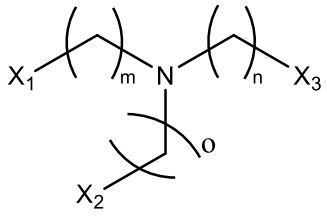
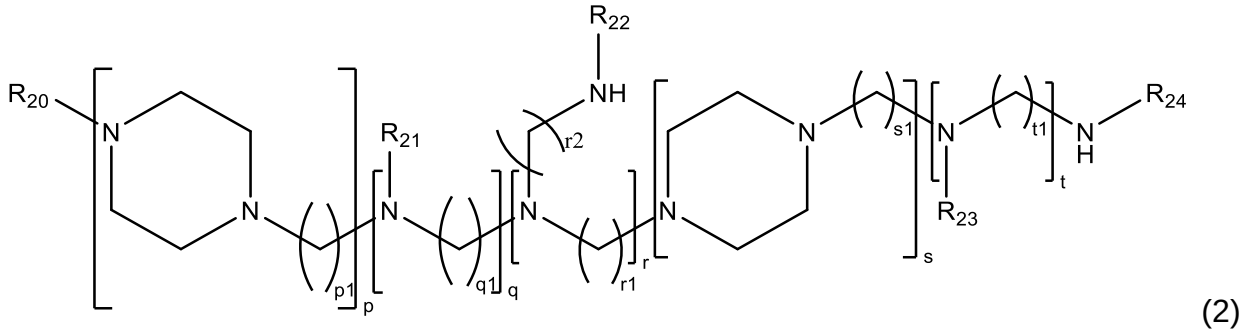
WHAT IS CLAIMED IS:

1. A corrosion-inhibiting composition comprising a dispersant having the structure of Formula 1 and a corrosion inhibitor having the structure of Formula 2:



(1)



(2)

wherein

X_1 is hydroxyl or -OC(O)R_1;

X_2 is hydroxyl or -OC(O)R_2

X_3 is hydroxyl or -OC(O)R_3;

R_1, R_2, and R_3 are independently C_{10} to C_{30} alkyl or alkenyl;

m, n, and o are independently integers from 1 to 10;

R_{20}, R_{21}, R_{22}, R_{23}, and R_{24} are independently hydrogen or –C(O)-R_{31};

R_{31} is C_{10} to C_{30} alkyl or alkenyl;

p is an integer of 0 or 1;

q is an integer of 1 to 4;

r is an integer of 0 or 1;

s is an integer of 0 or 1;

t is an integer from 1 to 4; and

p1, q1, r1, r2, s1, and t1 are independently integers from 1 to 6;

wherein when p, r, and s are 0, q+t is an integer from 4 to 8 and at least one of R_{20}, R_{21}, R_{22}, R_{23}, and R_{24} is –C(O)-R_{31}.

2. The corrosion-inhibiting composition of claim 1, wherein m, n, and o are independently integers of 2 or 3.

3. The corrosion-inhibiting composition of claim 1, wherein m, n, and o are 2.

4. The corrosion-inhibiting composition of any one of claims 1 to 7, wherein X_1 is hydroxyl or -OC(O)R_1.

5. The corrosion-inhibiting composition of claim 8, wherein X_1 is hydroxyl.

6. The corrosion-inhibiting composition of claim 4, wherein R_1 is C_{12} to C_{24} alkyl or alkenyl.

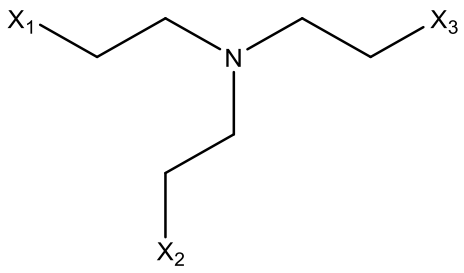
7. The corrosion-inhibiting composition of any one of claims 1 to 6, wherein X_2 is hydroxyl or -OC(O)R_2.

