Chemically stabilized herbicidal oil-based suspension.

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Description

The present invention relates to a chemically stabilized herbicidal oil-based suspension containing N-[4-(4,6-dimethoxy-2-pyrimidinyl)-aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide (hereinafter referred to as compound A) and/or a salt thereof as an effective herbicidal component, which suppresses the decomposition of compound A and/or a salt thereof.

The present inventors found previously that pyridinesulfonamide series compounds including compound A and the salts thereof exhibit a very high herbicidal effect when they can be applied to a wide range of weeds including strongly harmful weeds, and filed European Patent Application No. 87300502.9 (or Laid-open European Patent Application No. 232067) on the basis of this finding. The inventors also found that a suspended composition comprising at least one compound selected from the pyridinesulfonamide series compounds and the salts thereof, a vegetable oil and a surfactant, which are mixed at a predetermined ratio, permits improving the herbicidal effect and decreasing the amount of the effective herbicidal component, and filed European Patent Application No. 88309772.7 (or Laid-open European Patent Application No. 313317).


However, none of the publications exemplified above teaches the idea of adding urea to a herbicidal oil-based suspension containing compound A and/or a salt thereof for chemically stabilizing it.

As a result of extensive research on methods for chemically stabilizing a herbicidal oil-based suspension containing compound A and/or a salt thereof, the present inventors have found that compound A and/or a salt thereof can be prevented from decomposition by adding urea to the suspension so as to chemically stabilize it, arriving at the present invention.

According to the present invention, there is provided a chemically stabilized herbicidal oil-based suspension, comprising compound A and/or a salt thereof, urea, a vegetable oil and/or mineral oil, and a surfactant.

The present invention also provides a chemically stabilized herbicidal oil-based suspension, comprising compound A and/or a salt thereof, urea, a vegetable oil and/or mineral oil, and a surfactant, and at least one additional herbicidal component (hereinafter referred to as other specified herbicidal component(s)) selected from the group consisting of 2,4-dichlorophenoxyacetic acid (common name: 2,4-D), an alkyl ester and salt thereof,

3,6-dichloro-2-methoxybenzoic acid (common name: dicamba) and a salt thereof,
2-chloro-4-ethylamino-6-isopropylamino-s-triazine (common name: atrazine),
3-(1-methylthio)-1H-2,1,3-benzothiadiazin-4(3H)-one-2,2-dioxide (common name: bentazon),
2-chloro-2′,6′-diethyl-N-(methoxymethyl)acetanilide (common name: alachlor),
2-chloro-6′-ethyl-N-(2-methoxy-1-methylethyl)acetox-o-toluidide (common name: metolachlor),
2-chloro-N-isopropylacetanilide (common name: propachlor), N-(1-ethylpropyl)-2,6-dinitro-3,4-xylidine (common name: pendimethalin),
2-(3,5-dichlorophenyl)-2-[(2,2,2-trichloroethyl)oxirane (common name: tridiphane), methyl 2-[[4,6-bis-(difluoromethoxy)pyrimidin-2-yl]aminocarbonyl]aminosulfonyle]benzoate (common name: primisulfuron-methyl) and a salt thereof,
3,5-dibromo-4-hydroxybenzonitrile (common name: bromoxynil), a carboxylic acid ester and salt thereof,
5,7-dimethyl-N-(2,6-dichlorophenyl)-1,2,4-triazolo [1,5-a]pyrimidine-2-sulfonamide (D489: a compound described in Plant Physiology, 1990, Vol. 93, pages 962 to 966), 2-chloro-N-(ethoxymethyl)-2′-ethyl-6′-methylacetanilide (common name: acetochlor),
O-(6-chloro-3-phenyl-4-pyridazinyl) S-octyl carbonothioate (common name: pyridate),
1-(4,6-dimethoxy pyrimidin-2-yl)-3-(3-ethylsulfonyl-2-pyridyl sulfonfyl) urea (DPX-E9636: a compound described in Short Review of Herbicides & PGRs, 1991, page 94) and a salt thereof, 2-(2-chloro-4-(methylsulfonyl) benzoyl)-1,3-cyclohexanediol (common name: sulcotrine) and a salt thereof, methyl 3-chloro-5-(4,6-dimethoxy pyrimidin-2-yl carbamoyl sulfamoyl)-1-methyl pyrazole-4-carboxylate (NC-319: a compound described in BRIGHTON CROP PROTECTION CONFERENCE-Weeds-1991, page 31) and a salt thereof,
and 3-(3,4-dichlorophenyl)-1-methoxy-1-methylurea (common name: linuron).

In other words, in a herbicidal oil-based suspension comprising compound A and/or a salt thereof as an effective herbicidal component, or in a herbicidal oil-based suspension comprising compound A and/or a salt thereof as well as other specified herbicidal component(s) as an effective herbicidal component, the chemically stabilized herbicidal oil-based suspension characterized in that urea is added to said suspension.

The chemically stabilized herbicidal oil-based suspension of the present invention comprises compound A and/or a salt thereof, and, as required, other specified herbicidal component(s), and, urea, a vegetable oil and/or mineral oil, a surfactant and, optionally, a thickener, a solvent and other adjuvants. These components are mixed uniformly, or optional components are mixed in advance, followed by adding the other components, so as to obtain the suspension of the present invention in the form of an oil-based suspension concentrate or a formulation for ultra low volume spraying. In preparing the suspension of the present invention, it is possible to employ wet grinding, as required.

The salts of compound A contained in the suspension of the present invention include, for example, salts with alkali metals such as sodium and potassium, salts with alkaline earth metals such as magnesium and calcium, and salts with amines such as monomethylamine, dimethylamine and triethylamine. It is possible for compound A to be present together with a salt thereof.

The other specified herbicidal component includes, for example, salts, alkyl esters and carboxylic acid esters. The salts include those similar to the salts of compound A described above, salts with amines such as diolamine and trolamine, and dimethylammonium salt. The alkyl esters include the esters with ethyl, butyl, heptyl, octyl, iso-octyl and butoxyethyl groups. Further, the carboxylic acid esters includes the esters with carboxylic acids such as butanoic acid, heptanoic acid and octanoic acid.

Among the additional herbicidal components, preferred are 2,4-D, an alkyl ester and salt thereof, dicamba and a salt thereof, bromoxynil, a carboxylic acid ester and salt thereof, pyridate, DPX-E9636 and a salt thereof, and sulcotrine and a salt thereof.

