General Administrative Regulation under the Federal Water Act on the Classification of Substances Hazardous to Water in Water Hazard Classes

(*Verwaltungsvorschrift wassergefährdende Stoffe* - VwVwS)
of 17 May 1999

This translation has not been officially approved and is for information purposes only.

Pursuant to Article 19g (5) of the Federal Water Act (WHG) in the version promulgated on 12 November 1996 (Federal Law Gazette I p. 1695), the following general administrative regulation is issued:

1 Scope of application

1.1 This Administrative Regulation specifies, pursuant to Article 19g (5) second sentence WHG, the substances that are able to persistently impair the physical, chemical or biological characteristics of water (substances hazardous to water), and it classifies them in keeping with their hazard potential, and on the basis of their physical, chemical and biological substance properties, in water hazard classes (WGK).

Substances within the meaning of this Administrative Regulation also include substance groups and mixtures.

Substance groups are groups of substances with common functional, active or structural characteristics.

Mixtures are preparations or combinations of two or more substances, and solutions in water.

1.2 The following are defined as non-hazardous to water within the meaning of Article 19g (5) WHG:

a) Substances listed in Annex 1,

b) Substances that fulfil the prerequisites set forth in Annex 3 (5) and are not listed in Annex 2,

c) Mixtures that fulfil the prerequisites set forth in Number 2.2.2 and are not listed in Annex 2,

d) Foods within the meaning of the Act on Foods and Consumer Goods (*Lebensmittel- und Bedarfsgegenständegesetz*), where not listed in Annex 2,

e) Feeds within the meaning of the Feedstuffs Act (*Futtermittelgesetz*), where not listed in Annex 2.

2 Definition and classification of substances hazardous to water

2.1 Substances

2.1.1 All substances listed in Annex 2 are hazardous to water. In addition, all those substances are hazardous to water that, on the basis of their physical, chemical or biological characteristics, do not fulfil the prerequisites set forth in Annex 3 (5) for substances non-hazardous to water.

2.1.2 The substances hazardous to water are classified into the following water hazard classes, in keeping with their hazard potential:

WGK 3: severe hazard to waters,
WGK 2: hazard to waters,
WGK 1: low hazard to waters.

2.1.3 If a substance has not been classified in Annex 2 into one of the water hazard classes, it shall be classified with the characteristics determined according with the provisions of Annex 3.

2.1.4 Substances that have been combined into substance groups are specified and classified in Annex 2.

2.2 Mixtures

2.2.1 Mixtures are classified, in keeping with their hazard potential, in water hazard classes pursuant to Number 2.1.2. The water hazard class for a given mixture

a) is determined, pursuant to Annex 4 (3), on the basis of the mixture's components, if the mixture is not classified in Annex 2, or,

b) pursuant to Annex 4 (4), is determined through testing of the mixture itself, if the mixture is not classified in Annex 2.

2.2.2 Mixtures are non-hazardous to water if they fulfil the following prerequisites:

a) Their content of WGK 1 components is less than 3% by mass.

b) Their content of WGK 2 and 3 componentsis less than 0.2% by mass.

c) WGK 3 components, carcinogenic components or components of unknown identity have not been added.

d) They do not contain any dispergators.

Number 2.1 shall apply for determination of the water hazard classes of the components.

3 Documentation and publication

Substances shall be considered as specified and classified in water hazard classes, pursuant to Number 2.1 in conjunction with Annex 3, if they have been published by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety or an agency it has authorised.

If different classifications, not based on use of default values pursuant to Annex 3 (2), are reported for the same substance to the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety or to its authorised agency, the substance shall be officially classified by being added to Annex 2, if it is not possible to directly reconcile the relevant classifications. If the necessary expert review cannot be completed within the short term, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety or an agency it has authorised shall publish an initial listing with the substance in the higher water hazard class only.

