

CLAIMS:

1. A binderless zeolitic adsorbent comprising:
a first FAU type zeolite having a silica to alumina molar ratio of from 3.0 to 6.0;
a binder-converted FAU type zeolite having a silica to alumina molar ratio of from 2.0 to
5 6.0, wherein the binder-converted FAU type zeolite may be 5-50% of the binderless
zeolitic adsorbent; and
cationic exchangeable sites within the binderless zeolitic adsorbent.
2. The binderless zeolitic adsorbent of claim 1, wherein at least 95% of the binderless
zeolitic adsorbent is FAU type zeolite.
- 10 3. The binderless zeolitic adsorbent of claim 1, wherein at least 98% of the binderless
zeolitic adsorbent is FAU type zeolite.
4. The binderless zeolitic adsorbent of claim 1, wherein the binder-converted FAU type
zeolite may be 10-34% of the binderless zeolitic adsorbent.
5. The binderless zeolitic adsorbent of claim 1, wherein the cationic exchangeable sites
15 may be alkali/alkaline earth cations.
6. A method for producing a binderless zeolitic adsorbent comprising:
forming agglomerates having ion-exchangeable sites, the agglomerates formed from a
FAU type zeolite having a silica to alumina molar ratio of from 3.0 to 6.0, a non-
zeolitic binder comprising silica, alumina, or a combination of silica and alumina, and
20 a forming aid, wherein agglomerates are formed from greater than 50% of the FAU
type zeolite;
applying a thermal treatment to precondition the binder and dissipate the forming aid;
applying a hydrothermal treatment with a solution containing at least one source of
hydroxide to convert non-zeolitic material into FAU type zeolite material; and
25 drying the binderless zeolitic adsorbent.
7. The method of claim 6, wherein at least 95% of the binderless zeolitic adsorbent is
FAU type zeolite.
8. The method of claim 6, wherein at least 98% of the binderless zeolitic adsorbent is
FAU type zeolite.

9. The method of claim 6, wherein the solution containing hydroxide further comprises silicon, aluminum, or a mixture of both silicon and aluminum.
10. The method of claim 6, further comprising exchanging the ion-exchangeable sites.