CLAIMS

1. A process for preparing an alcohol ether sulfate, the process comprising:

(a) sulfating an alkoxylated alcohol;

(b) neutralizing the sulfated product of step (a) in the presence of a base and a co-solvent having a flash point of at least 60^{o}C, wherein the co-solvent is selected from the group consisting of polyhydric alcohols, alkylene glycol monoethers, polyalkylene glycols, and polyalkylene glycol monoethers.

2. The process of claim 1, wherein the alcohol ether sulfate has a number average molecular weight of at least 2000.

3. The process of claim 1, wherein the alcohol ether sulfate is represented by the following structure:

$$RO—(C_3H_6O)_x—(C_2H_4O)_y—OSO_3M$$

wherein:

R is a C_{12}-C_{40} aliphatic hydrocarbon group;

$x>1$;

$y>1$;

$x+y\leq 100$; and

M is an alkali metal cation, an alkaline earth metal cation, an ammonium cation or a substituted ammonium cation.

4. The process of claim 3, wherein R is a branched C_{24}-C_{32} alkyl group.

5. The process of claim 3, wherein *x* is in a range from 20 to 50 and *y* is in a range from 5 to 15.

6. The process of claim 3, wherein *x* is in a range from 20 to 50 and *y* is in a range from 20 to 50.

7. The process of claim 1, wherein the sulfating step (a) comprises reacting the alkoxylated alcohol with sulfur trioxide, which has been diluted with air.

8. The process of claim 1, wherein the co-solvent has a flash point of from 60^{o}C to 300^{o}C.

9. The process of claim 1, wherein the co-solvent has a flash point of from 65^{o}C to 250^{o}C.

10. The process of claim 1, wherein the co-solvent is selected from the group consisting of ethylene glycol, propylene glycol, ethylene glycol *n*-butyl ether, diethylene glycol, triethylene glycol, tetraethylene glycol, dipropylene glycol, tripropylene glycol, diethylene glycol methyl ether, diethylene glycol ethyl ether, diethylene glycol *n*-butyl ether, triethylene glycol methyl ether, triethylene glycol ethyl ether, triethylene glycol *n*-butyl ether, polyethoxylated C_2-C_4 alcohols having from 5 to 25 ethylene oxide units per molecule, and combinations thereof.

11. The process of claim 1, wherein the weight ratio of the co-solvent to the sulfated product of step (a) is from 0.01:1 to 10:1.

12. The process of claim 1, wherein the base is an alkali metal hydroxide.

13. The process of claim 1, wherein the process is a continuous process.