The vegetable oil and mineral oil used in the suspension of the present invention include, for example, olive oil, kaol oil, castor oil, papaya oil, camellia oil, palm oil, sesame oil, corn oil, rice bran oil, peanut oil, cotton seed oil, soybean oil, rapeseed oil, linseed oil, tung oil, sunflower oil, safflower oil, and liquid paraffin. Particularly, it is desirable to use corn oil and rapeseed oil. These vegetable oils and mineral oils can be used in the form of a mixture, if necessary.

The surfactant used in the present invention includes, for example, salt of alkyl sulfonic acid, salt of alkylbenzene sulfonic acid, salt of lignin sulfonic acid, polyoxyethylene glycol alkyl ether, polyoxyethylene lauryl ether, polyoxyethylene alkyl ether, polyoxyethylene alkylaryl ether, polyoxyethylene fatty acid ester, polyoxypropylene fatty acid ester, polyoxyethylene sorbitan fatty acid ester, polyoxyethylene styrlyphenyl ether, salt of polycarboxylic acid, salt of dialkylsulfosuccinic acid, salt of alklydiglycol ether, salt of polyoxyethylene alkylaryl ether sulfate, salt of polyoxyethylene alkylaryl phosphoric acid ester, polyoxyethylene hydrogenated castor oil, salt of styrlyphenyl phosphoric acid, condensate of naphthalenesulfonate with formalin, salt of benzoic acid, fatty acid polyglyceride, glycerin fatty acid ester, sorbitan monooleic acid ester, polyoxyethylene sorbitan monolauroic acid ester, and fatty acid alcohol polyglycol ether. These surfactants can be used in the form of a mixture, if necessary.

The thickener which is contained as required in the chemically stabilized herbicidal oil-based suspension of the present invention includes, for example, silica and bentonite-alkylamine complex. Further, the solvent which is contained as required in chemically stabilized herbicidal oil-based suspension of the present invention includes, for example, aliphatic hydrocarbons such as normal paraffins and isoparaffins; aromatic hydrocarbons such as benzene, alkylbenzene, naphthalene, alkylnapththalene, diphenyl, and phenyl xylol ethane; heterocyclic compounds such as N-methylpyrrolidone and 1,3-dimethyl-2-imidazolidinone; alcohols; ethers; ketones; and esters.

The specific materials exemplified above as the thickener and solvent used in the present invention can be used in the form of a mixture, if necessary.

Concerning the mixing ratio of the components, the chemically stabilized herbicidal oil-based suspension of the present invention comprises, based on the total weight of the suspension, 0.5 to 20 parts by weight, preferably 1 to 8 parts by weight, more preferably 2 to 6 parts by weight, of compound A and/or a
salt thereof, 0.5 to 75 parts by weight, preferably 0.5 to 50 parts by weight of other specified herbicidal component(s) in the case where the suspension contains said another specified herbicidal component, 0.2 to 10 parts by weight, preferably 0.5 to 5 parts by weight, of urea, 19 to 93.8 parts by weight, preferably 30 to 88 parts by weight, more preferably 38.5 to 88 parts by weight of a vegetable oil and/or mineral oil, 5 to 25 parts by weight, preferably 8 to 15 parts by weight, of a surfactant, 0 to 5 parts by weight, preferably 0.5 to 3 parts by weight, more preferably 1 to 2 parts by weight, of a thickener when added to the suspension, and 0 to 74.8 parts by weight, preferably 10 to 49.5 parts by weight, of a solvent when added to the suspension. Further, suitable amounts of other adjuvants are also contained as required in the suspension of the present invention.

Exemplified below are formulations of the chemically stabilized herbicidal oil-based suspension of the present invention. Of course, the present invention is not restricted to the formulations exemplified below.

Formulation Example 1

<table>
<thead>
<tr>
<th></th>
<th>Parts by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Compound A (purity: 93.8%)</td>
<td>4.91</td>
</tr>
<tr>
<td>(2) A mixture of polyoxyethylene nonylphenyl ether, dialkylsulfosuccinate, polyoxyethylene hydrogenated castor oil, and polyglycerol esters of fatty acid (trade name: Sorpol 3815K, manufactured by Toho Chemical Industry, Co., Ltd.)</td>
<td>12.55</td>
</tr>
<tr>
<td>(3) Bentonite-alkylamino complex (trade name: New D ORBEN, manufactured by Shiraishi Kogyo Kaisha, Ltd.)</td>
<td>2.09</td>
</tr>
<tr>
<td>(4) Urea</td>
<td>1.05</td>
</tr>
<tr>
<td>(5) Corn oil</td>
<td>79.40</td>
</tr>
</tbody>
</table>

A mixture of components (1) to (5) was subjected to wet-grinding for 15 minutes using a wet-grinding machine DYNOMILL type KDL manufactured by Willy A. Bachofen. The wet-grinding machine was loaded at a loading rate of 60% with glass beads having a diameter of 1.0 mm and rotated at a peripheral speed of 10.5 m/sec and an oil-based suspension concentrate was obtained.

Formulation Example 2

An oil-based suspension concentrate was obtained as in Formulation Example 1, except that urea was used in an amount of 2.09 parts by weight in contrast to 1.05 parts by weight in Formulation Example 1, and that corn oil was used in an amount of 78.26 parts by weight in place of 79.40 parts by weight in Formulation Example 1.

Formulation Example 3

An oil-based suspension concentrate was obtained as in Formulation Example 1, except that urea was used in an amount of 3.14 parts by weight in contrast to 1.05 parts by weight in Formulation Example 1, and that corn oil was used in an amount of 77.31 parts by weight in place of 79.40 parts by weight in Formulation Example 1.

Formulation Example 4

An oil-based suspension concentrate was obtained as in Formulation Example 1, except that the wet-grinding was performed for 30 minutes in place of 15 minutes in Formulation Example 1.
### Formulation Example 5

| (1) Compound A (purity: 93.8%) | 2.79 |
| (2) Octanoic acid ester of 3,5-dibromo-4-hydroxybenzonitrile (purity: 94.6%) | 25.38 |
| (3) A mixture of glycerine fatty acid ester and polyoxyethylene alkylaryl ether (trade name: GERONOL VO/278, manufactured by Rhone-Poulenc) | 9.44 |
| (4) Fine amorphous silica (trade name: AEROSIL R974, manufactured by Degussa) | 0.94 |
| (5) Urea | 0.57 |
| (6) Corn oil | 60.88 |

A mixture of components (1) to (6) was subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and an oil-based suspension concentrate was obtained.