8. The corrosion-inhibiting composition of claim 7, wherein R_2 is C_{12} to C_{24} alkyl or alkenyl.

9. The corrosion-inhibiting composition of any one of claims 1 to 8, wherein X_3 is hydroxyl or -OC(O)R_3.

10. The corrosion-inhibiting composition of claim 9, wherein R_3 is C_{12} to C_{24} alkyl or alkenyl.

11. The corrosion-inhibiting composition of any one of claims 1 to 10, wherein the dispersant of Formula 1 has the structure of Formula 1A:

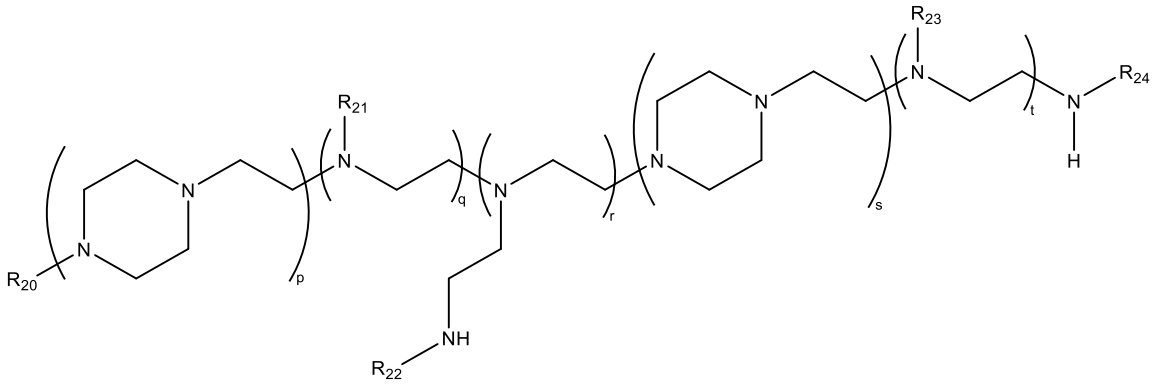


(1A).

12. The corrosion-inhibiting composition of any one of claims 1 to 11, wherein p1, q1, r1, r2, s1, and t1 are independently integers of 2 or 3.

13. The corrosion-inhibiting composition of claim 12, wherein p1, q1, r1, r2, s1, and t1 are an integer of 2.

14. The corrosion-inhibiting composition of any one of claims 1 to 13, wherein the corrosion inhibitor of Formula 2 has the structure of Formula 2A:



(2A).

15. The composition of claim 14, wherein R_{31} is C_{12} to C_{24} alkyl or alkenyl.

16. The corrosion-inhibiting composition of any one of claims 1 to 15, further comprising a solvent.

17. A method of inhibiting corrosion by contacting the corrosion-inhibiting composition of any one of claims 1 to 16 with a surface in contact with an aqueous medium comprising

hydrogen sulfide, ammonia, carbon dioxide, hydrogen cyanide, carbonate, bicarbonate, or a combination thereof.

18. Use of the corrosion-inhibiting composition of any one of claims 1 to 16 for inhibiting corrosion on a surface in contact with an aqueous medium comprising hydrogen sulfide, ammonia, carbon dioxide, hydrogen cyanide, carbonate, bicarbonate, or a combination thereof.

19. The method or use of claim 17 or 18, wherein the aqueous medium comprises carbonate, bicarbonate, or a combination thereof.

20. The method or use of any one of claims 17 to 19, wherein the surface is a metal surface.

21. The method or use of any one of claims 17 to 20, wherein the surface is contained in a fluid catalytic cracking unit (FCCU) or sour water stripper (SWS).

22. The method or use of any one of claims 17 to 21, wherein the corrosion-inhibiting composition is contacted with the surface at a concentration of 1 to 1000 ppm based on the total weight of the aqueous medium.