Claims

1. A hydrogen sulfide scavenging additive composition for scavenging hydrogen sulfide in hydrocarbon comprising sulfur containing compounds, wherein said additive composition comprises at least a combination of:

(A) at least one nitrogen based hydrogen sulfide scavenger; and

(B) at least one aliphatic amine,

wherein the nitrogen based hydrogen sulfide scavenger comprises triazine based hydrogen sulfide scavenger; and

wherein the aliphatic amine comprises N,N,N´,N´-Tetrakis (2-hydroxyethyl) ethylene-diamine (THEED), ethylene oxide (EO) derivative of tri-isopropanolamine (TIPA) (EO-TIPA), propylene oxide (PO) derivative of tri-isopropanolamine (TIPA) (PO-TIPA), ethylene oxide (EO) derivative of ethylene diamine (EO-EDA), propylene oxide (PO) derivative of ethylene diamine (PO-EDA), or a mixture thereof; and

wherein the composition does not comprise:

a) monoethanol amine (MEA);

b) diethanol amine (DEA); and

c) triethanol amine (TEA).

2. The additive composition as claimed in **Claim 1**, wherein the triazine based hydrogen sulfide scavenger comprises mono-ethanolamine triazine (MEAT) based hydrogen sulfide scavenger.

3. The additive composition as claimed in **Claim 1 or Claim 2**, wherein the composition further comprises oxide derivative of nonyl phenol (NP).

4. The additive composition as claimed in **Claim 3**, wherein the oxide derivative of nonyl phenol comprises an ethylene oxide (EO) derivative of nonyl phenol (EO-NP) or propylene oxide (PO) derivative of nonyl phenol (PO-NP), or a mixture thereof.

5. The additive composition as claimed in any one of the preceding **Claims 1 to 4**, wherein the hydrocarbon comprising sulfur containing compounds comprises

hydrocarbon stream selected from the group comprising crude oil, fuel oil, sour gas, asphalts and refined products.

6. The additive composition as claimed in any one of the preceding **Claims 1 to 5**, wherein the sulfur containing compounds comprise hydrogen sulfide containing compounds, mercaptans, or a mixture thereof.

7. A composition comprising:

(a) a hydrocarbon; and

(b) a hydrogen sulfide scavenging additive composition;

wherein the hydrogen sulfide scavenging additive composition comprises at least a combination of:

(A) at least one nitrogen based hydrogen sulfide scavenger; and

(B) at least one aliphatic amine,

wherein the nitrogen based hydrogen sulfide scavenger comprises triazine based hydrogen sulfide scavenger; and

wherein the aliphatic amine comprises N,N,N´,N´-Tetrakis (2-hydroxyethyl) ethylene-diamine (THEED), ethylene oxide (EO) derivative of TIPA (EO-TIPA), propylene oxide (PO) derivative of TIPA (PO-TIPA), ethylene oxide (EO) derivative of ethylene diamine (EO-EDA), propylene oxide (PO) derivative of ethylene diamine (PO-EDA), or a mixture thereof.

8. The composition as claimed in **claim 7**, wherein the triazine based hydrogen sulfide scavenger comprises mono-ethanolamine triazine (MEAT) based hydrogen sulfide scavenger.

9. The composition as claimed in **Claim 7 or Claim 8**, wherein the composition further comprises oxide derivative of nonyl phenol (NP).

10. The composition as claimed in **Claim 9**, wherein the oxide derivative of nonyl phenol comprises an ethylene oxide (EO) derivative of nonyl phenol (EO-NP) or propylene oxide (PO) derivative of nonyl phenol (PO-NP), or a mixture thereof.

11. A method for scavenging hydrogen sulphide in hydrocarbon comprising sulfur containing compounds, wherein the method comprises contacting the hydrocarbon with the hydrogen sulfide scavenging additive composition, wherein the hydrogen sulfide scavenging additive composition is as claimed in any one of the preceding **claims 1 to 6**.

12. A method of using the hydrogen sulfide scavenging additive composition for scavenging hydrogen sulphide in hydrocarbon comprising sulfur containing compounds, wherein the method comprises adding to the hydrocarbon the hydrogen sulfide scavenging additive composition as claimed in any one of the preceding **claims 1 to 6**.

13. A hydrogen sulfide scavenging additive composition for scavenging hydrogen sulfide in hydrocarbon comprising sulfur containing compounds, wherein said additive composition comprises at least a combination of:

(A) at least one nitrogen based hydrogen sulfide scavenger;

(B) at least one aliphatic amine; and

(C) at least one oxide derivative of nonyl phenol (NP);

wherein the nitrogen based hydrogen sulfide scavenger comprises triazine based hydrogen sulfide scavenger; and

wherein the aliphatic amine comprises tri-isopropanolamine (TIPA), N,N,N´,N´-Tetrakis (2-hydroxyethyl) ethylene-diamine (THEED), ethylene oxide (EO) derivative of TIPA (EO-TIPA), propylene oxide (PO) derivative of TIPA (PO-TIPA), ethylene oxide (EO) derivative of ethylene diamine (EO-EDA), propylene oxide (PO) derivative of ethylene diamine (PO-EDA), or a mixture thereof; and

wherein the composition does not comprise:

a) monoethanol amine (MEA);

b) diethanol amine (DEA); and

c) triethanol amine (TEA).

14. The additive composition as claimed in **claim 13**, wherein the oxide derivative of nonyl phenol comprises an ethylene oxide (EO) derivative of nonyl phenol (EO-NP) or propylene oxide (PO) derivative of nonyl phenol (PO-NP), or a mixture thereof.

15. A composition comprising:

(a) a hydrocarbon; and

(b) a hydrogen sulfide scavenging additive composition;

wherein the hydrogen sulfide scavenging additive composition comprises at least a combination of:

(A) at least one nitrogen based hydrogen sulfide scavenger;

(B) at least one aliphatic amine; and

(C) at least one oxide derivative of nonyl phenol (NP);

wherein the nitrogen based hydrogen sulfide scavenger comprises triazine based hydrogen sulfide scavenger; and

wherein the aliphatic amine comprises tri-isopropanolamine (TIPA), N,N,N´,N´-Tetrakis (2-hydroxyethyl) ethylene-diamine (THEED), ethylene oxide (EO) derivative of TIPA (EO-TIPA), propylene oxide (PO) derivative of TIPA (PO-TIPA), ethylene oxide (EO) derivative of ethylene diamine (EO-EDA), propylene oxide (PO) derivative of ethylene diamine (PO-EDA), or a mixture thereof.

16. The composition as claimed in **claim 15**, wherein the oxide derivative of nonyl phenol comprises an ethylene oxide (EO) derivative of nonyl phenol (EO-NP) or propylene oxide (PO) derivative of nonyl phenol (PO-NP), or a mixture thereof.

17. A method for scavenging hydrogen sulphide in hydrocarbon comprising sulfur containing compounds, wherein the method comprises contacting the hydrocarbon with the hydrogen sulfide scavenging additive composition, wherein the hydrogen sulfide scavenging additive composition is as claimed in **claim 13 or claim 14**.

18. A method of using the hydrogen sulfide scavenging additive composition for scavenging hydrogen sulphide in hydrocarbon comprising sulfur containing compounds, wherein the method comprises adding to the hydrocarbon the hydrogen sulfide scavenging additive composition as claimed in **claim 13 or claim 14**