### Formulation Example 6

An oil-based suspension concentrate was obtained as in Formulation Example 5, except that urea was used in an amount of 0.75 part by weight in place of 0.57 part by weight in Formulation Example 5, and that corn oil was used in an amount of 60.70 parts by weight in place of 60.88 parts by weight in formulation Example 5.

### Formulation Example 7

An oil-based suspension concentrate was obtained as in Formulation Example 5, except that urea was used in an amount of 0.94 part by weight in place of 0.57 part by weight in Formulation Example 5, and that corn oil was used in an amount of 60.51 parts by weight in place of 60.88 parts by weight in Formulation Example 5.

### Formulation Example 8

An oil-based suspension concentrate was obtained as in Formulation Example 5, except that urea was used in an amount of 1.42 parts by weight in place of 0.57 part by weight in Formulation Example 5, and that corn oil was used in an amount of 60.03 parts by weight in place of 60.88 parts by weight in Formulation Example 5.

### Formulation Example 9

| (1) Compound A (purity: 93.8%) | 2.79 |
| (2) Octanoic acid ester of 3,5-dibromo-4-hydroxybenzonitrile (purity: 94.6%) | 25.38 |
| (3) GERONOL VO/278 (trade name) | 9.44 |
| (4) AEROSIL R974 (trade name) | 1.51 |
| (5) Urea | 0.94 |
| (6) Aromatic solvent with a high boiling point (trade name: SOLVESSEO 200, manufactured by Exxon Chemical Ltd.) | 18.87 |
| (7) Corn oil | 41.07 |

A mixture of components (1) to (7) was subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and an oil-based suspension concentrate was obtained.
Formulation Example 10

An oil-based suspension concentrate was obtained as in Formulation Example 9, except that an aromatic solvent with a high boiling point (trade name: HISOL SAS-296, manufactured by Nippon Petrochemicals Co., Ltd.) was used in place of SOLVESSO 200 (trade name) used in Formulation Example 9.

Formulation Example 11

An oil-based suspension concentrate was obtained as in Formulation Example 9, except that wet-grinding was performed for 30 minutes in place of 15 minutes in Formulation Example 9.

Formulation Example 12

<table>
<thead>
<tr>
<th></th>
<th>Parts by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Compound A (purity: 93.8%)</td>
<td>4.69</td>
</tr>
<tr>
<td>(2) Ethyl 2,4-dichlorophenoxyacetate (purity: 97.8%)</td>
<td>21.47</td>
</tr>
<tr>
<td>(3) GERONOL VO/278 (trade name)</td>
<td>10.00</td>
</tr>
<tr>
<td>(4) AEROSIL R974 (trade name)</td>
<td>1.00</td>
</tr>
<tr>
<td>(5) Urea</td>
<td>1.00</td>
</tr>
<tr>
<td>(6) Corn oil</td>
<td>61.84</td>
</tr>
</tbody>
</table>

A mixture of components (1) to (6) was subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and an oil-based suspension concentrate was obtained.

Formulation Example 13

An oil-based suspension concentrate was obtained as in Formulation Example 12, except that urea was used in an amount of 2.00 parts by weight in place of 1.00 part by weight used in Formulation Example 12, and that corn oil was used in an amount of 60.84 parts by weight in place of 61.84 parts by weight used in Formulation Example 12.

Formulation Example 14

An oil-based suspension concentrate is obtained as in Formulation Example 1, except that rapeseed oil is used in place of corn oil used in Formulation Example 1.

Formulation Example 15

An oil-based suspension concentrate is obtained as in Formulation Example 1, except that fatty alcohol polyglycol ether (trade name: Emulsogen EL-100, manufactured by Hoechst) is used in place of Sorpol 3815K (trade name) used in Formulation Example 1.
Formulation Example 16

<table>
<thead>
<tr>
<th>(1) Compound A (purity: 93.8%)</th>
<th>Parts by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Octanoic acid ester of 3,5-dibromo-4-hydroxybenzonitrile (purity: 94.2%)</td>
<td>25.49</td>
</tr>
<tr>
<td>(3) GERONOL VO/278 (trade name)</td>
<td>11.32</td>
</tr>
<tr>
<td>(4) Bentonite-alkylamino complex (trade name: BENTONE SD-1, manufactured by RHEOX, Inc.)</td>
<td>2.36</td>
</tr>
<tr>
<td>(5) HISOL SAS-296 (trade name)</td>
<td>18.87</td>
</tr>
<tr>
<td>(6) Urea</td>
<td>0.94</td>
</tr>
<tr>
<td>(7) Rapeseed oil</td>
<td>38.22</td>
</tr>
</tbody>
</table>

A mixture of components (1) to (7) was subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and an oil-based suspension concentrate was obtained.

Formulation Example 17

<table>
<thead>
<tr>
<th>(1) Compound A (purity: 93.8%)</th>
<th>Parts by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Sorpol 3815K (trade name)</td>
<td>12.55</td>
</tr>
<tr>
<td>(3) New D ORBEN (trade name)</td>
<td>2.09</td>
</tr>
<tr>
<td>(4) Urea</td>
<td>1.05</td>
</tr>
<tr>
<td>(5) Corn oil</td>
<td>81.86</td>
</tr>
</tbody>
</table>

A mixture of components (1) to (5) is subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and a formulation for ultra low volume spraying is obtained.

Formulation Example 18

A formulation for ultra low volume spraying is obtained as in Formulation Example 17, except that compound A is used in an amount of 1.23 parts by weight in place of 2.45 parts by weight used in Formulation Example 17, and that corn oil is used in an amount of 83.08 parts by weight in place of 81.86 parts by weight used in Formulation Example 17.

