What is claimed is:

1. A method of repairing a damaged section of a pipe, comprising:
providing a liner having an open first end and a substantially closed second end;
impregnating the liner with a material capable of curing and hardening;
inverting the liner into the pipe with an inversion head, wherein the first end of the liner is attached to a portion of the inversion head;
inflating the liner to press the liner against the wall of the pipe;
inflating a plug at least partially within the inversion head to substantially close the open end of the liner at the inversion head; and
allowing the material to cure and harden.

2. The method of claim 1 wherein the liner comprises a first layer of felt and a second layer comprising an impervious material.

3. The method of claim 2 wherein the liner is inverted from a position wherein the layer of felt is on the inside to a position wherein the impervious layer is on the inside as the liner is inverted through the inversion head.

4. The method of claim 3 wherein the layer of felt is positioned between the impervious material and the pipe after the liner has been inverted into the pipe.

5. The method of claim 1 further comprising attaching a vacuum head to the inversion head to aid in impregnating the liner with the material capable of curing and hardening.

6. The method of claim 5 further comprising removing the vacuum head and attaching a fluid source to invert the liner into the pipe.

7. The method of claim 6 further comprising replacing the fluid source with a curing head to aid in curing the material.

8. The method of claim 7 further comprising providing steam to the lumen of the inflated liner to decrease curing time for the material.

9. The method of claim 8 wherein the vacuum head, fluid source, and curing head are selectively attached to an intake of the inversion head.

10. The method of claim 1 further comprising providing a bladder that is positionable from a configuration wherein the bladder is at the outside of the liner to a position wherein the bladder is at least partially at the interior of the liner within the pipe.

11. The method of claim 10 further comprising inflating the bladder to press the liner against the wall of the pipe.

12. An assembly for repairing a damaged section of a pipe, comprising:
an inversion head having an intake end and an opposite discharge end; and
a liner having an open first end and a substantially closed second end, the first end attached to the discharge end of the inversion head;
wherein the intake end of the inversion head configured to removably attach to an inversion member for inflating the liner, and a curing head for curing a material capable of curing and hardening that is impregnated in the liner.

13. The assembly of claim 12 further comprising a plug positioned at least partially within the inversion head and configured to be inflated to substantially close off the open first end of the liner.

14. The assembly of claim 12 further comprising a vacuum head, a fluid source, or a curing head attached to the intake end of the inversion head.

15. The assembly of claim 12 further comprising a bladder operatively connected to the liner such that the bladder and liner are inverted from a position wherein the liner is substantially within the bladder to a position wherein the liner substantially surrounds the bladder.

16. The assembly of claim 12 wherein the liner is impregnated with a material capable of curing and hardening.

17. The assembly of claim 12 further comprising a curing head operatively connected to the inversion head and comprising:
a substantially circular body having a first side and a second side;
an inflation port;
a curing port;
a substantially flexible tube, having a first end and a second end, slidably extending through the curing port; and
a drainage port.

18. A method of repairing a damaged section of a pipe, comprising:
providing a liner having an open first end and a substantially closed second end;
attaching the open end of the liner to a discharge end of an inversion head;
impregnating the liner with a material capable of curing and hardening by applying vacuum pressure at an intake end of the inversion head;
inverting the liner into the pipe by a fluid source attached to the intake end of the inversion head;
inflating the liner to press the liner against the wall of the pipe;
inflating a plug at least partially within the inversion head to substantially close the open end of the liner at the inversion head; and
allowing the material to cure and harden.

19. The method of claim 18 further comprising curing the material impregnated in the liner by attaching a curing head to the inversion head and inserting steam to the lumen of the liner.

20. The method of claim 18 wherein the liner comprises a first layer of felt and a second layer comprising an impervious material, and wherein the liner is inverted from a

position wherein the layer of felt is on the inside to a position wherein the impervious layer is on the inside as the liner is inverted through the inversion head.

5

CLAIMS

1. A process for increasing a mole ratio of methyl to phenyl of one or more aromatic hydrocarbon compounds in a feed, comprising:

reacting an effective amount of one or more aromatic hydrocarbon compounds and an effective amount of one or more aromatic methylating agents having at least three carbon atoms comprising at least one of an alkane, a cycloalkane, an alkane radical, and a cycloalkane radical in the presence of a catalyst comprising one or more catalysts selected from MTW, MOR, and MFI molecular sieves, an alumina binder, and absent metals to form a product having a mole ratio of methyl to phenyl of at least about 0.1:1 greater than the feed.

2. The process according to claim 1, wherein the one or more aromatic methylating agents comprises at least one of a cycloalkane and a C3-C8alkane.

3. The process according to claim 1, wherein the one or more aromatic hydrocarbon compounds comprises benzene.

4. The process according to claim 1, wherein the feed comprises at least about 5%, by weight, of benzene with respect to the weight of the feed.

5. The process according to claim 1, wherein the feed comprises at least about 10%, by weight, of one or more cycloalkanes with respect to the weight of the feed.

6. The process according to claim 1, wherein the catalyst comprises at least one of an MFI and MTW zeolite.

7. The process according to claim 1, wherein the one or more aromatic methylating agents comprises at least one of a cycloalkane and a C5-C8alkane.

8. The process according to claim 1, wherein the one or more aromatic methylating agents comprises at least one cycloalkane.

9. The process according to claim 1, wherein the product has a mole ratio of methyl to phenyl of at least about 0.2:1 greater than the feed.

10. A process for reacting one or more aromatic hydrocarbon compounds in a feed, comprising:

reacting the feed comprising an effective amount of one or more aromatic hydrocarbon compounds and an effective amount of one or more aromatic methylating agents having at least three carbon atoms comprising at least one of an alkane, a cycloalkane, an alkane radical, and a cycloalkane radical in the presence of a catalyst comprising one or more zeolites selected from MTW, MOR, and MFI, an alumina binder and absent metal to obtain a product having an aromatic ring recovery of about 85-about 115%, by mole, with respect to the feed and having a mole ratio of methyl to phenyl of at least about 0.1:1 greater than the feed.

11. The process according to claim 10, wherein the feed comprises at least about 5%, by weight, of benzene with respect to the weight of the feed.

12. The process according to claim 10, wherein the one or more aromatic methylating agents comprises at least one cycloalkane.

13. A process for increasing a mole ratio of methyl to phenyl of one or more aromatic hydrocarbon compounds in a feed, comprising:

providing one or more aromatic methylating agents having at least three carbon atoms comprising at least one of an alkane, a cycloalkane, an alkane radical, and a cycloalkane radical from a stream to a reaction zone in the presence of a catalyst comprising a molecular sieve comprising one or more of MTW, MOR, and MFI, an alumina binder, and absent metal, and adapted to receive the one or more aromatic methylating agents to form at least one $A7^+$ compound comprising ethylbenzene by increasing the mole ratio of methyl to phenyl of at least about 0.1:1 greater than the feed.

14. The process according to claim 13, wherein the one or more aromatic methylating agents comprises at least one of a cycloalkane and a C3-C8alkane.