The following information must be documented prior to publication:

- chemically unique substance name,
- CAS registration number and EC number if applicable,
- water hazard class,
- classified R-phrases,
- assigned default values for non-tested characteristics,
- point total pursuant to Annex 3 (4.1),
- name and address of the classifier, date.

The following information must also be included for substances non-hazardous to water pursuant to Number 1.2 (b):

- physical state,
- solubility in water,
- acute toxicity for a rodent species and toxicity for two aquatic organisms,
- biodegradability (for organic liquids).

3a Obligation to undertake self-classification

As a result of the direct obligations, as set forth in Articles 19g ff. WHG, for operators of facilities for handling substances hazardous to water, such operators shall also be charged with determining and documenting the water-hazard potential of relevant substances pursuant to Number 2.1 in conjunction with Annex 3, and of mixtures pursuant to Annex 4, where this Administrative Regulation does not already contain binding classification, in its Annexes 1 and 2, or the relevant substance manufacturer or distributor has not already himself carried out such classification and documentation.

4 Entry into force, expiration

This Administrative Regulation shall enter into force on the first day of the calendar month that follows its promulgation.
At the same time, the General Administrative Regulation under the Federal Water Act on the Classification of Substances Hazardous to Water in Water Hazard Classes of 18 April 1996 (Joint Ministerial Gazette (GMBI.) p. 327) shall expire.

Approved by the *Bundesrat*.

Bonn, 17 May 1999

The Federal Minister for the Environment, Nature Conservation and Nuclear Safety

Jürgen Trittin

Annex 1
Substances non-hazardous to water pursuant to Number 1.2a

Substance name	Index number
Acetylene	1182
Aluminium oxide	1346
Argon	1348
Barium carbonate	781
Barium sulphate	308
Bitumen	326
Bromochlorodifluoromethane	1360
n-Butane	561
n-But-1-ene	792
Calcium carbonate	317
Calcium flouride	804
Canthaxanthin	1680
Carbon	801
Carbonic acid	354
Carbon dioxide	256
Chromium(lll) oxide (Dichromium trioxide)	806
Coke (Petroleum coke)	433
Copper phthalocyanine	1339
Cyclododecane	777
Diethylaminoethylcellulose	1487
1,12-Dodecanedioic acid	1197
Ethane	91
Ethene (Ethylene)	742
Fatty acid esters with fatty alcohols, saturated and unsaturated, with even-numbered, linear C-chain and number of C-atoms of alcohol and fatty acid chain ≥12, with terminal carboxyl and OH group[11]	660
Fatty acids, C16-18, 2-hexyldecyl esters	1915
Fatty acids, saturated, linear, with even-numbered C-chain, number of C-atoms ≥ 14, with terminal carboxyl group[11]	661
Fatty acids C16/18-triethylene glycol diesters	1419
Fatty acids, C16-18 and C18 unsaturated, isobutyl esters	1435
Fatty alcohols, saturated, with even-numbered C-chain, number of C-atoms ≥ 14, with terminal OH group[11]	656
Fatty alcohols, unsaturated, with even-numbered, linear C-chain, number of C-atoms ≥ 16 and ≤ 18, with terminal OH group[11]	658
Hydrogen	741
Iron	748
Iron(lll) hydroxide oxide	752
Iron(ll) oxide	750
Iron(ll, lll) oxide	751
Iron(lll) oxide (Diiron trioxide)	800
Isobutane	562
Isopropyl myristate	1608
Isopropyl palmitate	1669