Formulation Example 19

<table>
<thead>
<tr>
<th>(1) Compound A (purity: 93.8%)</th>
<th>Parts by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Octanoic acid ester of 3,5-dibromo-4-hydroxybenzonitrile (purity: 94.8%)</td>
<td>12.69</td>
</tr>
<tr>
<td>(3) GERONOL VO/278 (trade name)</td>
<td>9.44</td>
</tr>
<tr>
<td>(4) AEROSIL R974 (trade name)</td>
<td>1.51</td>
</tr>
<tr>
<td>(5) Urea</td>
<td>0.94</td>
</tr>
<tr>
<td>(6) SOLVESSO 200 (trade name)</td>
<td>18.87</td>
</tr>
<tr>
<td>(7) Corn oil</td>
<td>55.15</td>
</tr>
</tbody>
</table>

A mixture of components (1) to (7) is subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and a formulation for ultra low volume spraying is obtained.
Comparative Formulation Example 1

<table>
<thead>
<tr>
<th>Parts by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Compound A (purity: 93.8%)</td>
</tr>
<tr>
<td>(2) Sorpol 3815K (trade name)</td>
</tr>
<tr>
<td>(3) New D ORBEN (trade name)</td>
</tr>
<tr>
<td>(4) Corn oil</td>
</tr>
</tbody>
</table>

A mixture of components (1) to (4) was subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and an oil-based suspension concentrate was obtained.

Comparative Formulation Example 2

<table>
<thead>
<tr>
<th>Parts by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Compound A (purity: 93.8%)</td>
</tr>
<tr>
<td>(2) Octanoic acid ester of 3,5-dibromo-4-hydroxybenzonitrile (purity: 94.6%)</td>
</tr>
<tr>
<td>(3) GERONOL VO/278 (trade name)</td>
</tr>
<tr>
<td>(4) AEROSIL R874 (trade name)</td>
</tr>
<tr>
<td>(5) Corn oil</td>
</tr>
</tbody>
</table>

A mixture of components (1) to (5) was subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and an oil-based suspension concentrate was obtained.

Comparative Formulation Example 3

<table>
<thead>
<tr>
<th>Parts by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Compound A (purity: 93.8%)</td>
</tr>
<tr>
<td>(2) Ethyl 2,4-dichlorophenoxyacetate (purity: 97.8%)</td>
</tr>
<tr>
<td>(3) GERONOL VO/278 (trade name)</td>
</tr>
<tr>
<td>(4) AEROSIL R874 (trade name)</td>
</tr>
<tr>
<td>(5) Corn oil</td>
</tr>
</tbody>
</table>

A mixture of components (1) to (5) was subjected to wet-grinding for 15 minutes with the same wet-grinding machine and conditions as in Formulation Example 1, and an oil-based suspension concentrate was obtained.

These formulations and comparative formulations were subjected to various tests as follows:

Test 1

50 m.t of the oil-based suspension concentrate obtained in each of Formulation Examples 1 to 3 and Comparative Formulation Example 1 was put in a glass container provided with stopper, and subjected to an accelerated storage stability test for one week under a constant temperature of 60 °C. The rates of decomposition of compound A were determined with HPLC. The results are shown in Table 1.
Table 1

<table>
<thead>
<tr>
<th>Formulation Example</th>
<th>Decomposition rate (%) of Compound A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.9</td>
</tr>
<tr>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>3</td>
<td>6.5</td>
</tr>
<tr>
<td>Comparative Formulation Example 1</td>
<td>12.6</td>
</tr>
</tbody>
</table>

As apparent from Table 1, the decomposition of compound A was markedly suppressed in each of Formulation Examples 1 to 3, compared with Comparative Formulation Example 1.

Test 2

50 mL of the oil-based suspension concentrate obtained in each of Formulation Examples 5 to 8 and Comparative Formulation Example 2 was put in a glass container provided with stopper, and subjected to an accelerated storage stability test for one month under a constant temperature of 50 °C and for 2 weeks under a constant temperature of 60 °C, respectively. The rates of decomposition of compound A were determined with HPLC after predetermined period. The results are shown in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Formulation Example</th>
<th>Decomposition rate (%) of Compound A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50 °C</td>
</tr>
<tr>
<td></td>
<td>2 weeks later</td>
</tr>
<tr>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>7</td>
<td>0.5</td>
</tr>
<tr>
<td>8</td>
<td>0.5</td>
</tr>
<tr>
<td>Comparative Formulation Example 2</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Table 2 clearly shows that the decomposition of compound A was markedly suppressed in each of Formulation Examples 5 to 8, compared with Comparative Formulation Example 2. Further, decomposition of octanoic acid ester of 3,5-dibromo-4-hydroxybenzonitrile was not recognized in each of these Formulation Examples and Comparative Formulation Example.

Test 3

50 mL of the oil-based suspension concentrate obtained in each of Formulation Examples 9 and 10 was put in a glass container provided with stopper, and subjected to an accelerated storage stability test for one week under a constant temperature of 60 °C. The rates of decomposition of compound A were determined with HPLC. The result are shown in Table 3.
Table 3

<table>
<thead>
<tr>
<th>Formulation Example</th>
<th>Decomposition rate (%) of Compound A</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Table 3 shows that the decomposition of compound A was markedly suppressed in each of Formulation Examples 9 and 10, as in tests 1 and 2. Further, decomposition of octanoic acid ester of 3,5-dibromo-4-hydroxybenzonitrile was not recognized in each of these Formulation Examples.

Test 4

50 mℓ of the oil-based suspension concentrate obtained in each of Formulation Examples 12 and 13 and Comparative Formulation Example 3 was put in a glass container provided with stopper, and subjected to an accelerated storage stability test for one month under a constant temperature of 50 °C and for one week under a constant temperature of 60 °C, respectively. The rates of decomposition of compound A were determined with HPLC after predetermined period. The results are shown in Table 4.

Table 4

<table>
<thead>
<tr>
<th>Formulation Example</th>
<th>Decomposition rate (%) of Compound A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50 °C</td>
</tr>
<tr>
<td></td>
<td>2 weeks later</td>
</tr>
<tr>
<td>12</td>
<td>3.8</td>
</tr>
<tr>
<td>13</td>
<td>1.6</td>
</tr>
<tr>
<td>Comparative Formulation Example 3</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Table 4 clearly shows that the decomposition of compound A was markedly suppressed in each of Formulation Examples 12 and 13, compared with Comparative Formulation Example 3. Further, decomposition of ethyl 2,4-dichlorophenoxyacetate was not recognized in each of these Formulation Examples and Comparative Formulation Example.

Claims

1. A chemically stabilized herbicidal oil-based suspension, comprising N-[(4,6-dimethoxypyrimidine-2-yl) aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof, urea, a vegetable oil and/or mineral oil, and a surfactant.

2. In a herbicidal oil-based suspension comprising N-[(4,6-dimethoxypyrimidine-2-yl) aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof as an effective component, a chemically stabilized herbicidal oil-based suspension characterized in that urea is added to said suspension.

