CLAIMS:

1. A process for purifying methyl methacrylate; said process comprising: (a) feeding a reaction product mixture comprising methanol, methyl methacrylate and alkali metal salts thereof, methacrolein, water and heavy byproducts to a first distillation column having at least 15 trays; wherein said reaction product mixture and a C_6-C_7 hydrocarbon enter the first distillation column above the middle of the distillation column; (b) removing a first overhead stream comprising C_6-C_7 hydrocarbon, methacrolein, methanol, water and methyl methacrylate; (c) removing a first bottoms stream comprising water, methyl methacrylate and alkali metal salts thereof and heavy byproducts; (d) feeding the first overhead stream to a first water separator to produce (i) a first organic phase which is returned to the first distillation column and (ii) a first aqueous phase which enters a methanol drying distillation column which produces a second overhead stream rich in methanol and a second bottoms stream which is rich in water, and at least a portion of said second bottoms stream is fed to the first water separator; (e) feeding the first bottoms stream to a second water separator to produce (i) a second aqueous phase which is fed to an MMA stripper distillation column which produces a third overhead stream rich in water and a third bottoms stream comprising water and methyl methacrylate alkali metal salt, and (ii) a second organic phase; (f) combining the second organic phase and the second bottoms stream into a third water separator which produces (i) a third organic phase which enters an MMA drying distillation column which produces a fourth overhead stream and a fourth bottoms stream, and (ii) a third aqueous phase; and (g) feeding the fourth bottoms stream to an MMA product distillation column which produces an MMA product stream and a bottoms stream.

2. The process of claim 1 wherein the reaction product mixture comprises at least 0.8 wt% of alkali metal salts of methyl methacrylate.

3. The process of claim 2 wherein the reaction product mixture comprises from 1 to 10 wt% water.

4. The process of claim 3 wherein the reaction product mixture enters the first distillation column in the highest 30% of the trays.

5. The process of claim 4 wherein C_6-C_7 hydrocarbon is a saturated hydrocarbon having an atmospheric pressure boiling point from 65 to 100°C.

6. The process of claim 5 wherein the fourth overhead stream is sent to the first distillation column in the middle third of the column.

7. The process of claim 6 wherein the reaction product mixture is an initial bottoms stream produced by sending a product from an oxidative esterification reactor to an initial distillation column which also produces an initial overhead stream comprising light components.

8. The process of claim 7 wherein the second overhead stream is recycled to the oxidative esterification reactor.

9. The process of claim 8 wherein the reaction product mixture enters the first distillation column within the highest six trays.