CLAIMS:

1. A process for the purification of 1,3-butadiene, comprising:

passing a butadiene stream to a butene-2 column, thereby generating an overhead stream comprising butadiene, and a bottoms stream comprising oxygenates and heavier hydrocarbons;

passing the overhead stream to a butadiene extraction unit, thereby generated a purified butadiene product stream.

2. The process of claim 1 wherein the butadiene extraction unit comprises:

passing the overhead stream to an extractive distillation column to generate an overhead stream comprising 1-butene, and a bottoms stream comprising butadiene and an extractive solvent; and

passing the bottoms stream to a solvent recovery distillation column to generate an overhead stream comprising purified butadiene and a bottoms stream comprising the extraction solvent.

3. The process of claim 1 further comprising passing the bottoms stream to a second column to generate a second overhead stream comprising n-butane and 2-butene, and a second bottoms stream comprising vinyl acetylene.

4. The process of claim 1 wherein the butene-2 column includes passing the butene-2 bottoms to a second column, and wherein the second column generates a second column overhead stream comprising n-butane and 2-butene, with bottoms stream comprising heavies.

5. The process of claim 2 wherein the extraction solvent is selected from the group consisting of N-methylpyrrolidone (NMP), dimethylformamide (DMF), dimethyl acetamide, and acetonitrile.

6. The process of claim 1 wherein the butene-2 column further generates a side draw stream comprising n-butane and 2-butene.

7. The process of claim 6 further comprising passing the side draw stream to a dehydrogenation unit to generate a stream comprising 1,3 butadiene.

8. The process of claim 6 further comprising passing the side draw stream to a wash to generate a washed stream comprising n-butane and 2-butene.

9. The process of claim 8 further comprising passing the washed stream to a dimerization unit to generate a process stream comprising octene and a raffinate stream.

10. The process of claim 1 further comprising passing the bottoms stream to a selective hydrogenation process to generate a selective hydrogenation process stream comprising n-butane, 2-butene, and heavier hydrocarbons.

CLAIMS:

1. A process for the purification of 1, 3-butadiene, comprising:

passing a butadiene stream to a butene-2 column, thereby generating an overhead stream comprising butadiene, a side draw stream comprising n-butane and 2-butene and a bottoms stream comprising oxygenates and heavier hydrocarbons;

passing the overhead stream to a butadiene extraction unit, thereby generated a purified butadiene product stream.

2. The process of claim 1 wherein the butadiene extraction unit comprises:

passing the overhead stream to an extractive distillation column to generate an overhead stream comprising 1-butene, and a bottoms stream comprising butadiene and an extractive solvent; and

passing the bottoms stream to a solvent recovery distillation column to generate an overhead stream comprising purified butadiene and a bottoms stream comprising the extraction solvent.

3. The process of claim 1 further comprising passing the bottoms stream to a second column to generate a second overhead stream comprising n-butane and 2-butene, and a second bottoms stream comprising vinyl acetylene.

4. The process of claim 1 wherein the butene-2 column includes passing the butene-2 bottoms to a second column, and wherein the second column generates a second column overhead stream comprising n-butane and 2-butene, with bottoms stream comprising heavies.

5. The process of claim 2 wherein the extraction solvent is selected from the group consisting of N-methylpyrrolidone (NMP), dimethylformamide (DMF), dimethyl acetamide, and acetonitrile.

6. The process of claim 1 further comprising passing the side draw stream to a dehydrogenation unit to generate a stream comprising 1,3 butadiene.

7. The process of claim 1 further comprising passing the side draw stream to a wash to generate a washed stream comprising n-butane and 2-butene.

8. The process of claim 7 further comprising passing the washed stream to a dimerization unit to generate a process stream comprising octene and a raffinate stream.

9. The process of claim 1 further comprising passing the bottoms stream to a selective hydrogenation process to generate a selective hydrogenation process stream comprising n-butane, 2-butene, and heavier hydrocarbons.