3. The chemically stabilized herbicidal oil-based suspension according to claim 1 or 2, characterized in that said N-[(4,6-dimethoxypyrimidine-2-yl) aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof is N-[(4,6-dimethoxypyrimidine-2-yl) aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide.

4. The chemically stabilized herbicidal oil-based suspension according to claim 1, comprising 0.5 to 20 parts by weight of N-[(4,6-dimethoxypyrimidine-2-yl) aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof, 0.2 to 10 parts by weight of urea, 19 to 93.8 parts by weight of a vegetable oil and/or mineral oil, and 5 to 25 parts by weight of a surfactant.
5. The chemically stabilized herbicidal oil-based suspension according to claim 1, characterized by further comprising a thickener and/or a solvent.

6. The chemically stabilized herbicidal oil-based suspension according to claim 1, characterized in that said vegetable oil and/or mineral oil is a vegetable oil.

7. The chemically stabilized herbicidal oil-based suspension according to claim 6, characterized in that said vegetable oil is at least one vegetable oil selected from the group consisting of corn oil and rapeseed oil.

8. A chemically stabilized herbicidal oil-based suspension, comprising N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof, at least one additional herbicidal component, urea, a vegetable and/or mineral oil, and a surfactant, said additional herbicidal component being selected from the group consisting of 2,4-dichlorophenoxyacetic acid, an alkyl ester and salt thereof, 3,6-dichloro-2-methoxybenzoic acid and a salt thereof, 2-chloro-4-ethylamino-6-isopropylamino-s-triazine, 3-(1-methylthethyl)-1H-2,1,3-benzothiadiazin-4(3H)-one-2,2-dioxide, 2-chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide, 2-chloro-6'-ethyl-N-(2-methoxy-1-methylethyl)-aceto-o-toluide, 2-chloro-N-isopropylacetanilide, N-(1-ethylpropyl)-2,6-dinitro-3,4-xylidine, 2-(3,5-dichlorophenyl)-2-(2,2,2-trichloroethyl)oxirane, methyl 2-[[4,6-bis-(difluoromethoxy)-pyrimidin-2-yl] aminocarbonyl][aminosulfonyl]benzoate and a salt thereof, 3,5-dibromo-4-hydroxybenzonitrile, a carboxylic acid ester and salt thereof, 5,7-dimethyl-N-(2,6-dichlorophenyl)-1,2,4-triazolo[1,5-a]pyrimidine-2-sulfonamide, 2-chloro-N-(ethoxymethyl)-2'-ethyl-6'-methylacetanilide, O-(6-chloro-3-phenyl-4-pyridaziny) S-octylcarbonothioate, 1-(4,6-dimethoxypyrimidin-2-yl)-3-(3-ethylsulfonyl-2-pyridylsulfonyl)urea and a salt thereof, 2-[2-chloro-4-(methylsulfonyl) benzoyl]-1,3-cyclohexanedione and a salt thereof, methyl 3-chloro-5-(4,6-dimethoxypyrimidin-2-ylcarbamoylsulfamoyl)-1-methylpyrazole-4-carboxylate and a salt thereof, and 3-(3,4-dichlorophenyl)-1-methoxy-1-methyleurea.

9. In a herbicidal oil-based suspension comprising N-[(4,6-dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof and at least one additional herbicidal component selected from the group consisting of 2,4-dichlorophenoxyacetic acid, an alkyl ester and salt thereof, 3,6-dichloro-2-methoxybenzoic acid and a salt thereof, 2-chloro-4-ethylamino-6-isopropylamino-s-triazine, 3-(1-methylthethyl)-1H-2,1,3-benzothiadiazin-4(3H)-one-2,2-dioxide, 2-chloro-2'-diethyl-N-(methoxymethyl)acetanilide, 2-chloro-6'-ethyl-N-(2-methoxy-1-methylethyl)aceto-o-toluide, 2-chloro-N-isopropylacetanilide, N-(1-ethylpropyl)-2,6-dinitro-3,4-xylidine, 2-(3,5-dichlorophenyl)-2-(2,2,2-trichloroethyl)oxirane, methyl 2-[[4,6-bis-(difluoromethoxy)-pyrimidin-2-yl] aminocarbonyl][aminosulfonyl]benzoate and a salt thereof, 3,5-dibromo-4-hydroxybenzonitrile, a carboxylic acid ester and salt thereof, 5,7-dimethyl-N-(2,6-dichlorophenyl)-1,2,4-triazolo[1,5-a]pyrimidine-2-sulfonamide, 2-chloro-N-(ethoxymethyl)-2'-ethyl-6'-methylacetanilide, O-(6-chloro-3-phenyl-4-pyridaziny) S-octylcarbonothioate, 1-(4,6-dimethoxypyrimidin-2-yl)-3-(3-ethylsulfonyl-2-pyridylsulfonyl)urea and a salt thereof, 2-[2-chloro-4-(methylsulfonyl) benzoyl]-1,3-cyclohexanedione and a salt thereof, methyl 3-chloro-5-(4,6-dimethoxypyrimidin-2-ylcarbamoylsulfamoyl)-1-methylpyrazole-4-carboxylate and a salt thereof, and 3-(3,4-dichlorophenyl)-1-methoxy-1-methyleurea which are effective components, a chemically stabilized herbicidal oil-based suspension characterized in that urea is added to said suspension.

10. The chemically stabilized herbicidal oil-based suspension according to claim 8, comprising 0.5 to 20 parts by weight of N-[(4,6-dimethoxypyrimidin-2-yl) aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof, 0.5 to 75 parts by weight of at least one additional herbicidal
11. The chemically stabilized herbicidal oil-based suspension according to claim 8 or 9, characterized in that said additional herbicidal component is selected from the group consisting of 2,4-dichlorophenoxyacetic acid, an alkyl ester and salt thereof, 3,6-dichloro-2-methoxy benzoic acid and a salt thereof, 3,5-dibromo-4-hydroxybenzonitrile, a carboxylic acid ester and salt thereof, O-(6-chloro-3-phenyl-4-pyridazinyl) S-octylcarbathioate, 1-(4,6-dimethoxypyrimidin-2-yl)-3-(3-ethylsulfonyl-2-pyridylsulfonyl) urea and a salt thereof, and 2-[2-chloro-4-(methylsulfonyl) benzoyl]-1,3-cyclohexanedione and a salt thereof.

