CLAIMS

1. A composition for reducing or inhibiting methanogenesis in ruminants comprising, a halocarbon compound and one or more stabilising agents; wherein the composition is an emulsion, a micelle, a liposome, a hydrogel, or an oil solution; wherein the emulsion, the micelle, the liposome, the hydrogel, or the oil solution comprises the halocarbon compound within the emulsion, the micelle, the liposome, the hydrogel, or the oil solution; wherein the composition does not comprise red marine macroalgae or a halocarbon producing recombinant yeast, and wherein the halocarbon compound is not an extract of red marine macroalgae, or an extract of a halocarbon producing recombinant yeast, or chloroform, or carbon tetrachloride, or methylene chloride, or hexachloroethane, or bromochloromethane, or bromochloroethane, or bromochloropropane, or halothane, or 2-bromoethane sulphonate, or 2-bromo-2-chloroethane sulphonate.

2. The composition of claim 1, comprising the halocarbon compound bromoform.

3. The composition of claim 1 or claim 2, wherein the halocarbon compound is stabilised in terms of having reduced volatility in the composition, compared to the volatility observed in the isolated halocarbon.

4. The composition of any one of claims 1 to 3, wherein the halocarbon compound is stabilised, and wherein stabilisation of the halocarbon compound in the composition, is stabilisation in terms of having reduced loss of the halocarbon compound in the composition, compared to the loss observed in the isolated halocarbon, wherein the reduced loss is measured via comparing the % loss of the halocarbon compound from the composition over a period of time, with the % loss of isolated halocarbon from a sample of the isolated halocarbon over the same period of time, and wherein both the composition and the isolated halocarbon are stored under identical conditions; preferably wherein the % loss of the halocarbon compound from the composition over a period of time is measured via one or more methods selected from the group consisting of GC-MS, or LC-MS, GC-FID or ICP-AES; optionally wherein the % loss of the sample of the isolated halocarbon over the same period of time is measured via one or more methods selected from the group consisting of GC-MS, or LC-MS, GC-FID or ICP-AES; preferably wherein the % loss of the sample of the isolated halocarbon over the same period of time is measured via gravimetric analysis.

5. A composition according to any one of claims 1 to 4, wherein the halocarbon compound is stabilised via encapsulation with an encapsulating agent; wherein the encapsulating agent does not comprise polyethylenemaleic anhydride copolymer; preferably wherein the halocarbon compound is bromoform.

6. A composition according to any one of claims 1 to 5, which composition is a dry powder, comprising a stabilised halocarbon compound; wherein the composition does not comprise methylcellulose, or polyethylenemaleic anhydride copolymer, or cyclodextrin or a cyclic oligosaccharide; preferably wherein the halocarbon compound is bromoform.

7. A composition according to any one of claims 1 to 5, comprising a stabilised halocarbon compound, wherein the composition is in the form of a solid pellet, pill, or tablet; optionally wherein the solid pellet, pill, or tablet is suitable for incorporation into a bolus; preferably wherein the solid pellet, pill, or tablet is adapted to provide in vivo slow-release of the halocarbon compound in the rumen of a ruminant; preferably wherein the composition comprises gelatin; preferably wherein the halocarbon compound is bromoform.

8. A composition according to any one of claims 1 to 5, comprising a stabilised halocarbon compound, wherein the composition is an oil solution comprising a halocarbon compound and an oil; optionally further comprising an alcohol; preferably wherein the halocarbon compound is bromoform; preferably wherein the oil is MCT.

9. A composition according to any one of claims 1 to 5, which composition is a dry powder, comprising a halocarbon compound, and prepared from an emulsion, or micelle, or liposome, or hydrogel, comprising a halocarbon compound; wherein the composition does not comprise methylcellulose, or polyethylenemaleic anhydride copolymer; preferably wherein the halocarbon compound is bromoform.

10. The composition of any one of claims 1 to 9, further comprising;

a) one or more proteins, peptides (including gelatin), oligopeptides or amino acids; and/or

b) one or more carbohydrates, saccharides, disaccharides, oligosaccharides, polysaccharides (including xanthan gum, and guar gum), starches or celluloses; and/or

c) one or more lipids, fatty acids, waxes, oils, sterols, fat-soluble vitamins (including vitamins A, D, E, and K), monoglycerides, diglycerides, triglycerides (including MCT), phospholipids, glycerolipids, sphingolipids, saccharolipids, polyketides, sterol lipids or prenol lipids; and/or

d) one or more emulsifying agents, glycerol, sorbitol, lecithins, glycerophospholipids, phosphatidylcholines, phosphatidylethanolamines, phosphatidylinositols, phosphatidylserines, or phosphatidic acids; and/or

e) one or more surfactants (including polysorbates), food acids, diacetyl tartaric acid esters of mono- and diglycerides, or detergents; and/or

f) one or more encapsulating agents, alkyl celluloses, ethyl celluloses, polyvinyl alcohols, gelatins, carageenans, hydrogels, alginates or alginate salts; and/or

g) one or more edible or biocompatible polymers; and/or

h) fresh milk, and/or whole milk powder, and/or ethanol, and/or water.

11. The composition of any one of claims 1 to 10, further comprising one or more active agent(s).

12. The composition of claim 11, wherein the one or more active agent(s) is selected from the group consisting of small organic or inorganic molecules, saccharines, oligosaccharides, polysaccharides, peptides, proteins, silk fibroin, peptide analogs and derivatives, peptidomimetics, nucleic acids, nucleic acid analogs and derivatives, antibodies, antigen binding fragments of antibodies, lipids, extracts made from biological materials, naturally occurring or synthetic compositions, biologics, biosimilars, and any combinations thereof.

13. The composition of any one of claims 1 to 12, wherein the bromoform of the composition is X% more stable over a period of time (t) than isolated bromoform, wherein X% falls within the range of about 1% to about 5000%, wherein t is an integer representing a number of days; preferably wherein t falls within the range of about 1 to about 600 days.

14. The composition of claim 13, wherein the bromoform of the composition is 80% more stable over a period of 7 days than isolated bromoform; or wherein the bromoform of the composition is 90% more stable over a period of 7 days than isolated bromoform; or wherein the bromoform of the composition is 70% more stable over a period of 360 days than isolated bromoform.

15. The composition of any one of claims 1 to 14, for use, in the inhibition of methanogenesis in a ruminant.

16. The composition of claim 15, wherein the composition comprises bromoform.

17. The composition of any one of claims 1 to 14, when used to inhibit methanogenesis in a ruminant.

18. The composition of claim 17, when used to inhibit methanogenesis in a ruminant, wherein the composition comprises bromoform.