CLAIMS

1. A process for the production of methylbutynol (2-methyl-3-butyn-2-ol), wherein the process comprises at least one pervaporation step.

2. The process of claim 1, comprising providing a feed composition comprising methylbutynol and water, removing a fraction of the feed composition, the fraction having a higher water content than the feed composition, and subjecting the fraction to pervaporation, thereby reducing the water content.

3. The process of at least one of the preceding claims, comprising the steps of
   (a) providing a feed composition comprising methylbutynol and water,
   (b) subjecting the feed composition to distillation in a distillation device,
   (c) removing a sidestream from the distillation device, the sidestream having a higher water content than the feed composition, and
   (d) subjecting said sidestream to pervaporation, thereby reducing the water content.

4. The process of at least one of claims 2 to 3, wherein the feed composition is a crude reaction product of acetone and acetylene, or derived from such a crude reaction product.

5. The process of at least one of claims 2 to 4, wherein the feed composition comprises 50 to 99.5% (w/w) methylbutynol and 0.1 to 25% (w/w) water.

6. The process of at least one of claims 2 to 5, wherein the feed composition comprises
   (i) 50 to 99.5%, preferably 75 to 99% (w/w), methylbutynol,
   (ii) 0.1 to 25%, preferably 0.2 to 10% (w/w), water,
   (iii) 0.1 to 25%, preferably 0.2 to 10% (w/w), acetone, and
   (iv) 0 to 10%, preferably 0.2 to 7.5% (w/w), ammonia.

7. The process of at least one of claims 3 to 6, wherein the feed composition in step (a) comprises acetone, wherein the distillate obtained from the distillation is enriched in acetone, compared to the feed composition, and/or wherein the distillation residue is enriched in methylbutynol, compared to the feed composition.

8. The process of at least one of claims 3 to 7, wherein the distillation is carried out in the absence of an entrainer.

9. The process of at least one of claims 3 to 8, wherein the sidestream in step (c) comprises 50 to 95% (w/w) methylbutynol and 10 to 40% (w/w) water.

10. The process of at least one of the preceding claims, wherein the pervaporation is carried out with a polyvinyl alcohol membrane, polyimide membrane or ceramic membrane.

11. The process of at least one of the preceding claims, wherein the pervaporation is carried out at a temperature between 80 °C and 100 °C.

12. The process of at least one of claims 3 to 11, wherein the retentate of the pervaporation is reintroduced into the distillation device.

13. The process of at least one of claims 3 to 12, wherein the distillation residue comprises more than 99.5% (w/w) methylbutynol and less than 0.1%, preferably less than 0.03%, (w/w) water.

14. The process of at least one of the preceding claims, wherein the process is a continuous process.

15. Use of pervaporation and/or a pervaporation membrane for removing water from methylbutynol, or in a method for purifying methylbutynol.

CLAIMS

The invention claimed is:

1. A process for the production or purification of methylbutynol (2-methyl-3-butyn-2-ol), comprising the steps of

(a) providing a feed composition comprising methylbutynol, water, and acetone,

(b) subjecting the feed composition to distillation in a distillation device,

(c) removing a sidestream from the distillation device, the sidestream having a higher water content than the feed composition, and

(d) subjecting said sidestream to pervaporation, thereby reducing the water content.

2. The process of claim 1, wherein the feed composition is a crude reaction product of acetone and acetylene, or derived from such a crude reaction product.

3. The process of claim 1, wherein the feed composition comprises 50 to 99.5% (w/w) methylbutynol and 0.1 to 25% (w/w) water.

4. The process of claim 1, wherein the feed composition comprises

(i) 50 to 99.5% (w/w), methylbutynol,

(ii) 0.1 to 25% (w/w), water,

(iii) 0.1 to 25% (w/w), acetone, and

(iv) 0 to 10% (w/w), ammonia.

5. The process of claim 1, wherein the feed composition in step (a) comprises acetone, wherein the distillate obtained from the distillation is enriched in acetone, compared to the feed composition, and/or wherein the distillation residue is enriched in methylbutynol, compared to the feed composition.

6. The process of claim 1, wherein the distillation is carried out in the absence of an entrainer.

7. The process of claim 1, wherein the sidestream in step (c) comprises 50 to 95% (w/w) methylbutynol and 10 to 40% (w/w) water.

8. The process of claim 1, wherein the pervaporation is carried out with a polyvinyl alcohol membrane, polyimide membrane or ceramic membrane.

9. The process of claim 1, wherein the pervaporation is carried out at a temperature between 80° C. and 100° C.

10. The process of claim 1, wherein the retentate of the pervaporation is reintroduced into the distillation device.

11. The process of claim 1, wherein the distillation residue comprises more than 99.5% (w/w) methylbutynol and less than 0.1.

12. The process of claim 1, wherein the process is a continuous process.

13. The process of claim 1, wherein the feed composition comprises

(i) 75 to 99% (w/w) methylbutynol,

(ii) 0.2 to 10% (w/w) water,

(iii) 0.2 to 10% (w/w), acetone,

(iv) 0.2 to 7.5% (w/w), ammonia.

14. The process of claim 1, wherein the distillation residue comprises more than 99.5% (w/w) methylbutynol and less than 0.03%, (w/w) water.