12. The chemically stabilized herbicidal oil-based suspension according to claim 8 or 9, characterized in that said additional herbicidal component is selected from the group consisting of 2,4-dichlorophenoxyacetic acid, an alkyl ester and salt thereof, and 3,5-dibromo-4-hydroxybenzonitrile, a carboxylic acid ester and salt thereof.

13. An use of urea to suppress decomposition of N-[(4,6-dimethoxypyrimidin-2-yl) aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof contained as an effective component in a chemically stabilized herbicidal oil-based suspension.

14. A method of using urea to suppress decomposition of N-[(4,6-dimethoxypyrimidin-2-yl) aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinesulfonamide and/or a salt thereof contained as an effective component in a chemically stabilized herbicidal oil-based suspension.

Patentansprüche

1. Chemisch stabilisierte herbizide Suspension auf Öl basis, umfassend N-[(4,6-Dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinsulfonamid und/oder eines seiner Salze, Harnstoff, ein pflanzliches Öl und/oder ein mineralisches Öl und ein Tensid.

2. Unter einer herbiziden Suspension auf Öl basis mit N-[(4,6-Dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinsulfonamid und/oder einem seiner Salze als wirksamer Komponente eine chemisch stabilisierte herbizide Suspension auf Öl basis, dadurch gekennzeichnet, daß Harnstoff zu dieser Suspension zugegeben wird.

3. Chemisch stabilisierte herbizide Suspension auf Öl basis gemäß Anspruch 1 oder 2, dadurch gekennzeichnet, daß das erwähnte N-[(4,6-Dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinsulfonamid und/oder eines seiner Salze das N-[(4,6-Dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinsulfonamid ist.

4. Chemisch stabilisierte herbizide Suspension auf Öl basis gemäß Anspruch 1, umfassend 0,5 bis 20 Gew.-Teile N-[(4,6-Dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinsulfonamid und/oder ein Salz davon, 0,2 bis 10 Gew.-Teile Harnstoff, 19 bis 93,8 Gew.-Teile eines pflanzlichen und/oder mineralischen Öls und 5 bis 25 Gew.-Teile eines Tensids.

5. Chemisch stabilisierte herbizide Suspension auf Öl basis gemäß Anspruch 1, dadurch gekennzeichnet, daß sie außerdem einen Verdicker und/oder ein Lösungsmittel umfaßt.

6. Chemisch stabilisierte herbizide Suspension auf Öl basis gemäß Anspruch 1, dadurch gekennzeichnet, daß das pflanzliche und/oder mineralische Öl ein pflanzliches Öl ist.

7. Chemisch stabilisierte herbizide Suspension auf Öl basis gemäß Anspruch 6, dadurch gekennzeichnet, daß das pflanzliche Öl mindestens ein pflanzliches Öl ausgewählt aus der Gruppe bestehend aus Maisöl und Rapsöl ist.

8. Chemisch stabilisierte herbizide Suspension auf Öl basis, umfassend N-[(4,6-Dimethoxypyrimidin-2-yl)aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinsulfonamid und/oder ein Salz davon, mindestens eine weitere herbizide Komponente, Harnstoff, ein pflanzliches oder mineralisches Öl und ein Tensid,
wobei die weitere herbizide Komponente ausgewählt wird aus der Gruppe, bestehend aus
2,4-Dichlorphenoxyessigsäure, einem Alkyester und Salz davon,
3,6-Dichlor-2-methoxybenzoësäure und einem seiner Salze,
2-Chlor-4-ethylamino-6-isopropylamino-s-triazin,
3-(1-Methylethyl)-1H-2,1,3-benzothiadiazin-4(3H)-on-2,2-dioxid,
2-Chlor-2',6'-diethyl-N-(methoxyethyl)acetanilid,
2-Chlor-6'-ethy-N-(2-methoxy-1-methylthyl)aceto-o-toluidid,
2-Chlor-N-isopropylacetanilid,
N-(1-Ethylpropyl)-2,6-dinitro-3,4-xylidin,
2-(3,5-Dichlorphenyl)-2-(2,2,2-trichlorethyl)oxiran,
Methyl-2-[(4,6-bis-(difluormethoxy)pyrimidin-2-yl]aminocarboxyl]aminosulfonyle]benzoat und einem sei-
ner Salze,
3,5-Dibrom-4-hydroxybenzonitril, dessen Carbonsäureestern und Salzen,
5,7-Dimethyl-N-(2,6-dichlorphenyl)-1,2,4-triazolo[1,5-a]pyrimidin-2-sulfonamid,
2-Chlor-N-(ethoxymethyl)-2'-ethyl-6'-methylacetanilid,
O-(6-Chlor-3-phenyl-4-pyridazinyl)-S-octylcarbonothioat,
1-(4,6-Dimethoxypyrimidin-2-yl)-3-(3-ethylsulfonyle-2-pyridylsulfonyle)harnstoff und einem seiner Salze,
2-[2-Chlor-4-(methylsulfonyle)benzoyl]-1,3-cyclohexandion und einem seiner Salze,
Methyl-3-chlor-5-(4,6-dimethoxypyrimidin-2-ylcarbamoyl)sulfamoyl)-1-methylpyrazol-4-carboxylat, und
einem seiner Salze und
3-(3,4-Dichlorpheny)-1-methoxy-1-methylharnstoff.

9. Bei einer herbiziden Suspension auf Ölbasis, welche N-[(4,6-Dimethoxypyrimidin-2-yl)aminocarboxyl]-3-
dimethylaminocarbonyl-2-pyrindinsulfonamid und/oder ein Salz davon und mindestens eine weitere
herbizide Komponente umfaßt, welche ausgewählt wird aus der Gruppe bestehend aus
2,4-Dichlorphenoxyessigsäure, einem Alkyester und Salz davon,
3,6-Dichlor-2-methoxybenzoësäure und einem seiner Salze,
2-Chlor-4-ethylamino-6-isopropylamino-s-triazin,
3-(1-Methylethyl)-1H-2,1,3-benzothiadiazin-4(3H)-on-2,2-dioxid,
2-Chlor-2',6'-diethyl-N-(methoxyethyl)acetanilid,
Methyl-3-chlor-5-(4,6-dimethoxypyrimidin-2-ylcarbamoyl)sulfamoyl)-1-methylpyrazol-4-carboxylat, und
einem seiner Salze und
3-(3,4-Dichlorpheny)-1-methoxy-1-methylharnstoff.

