

CLAIMS

1. A halides removal washing system comprising a process gas duct for process gas comprising hydrocarbons and halides, an injector pipe extending into the process gas duct, said injector pipe has a wash water inlet in a first end of the injector pipe arranged outside the process gas duct and a wash water outlet with an injector nozzle in a second end of the injector pipe adapted to spray the wash water into the process gas in the process gas duct downstream of the injector nozzle.
2. A halides removal washing system according to claim 1, further comprising anti-precipitation means arranged around at least a part of the injector pipe which extends into the process gas duct.
3. A halides removal washing system according to claim 1 or 2, further comprising anti-precipitation means arranged around at least a part of the injector nozzle.
4. A halides removal washing system according to claim 2 or 3, wherein the anti-precipitation means is a heat insulation.
5. A halides removal washing system according to claim 2 or 3, wherein the anti-precipitation means is an injector purge channel adapted to provide a relative hot injector purge fluid compared to the temperature of the wash water.
6. A halides removal washing system according to claim 2 or 3, wherein the anti-precipitation means is an electrical heating wiring.
7. A halides removal washing system according to any of the preceding claims, wherein the process gas duct has an anti-corrosion liner arranged on the inside surface of the process gas duct downstream of the injector nozzle.

8. A halides removal washing system according to any of the preceding claims, wherein an anti-corrosion liner is arranged within the process gas duct adjacent to the inside surface of the process gas duct downstream of the injector nozzle with a gap between the inside surface of the process gas duct and the anti-corrosion liner allowing for a duct purge fluid between the anti-corrosion liner and the process gas duct.

9. A halides removal washing system according to any of the preceding claims, wherein an anti-corrosion liner is arranged within the process gas duct adjacent to the inside surface of the process gas duct downstream of the injector nozzle with a gap of 0.2 – 50 mm between the inside surface of the process gas duct and the anti-corrosion liner allowing for a duct purge fluid between the anti-corrosion liner and the process gas duct.

10. A halides removal washing system according to claim 8 or 9, further comprising a sealing between the anti-corrosion liner and the process gas duct and a duct purge fluid connection to the process gas duct downstream of the injector nozzle adapted to purge fluid into the gap between the anti-corrosion liner and the process gas duct.

11. A halides removal washing system according to any of the claims 8, 9 or 10, comprising a duct purge fluid consumption monitoring system adapted to provide an alarm output if the duct purge fluid consumption exceeds a pre-set value.

12. A halides removal washing system according to any of the preceding claims, further comprising at least one fluid mixer element arranged within the process gas duct downstream the injector nozzle.

13. A halides removal washing system according to any of the preceding claims comprising a plurality of injector pipes and a plurality of injector nozzles.

14. A halides removal washing system according to any of the preceding claims, comprising a plurality of process gas ducts and a plurality of injector pipes and injector nozzles; a common process gas duct upstream the injector nozzles and a plurality of process gas ducts downstream each of the injector nozzles.
15. Use of a halides removal washing system according to any of the preceding claims in a hydrotreatment process.