Isostearic acid	1423
Metals, if solid, not colloidally dissolved and chemically inert to water or atmospheric oxygen	1443
Methane	1343
2-Methylprop-1-ene	1193
Natural products like minerals, sand, wood, coal, pulp, glass and ceramic materials, if solid, not dispersed, insoluble in water and indifferent	765
Nitrogen	1351
Octadecane-1,12-diol	1768
Oxygen	743
Paraffins (waxes)	268
Pentaerythritol fatty acid ester (C6-C10)	770
Plastics, e.g. granulates, formed parts, fibres, foils, polymer resins, if solid, non-dispersed, insoluble in water and indifferent	766
Propane	560
Propene	816
Silicic acid, magnesium salt	1315
Silicon dioxide	849
Silicon dioxide, surface-treated with hexamethyldisilazane, hydrophobic	1429
Soyabean sterol, refined	1899
Soot, technically, if classification R 45 is not required	1742
Strontium carbonate	803
Sulphur, lumpy	842
Sulphur hexafluoride	846
Tallow fatty acid isobutyl ester	1898
Titanium dioxide	1345
Triglycerides (epoxidized, with even-numbered, linear fatty acid C-chain, number of C-atoms ≥ 12)[11]	762
Triglycerides (technically untreated or hydogenated; fatty acid C-chain saturated and unsaturated, even-numbered and linear, number of C-atoms ≥ 8)[11]	760
Vaselines (hydogenated)	1935
Zinc	1349

Footnotes:

[11] This classification refers to the substance without additives. Where additives are added, the substance may have to be classified in higher water hazard classes, in accordance with the provisions set forth in Annex 4 (classification of mixtures into water hazard classes).

Annex 2
Substances hazardous to water according to Number 2.1.1

(Some substances of this list are originally referred to by their German common names where a proper translation may not always be possible. Substances can also be found via CAS-number or parts of substance name at https://webrigoletto.uba.de/rigoletto/public/welcome.do).

Substance name	Index Number	WGK
Acemetacine	1082	3
Acephate	677	2
Acetaldehyde	1	1
Acetamide	2	1
1-Acetamido-7-hydroxynaphthalene	1823	1
Acetanhydride	3	1
Acet-p-anisidine	1502	1
Acetic acid (> 25%)	93	1
Acetic acid n-amyl ester	17	1
Acetic acid n-butyl ester	42	1
Acetic acid tert.-butyl ester	43	1
Acetic acid cyclohexyl ester	66	1
Acetic acid-2-ethoxyethyl ester	106	1
Acetic acid ethyl ester	95	1
Acetic acid-2-ethylhexyl ester	1319	2
Acetic acid isobornyl ester	1273	1
Acetic acid isobutyl ester	133	1
Acetic acid isopentyl ester	1653	1
Acetic acid isopropenyl ester	1292	1
Acetic acid isopropyl ester	136	1
Acetic acid methyl ester	146	1
Acetic acid phenyl ester	171	2
Acetic acid n-propyl ester	178	1
Acetic acid vinyl ester	203	2
Acetoacetic acid ethyl ester	4	1
Acetoacetic acid methyl ester	5	1
Acetoacetanilide	1125	1
Acetone[14]	6	1
Acetone cyanohydrin	7	3
Acetonitrile	8	2
Acetophenone	735	1
N-(2-Acetoxyethyl)-1,2,3,4-tetrahydro-2,2,4-trimethylquinoline	1891	2
Acetylacetone peroxide[26]	1491	1
Acetyl-m-aminobenzoic acid	1693	1
2-Acetylamino-4-methylphenol	1816	1
Acetyl chloride	784	1
α-Acetyldigitoxin	976	3
β-Acetyldigoxin	1015	3
α-Acetyldigoxin	1016	3
Acetyldigoxin-12	1060	3
Acetylgitoxin-16	1030	3