10. Chemisch stabilisierte herbizide Suspension auf Ölbasis gemäß Anspruch 8, umfassend 0,5 bis 20
Gew.-Teile N-[(4,6-Dimethoxypyrimidin-2-yl)aminocarboxyl]-3-dimethylaminocarbonyl-2-pyrindinsulfona-
mid und/oder ein Salz davon, 0,5 bis 75 Gew.-Teile mindestens einer weiteren herbiziden Komponente,
0,2 bis 10 Gew.-Teile Harnstoff, 19 bis 93,8 Gew.-Teile eines pflanzlichen und/oder mineralischen Öls
und 5 bis 25 Gew.-Teile eines Tensids.

11. Chemisch stabilisierte Suspension auf Ölbasis gemäß Anspruch 8 oder 9, dadurch gekenn-
zzeichnet, daß die weitere Herbizid-Komponente ausgewählt wird aus der Gruppe bestehend aus 2,4-
Dichlorphenoxyessigsäure, einem Alkyester und Salz davon, 3,6-Dichlor-2-methoxybenzoësäure und
einem Salz davon, 3,5-Dibrom-4-hydroxybenzonitril, einem Carbonsäureester und einem Salz davon, O-
Chemisch stabilisierte herbizide Suspension auf Ölbasis gemäß Anspruch 8 oder 9, dadurch gekennzeichnet, daß die weitere Herbizid-Komponente ausgewählt wird aus der Gruppe bestehend aus 2,4-Dichlorphenoxyessigsäure, einem Alkyester und Salz davon und 3,5-Dibrom-4-hydroxybenzonitril, einem Carbonsäureester und einem Salz davon.

Verwendung von Harstoff zur Unterdrückung der Zersetzung von N-[(4,6-Dimethoxy pyrimidin-2-yl)-aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinsulfonamid und/oder einem Salz davon, das als wirksame Komponente in einer chemisch stabilisierten herbiziden Suspension auf Ölbasis enthalten ist.

Verfahren zur Verwendung von Harstoff zur Unterdrückung der Zersetzung von N-[(4,6-Dimethoxy pyrimidin-2-yl)-aminocarbonyl]-3-dimethylaminocarbonyl-2-pyridinsulfonamid und/oder einem Salz davon, das als wirksame Komponente in einer chemisch stabilisierten herbiziden Suspension auf Ölbasis enthalten ist.

Revendications

1. Suspension herbicide stabilisée chimiquement, à base d'huile, comprenant du N-[(4,6-diméthoxy pyrimidin-2-yl)-aminocarbonyl]-3-diméthylaminocarbonyl-2-pyridinesulfonamide et/ou un de ses sels, de l'urée, une huile végétale et/ou une huile minérale, ainsi qu’un tensioactif.

2. Dans une suspension herbicide à base d'huile comprenant du N-[(4,6-diméthoxy pyrimidin-2-yl)-aminocarbonyl]-3-diméthylaminocarbonyl-2-pyridinesulfonamide et/ou un de ses sels en tant que composant actif, suspension herbicide stabilisée chimiquement, à base d'huile, caractérisée en ce qu'on ajoute de l'urée dans ladite suspension.

3. Suspension herbicide stabilisée chimiquement, à base d'huile, selon la revendication 1 ou la revendication 2, caractérisée en ce que ledit N-[(4,6-diméthoxy pyrimidin-2-yl)-aminocarbonyl]-3-diméthylaminocarbonyl-2-pyridinesulfonamide et/ou un de ses sels est le N-[(4,6-diméthoxy pyrimidin-2-yl)-aminocarbonyl]-3-diméthylaminocarbonyl-2-pyridinesulfonamide.

4. Suspension herbicide stabilisé chimiquement, à base d'huile, selon la revendication 1, comprenant entre 0,5 et 20 parties en masse de N-[(4,6-diméthoxy pyrimidin-2-yl)-aminocarbonyl]-3-diméthylaminocarbonyl-2-pyridinesulfonamide et/ou d'un de ses sels, entre 0,2 et 10 parties en masse d'urée, entre 19 et 93,8 parties en masse d'une huile végétale et/ou d'une huile minérale et entre 5 et 25 parties en masse d'un tensioactif.

5. Suspension herbicide stabilisée chimiquement, à base d'huile, selon la revendication 1, caractérisée en ce qu'elle contient de plus un épaississant et/ou un solvant.

6. Suspension herbicide stabilisée chimiquement, à base d'huile, selon la revendication 1, caractérisée en ce que ladite huile végétale et/ou ladite huile minérale est une huile végétale.

7. Suspension herbicide stabilisée chimiquement, à base d'huile, selon la revendication 6, caractérisée en ce que ladite huile végétale est au moins une huile végétale choisie dans le groupe constitué par l'huile de maïs et l'huile de colza.

8. Suspension herbicide stabilisée chimiquement, à base d'huile, comprenant du N-[(4,6-diméthoxy pyrimidin-2-yl)-aminocarbonyl]-3-diméthylaminocarbonyl-2-pyridinesulfonamide et/ou un de ses sels, au moins un composant herbicide supplémentaire, de l'urée, une huile végétale et/ou minérale, ainsi qu'un tensioactif, ledit composant herbicide supplémentaire étant choisi dans le groupe constitué par l'acide 2,4-dichlorophénylacétique, un de ses alkylesters et un de ses sels, l'acide 3,6-dichloro-2-méthoxybenzoïque et un de ses sels, la 2-chloro-4-éthylamino-6-isopropylamino-s-triazine, le 3-(1-méthyléthyl)-1H-2,1,3-benzothiadiazin-4(3H)-ono-2,2-dioxyde,
le 2-chloro-2',6'-diéthyl-N-(méthoxyméthyl)acétanilide,
le 2-chloro-6'-éthyl-N-(2-méthoxy-1-méthyléthyl)acéto-o-toluidide,
le 2-chloro-N-isopropylacétanilide,
la N-(1-éthylpropyl)-2,6-dinitro-3,4-xylidine,
le 2-[2-(3,5-dichlorophényl)-2-(2,2,2-trichloroéthyl)oxiran]
le 2-[[4,6-bis-(difluorométhoxy)pyrimidin-2-yl]aminocarboxylamino[aminosulfonyle] benzoate de méthyle et un de ses sels,
le 3,5-dibromo-4-hydroxybenzonitrile, un de ses esters d'acides carboxyliques et un de ses sels,
le 5,7-(diméthyl-N-(2,6-dichlorophényl)-1,2,4-triazolo[1,5-a]pyrimidine-2-sulfonamide,
le 2-chloro-N-(éthoxyméthyl)-2'-éthyl-6'-méthylacétanilide,
le S-octylcarboxothioate de O-(6-chloro-3-phényl-4-pyridazinyyle),
la 1-(4,6-diméthoxypyrimidin-2-yl)-3-(3-éthylsulfonyle-2-pyridylsulfonyle)urée et un de ses sels,
la 2-[[2-chloro-4-(méthylsulfonyle)benzoyl]-1,3-cyclohexancénone et un de ses sels,
le 3-chloro-5-(4,6-diméthoxypyrimidin-2-ylcarbamoylsulfonyle)-1-méthylpyrazole-4-carboxylate de méthyle et un de ses sels,
as ainsi que la 3-(3,4-dichlorophényl)-1-méthoxy-1-méthylurée.

