Claims as enclosed to IPRP

1. Use of compounds of the general formula I

$$R^1[O(EO)_x(AO)_yR^2]_z \qquad (I)$$

with the following definitions:

R^1	is a z-valent alkyl radical having 1 to 10 carbon atoms,
R^2	is hydrogen and/or a monovalent alkyl radical having 1 to 10 carbon atoms,
EO	is an ethyleneoxy radical,
AO	is an alkyleneoxy radical having 3 to 10 carbon atoms,
x	is a number from 1 to 8, especially 2 to 8,
y	is a number from 0.5 to 6, especially 1 to 4,
z	is a number from 1 to 6, especially 1 to 3,

for production of cooling and/or lubricating fluids for removal of material, especially for sawing of wafers with a wire saw, with reduced water absorption and a water content of less than 1% by weight.

2. Use according to Claim 1, characterized in that, in the formula I,

R^1 is a z-valent alkyl radical having 1 to 6 carbon atoms, especially butyl.

3. Use according to Claim 1 or 2, characterized in that the contact angle of the cooling and/or lubricating fluids at 25 °C after one second after droplet application to a plate of V2A steel, the surface of which is rinsed with water and acetone and then dried under air is 10 to 40°, preferably 10 to 35°.

4. Use according to any of Claims 1 to 3, characterized in that the viscosity of the cooling and/or lubricating fluids at 20 °C is 15 to 120 mPas, more preferably 20 to 110 mPas, determined with a Brookfield LVDV-III Ultra apparatus (V-73 spindle).

5. Use according to any of Claims 1 to 4, characterized in that the cooling and/or lubricating fluid is used in a fixed abrasive wafer cutting process, especially using a diamond wire saw.

6. Use according to any of Claims 1 to 5, characterized in that the coolant and/or lubricant is worked up and/or recycled after the removal of the material, especially after the sawing of wafers with a wire saw, for removal of the resultant attritus.

7. Use according to any of Claims 1 to 6, characterized in that the attritus is less than 60 mg, measured as the decrease in weight of the stainless steel cylinder used, measured on a Reichert balance.

8. Cooling and/or lubricating fluid comprising at least one compound of the general formula I

$$R^1[O(EO)_x(AO)_yR^2]_z \qquad (I)$$

with the following definitions:

R^1	is a z-valent alkyl radical having 1 to 10 carbon atoms,
R^2	is hydrogen and/or a monovalent alkyl radical having 1 to 10 carbon atoms,
EO	is an ethyleneoxy radical,
AO	is an alkyleneoxy radical having 3 to 10 carbon atoms,
x	is a number from 1 to 6, especially 1 to 4,
y	is a number from 0.5 to 6, especially 1 to 4,
z	is a number from 1 to 6, especially 1 to 3,

characterized in that the cooling and/or lubricating fluid has a water content of less than 1% by weight.

9. Cooling and/or lubricating fluid according to Claim 8, characterized in that R^1 is butyl.

10. Use of a cooling and/or lubricating fluid according to Claim 8 or 9 for removal of material, especially for sawing of wafers with a wire saw, especially with a diamond wire saw.

11. Process for cutting wafers from an article with a wire saw, characterized in that the article and/or the cut in the article is cooled and/or lubricated with a cooling and/or lubricating fluid as defined in Claim 1 or according to Claim 8 or 9.

12. Wafer, especially silicon wafer, producible, especially produced, by the process according to Claim 11.

Claims

1. Use of compounds of the general formula I

$$R^1[O(EO)_x(AO)_yR^2]_z \qquad (I)$$

with the following definitions:

R^1	is a z-valent alkyl radical having 1 to 10 carbon atoms,
R^2	is hydrogen and/or a monovalent alkyl radical having 1 to 10 carbon atoms,
EO	is an ethyleneoxy radical,
AO	is an alkyleneoxy radical having 3 to 10 carbon atoms,
x	is a number from 1 to 8, especially 2 to 8,
y	is a number from 0.5 to 6, especially 1 to 4,
z	is a number from 1 to 6, especially 1 to 3,

for production of cooling and/or lubricating fluids for removal of material, especially for sawing of wafers with a wire saw, with reduced water absorption and a water content of less than 1% by weight,

wherein the attritus is less than 60 mg, measured as the decrease in weight of the stainless steel cylinder used, measured on a Reichert balance.