated alkylatable aromatic compound in the range from 5 to 70 hr^{-1}.

25. The process of claim 1, said treatment composition absorbs ~~greater than 900 wppm~~ N-formyl morpholine (NFM) ~~based on the weight of the treatment composition~~.