9. Dans une suspension herbicide à base d'huile comprenant du N-[[4,6-diméthoxypyrimidin-2-yl]-aminocarboxylamino]-3-diméthylaminocarboxylamino-2-pyridinesulfonamide et/ou un de ses sels, ainsi qu'au moins un composant herbicide supplémentaire choisi dans le groupe constitué par l'acide 2,4-dichlorophénoloxycétique, un de ses alkyesters et un de ses sels,
l'acide 3,6-dichloro-2-méthoxybenzoïque et un de ses sels,
la 2-chloro-4-éthylamino-6-isopropylamino-s-triazine,
le 3-(1-méthyléthyl)-1H-2,1,3-benzotriazin-4(3H)-one-2,2-dioxyce,
le 2-chloro-2',6'-ditéthyl-N-(méthoxyméthyl)acétanilide,
le 2-chloro-6'-éthyl-N-(2-méthoxy-1-méthyléthyl)acéto-o-toluidide,
le 2-chloro-N-isopropylacétanilide,
la N-(1-éthylpropyl)-2,6-dinitro-3,4-xylidine,
le 2-(3,5-dichlorophényl)-2-(2,2,2-trichloroéthyl)oxiran,
le 2-[[4,6-bis-(difluorométhoxy)pyrimidin-2-yl]aminocarboxylamino[aminosulfonyle] benzoate de méthyle et un de ses sels,
le 3,5-dibromo-4-hydroxybenzonitrile, un de ses esters d'acides carboxyliques et un de ses sels,
le 5,7-(diméthyl-N-(2,6-dichlorophényl)-1,2,4-triazolo[1,5-a]pyrimidine-2-sulfonamide,
le 2-chloro-N-(éthoxyméthyl)-2'-éthyl-6'-méthylacétanilide,
le S-octylcarboxothioate de O-(6-chloro-3-phényl-4-pyridazinyyle),
la 1-(4,6-diméthoxypyrimidin-2-yl)-3-(3-éthylsulfonyle-2-pyridylsulfonyle)urée et un de ses sels,
la 2-[2-chloro-4-(méthylsulfonyle)benzoyl]-1,3-cyclohexancénone et un de ses sels,
le 3-chloro-5-(4,6-diméthoxypyrimidin-2-ylcarbamoylsulfonyle)-1-méthylpyrazole-4-carboxylate de méthyle et un de ses sels,
as ainsi que la 3-(3,4-dichlorophényl)-1-méthoxy-1-méthylurée,
qui sont des composants actifs, suspension herbicide stabilisée chimiquement, à base d'huile, caractérisée en ce qu'on ajoute de l'urée dans ladite suspension.

10. Suspension herbicide stabilisée chimiquement, à base d'huile, selon la revendication 8, comprenant entre 0,5 et 20 parties en masse de N-[[4,6-diméthoxypyrimidin-2-yl]aminocarboxylamino]-3-diméthylaminocarbonyl-2-pyridinesulfonamide et/ou d'un de ses sels, entre 0,5 à 75 parties en masse d'au moins un composant herbicide supplémentaire, entre 0,2 et 10 parties en masse d'urée, entre 19 et 93,8 parties en masse d'une huile végétale et/ou d'une huile minérale, ainsi qu'entre 5 et 25 parties en masse d'un tensioactif.

11. Suspension herbicide stabilisée chimiquement, à base d'huile, selon la revendication 8 ou la revendication 9, caractérisée en ce qu'on choisit ledit composant herbicide supplémentaire dans le groupe constitué par l'acide 2,4-dichlorophénoloxycétique, un de ses alkyesters et un de ses sels, l'acide 3,6-dichloro-2-méthoxybenzoïque et un de ses sels, le 3,5-dibromo-4-hydroxybenzonitrile, un de ses esters d'acides carboxyliques et de ses sels, le S-octylcarboxothioate de O-(6-chloro-3-phényl-4-pyridazinyyle),
la 1-(4,6-diméthoxypyrimidin-2-yl)-3-(3-éthylsulfonyle-2-pyridylsulfonyle)urée et un de ses sels, ainsi que la 2-[2-chloro-4-(méthylsulfonyle)benzoyl]-1,3-cyclohexancénone et un de ses sels.
12. Suspension herbicide stabilisée chimiquement, à base d’huile, selon la revendication 8 ou la revendication 9, caractérisée en ce qu’on choisit ledit composant herbicide supplémentaire dans le groupe constitué par l’acide 2,4-dichlorophénoxyacétique, un de ses alkylesters et un de ses sels, ainsi que le 3,5-dibromo-4-hydroxybenzonitrile, un de ses esters d’acides carboxyliques et un de ses sels.

13. Utilisation durée pour supprimer la décomposition du N-[(4,6-diméthoxypyrimidin-2-yl)aminocarbonyl]-3-diméthylaminocarbonyl-2-pyrindinesulfonamide et/ou d’un de ses sels contenu(s) en tant que composant actif dans une suspension herbicide stabilisée chimiquement, à base d’huile.

14. Procédé d’utilisation de l’urée pour supprimer la décomposition du N-[(4,6-diméthoxypyrimidin-2-yl)aminocarbonyl]-3-diméthylaminocarbonyl-2-pyrindinesulfonamide et/ou d’un de ses sels contenu(s) en tant que composant actif dans une suspension herbicide stabilisée chimiquement, à base d’huile.