

5 Claims

1. A process for removing hydrocarbons comprising the steps of:
 - (A) passing a stream of a solution into a separator wherein a liquid phase comprising polymer and a vapour phase coexist;
 - 10 (B) withdrawing a vapour stream and a concentrated solution stream from the separator;
 - (C) passing at least a part of the vapour stream into a first fractionator;
 - (D) withdrawing a first overhead stream and a first bottom stream from the first fractionator;
 - 15 (E) passing the first overhead stream to a second fractionator;
 - (F) withdrawing a second overhead stream and a second bottom stream from the second fractionator;
 - (G) passing the second overhead stream to a third fractionator;
 - (H) withdrawing a third overhead stream and a third bottom stream from the third
 - 20 fractionator;characterised in that at least a part of the third bottom stream is withdrawn as a purge stream.
2. The process according to claim 1 wherein the stream of the solution comprises 1-hexene and n-octane and a mixture of isomers of 1-hexene and n-hexane.
- 25 3. The process according to claim 2 comprising the step of purging isomers of 1-hexene and n-hexane with the purge stream.
4. The process according to any of the preceding claims comprising the additional step of:
 - (I) passing the first bottom stream to a fourth fractionator;
 - 30 (J) withdrawing a fourth overhead stream and a fourth bottom stream from the fourth fractionator;
 - (K) passing optionally at least a part of the fourth overhead stream to a polymerisation reactor.
5. The process according to any of the preceding claims comprising the additional step
- 35 of:
 - (L) passing optionally at least a part of the third overhead stream to the polymerisation reactor.

- 5 6. The process according to any of the preceding claims comprising the additional step
 of:
 (M) passing optionally at least a part of the third bottom stream to the polymerisation
 reactor.
- 10 7. The process according to any of the preceding claims comprising the additional steps
 of:
 (N) passing optionally at least a part of any of the third bottom stream, third overhead
 stream or fourth overhead stream to a feed vessel;
 (O) withdrawing a feed stream from the feed vessel;
 (P) passing the feed stream via a cooling step to the polymerisation reactor.
- 15 8. The process according to any of the preceding claims wherein the stream of the
 solution comprises ethylene.
9. The process according to any of the preceding claims wherein any of the first, second,
 third or fourth fractionators are distillation columns, stripping columns, multi-phase
 separators, extractors or liquid-liquid separators.
- 20 10. The process according to any of the preceding claims wherein at least a part of the
 purge stream is used as a gasoline additive or as a fuel additive.
11. The process according to any of the preceding claims wherein at least a part of the
 purge stream sent to a hydrogenation step.
- 25 12. The process according to any of the preceding claims wherein at least a part of the
 purge stream is sent to an isomerisation step.