Acetyl-β-methyldigoxin-12	1081	3
N-Acetyl-N-methyl-p-phenylenediamine	1637	1
4-Acetylmorpholine	1747	1
Acetylstrophanthidin-3	1024	3
Acetylthiocholine iodide	987	3
Acidic tar	333	3
Acovenoside-A	969	3
Acrolein	9	3
Acrolein cyanohydrin-O-acetate	850	3
Acrylamide	716	3
Acryl nitrile	10	3
Acrylic acid	11	1
Acrylic acid n-butyl ester	12	1
Acrylic acid ethyl ester	208	2
Acrylic acid-2-ethylhexyl ester	13	1
Acrylic acid methyl ester	147	2
Actinomycin C-1	863	3
Adenosine-5'-O-(thiodiphosphate), trilithium salt	1093	3
Adipic acid[14]	474	1
Adipic acid di-2-ethylhexyl ester	626	1
Adipic acid dinitrile	209	1
Adipic acid hexamethylene diamine salt	1342	1
Adonitoxin	1054	3
Aldrin	464	3
n-Alkanesulfonyl chloride (C10-21)	1250	1
sec-Alkane (C13-C17) sulfonate	663	2
Alkyl (C10-21) sulfonic acid phenyl ester	819	1
1-Alkene (C14-16) dibutyl maleate (or fumarate) copolymer	1916	1
Alkyl ether sulfates C12-C18 and 2-3 mol EO, sodium salts	665	2
Alcohol ethoxylates	670	2
Alkyl-(C16-18)asparaginic acid disodium salt	1910	1
Alkyl-(C10/13)-benzene	90	1
Alkylbenzene sulfonates (C10-C14), linear	449	2
Alkyl-(C15 - C30) benzene sulfonates, branched, calcium and magnesium salts	1945	2
Alkyl(C10-16)-benzene sulfonic acid, linear	1334	2
Alkyl(C8-C18)-benzyl dimethyl ammonium chloride and bromide	599	3
Alkyl(C10-18) chloride	1092	3
Alkylolamides	673	2
N-Alkyl(C12/18)-oxi-2-hydroxypropyl-dimethyl-cyclohexyl ammonium chloride	1091	3
Alkyl polyglycosides (with 1-2 glucose units; alkyl residue: C8-C16)	1363	1
Alkyl(C12-C16)-pyridinium chloride and bisulfate	601	3
Alkyl (C > 13)-salicylates, branched, calcium and magnesium salts[35]	1946	2
Alkyl(C12-C16)-trimethyl ammonium chloride and bromide	600	3
Allyl alcohol	444	2
Allylamine	14	2
Allylammonium chloride	525	2
Allyl chloride	15	2
Allyl 2,3-epoxypropyl ether	1378	3
N-Allylthiourea	16	2

Aluminium chloride[8]	507	1
Aluminium diethyl monochloride	1206	1
Ethyl aluminium sesquichloride	1207	1
Aluminium hydroxychloride[8]	508	1
Aluminium nitrate[8]	509	1
Aluminium phosphide	551	2
Aluminium sulphate[8]	486	1
α-Amanitin	1064	3
p-Aminoacetanilide	1649	1
m-Aminoacetanilide, hydrochloride	1711	2
3-Aminoacetanilide-4-sulfonic acid	1532	2
4-Aminoacetanilide-3-sulfonic acid	1560	1
2-Amino-5-aminomethyl-naphthalene-1-sulfonic acid	1873	2
1-Amino anthraquinone	1215	1
4-Amino azobenzene-3,4'-disulfonic acid, disodium salt	1406	1
4-Amino azobenzene-4'-sulfonic acid, sodium salt	1761	1
2-Amino benzamide	1534	1
7-[(4-Amino)benzamido]-4-hydroxynaphthalene-2-sulfonic acid	1638	1
4-Aminobenzoic acid ethyl ester	1119	2
2- Aminobenzoic acid methyl ester	1661	1
2-Amino-5-benzoylamino hydroquinone diethyl ether	1641	2
3-(4'-Aminobenzoylamino)-5-sulfosalicylic acid	1806	1
Amino benzyl dimethylamine (isomeric mixture)	1820	2
1-Amino-2-bromo-4-hydroxyanthraquinone	1625	1
2-Aminobutane	1171	2
3-Amino-2-carbomethoxy-4-methylthiophene	1436	2
2'-Amino-3-carboxy-4-hydroxy-4'-sulfodiphenyl sulfone	1822	2
3-Amino-5-chloro-4-hydroxybenzene sulfonic acid	1804	2
2-Amino-4-chlorophenol hydrochloride	1802	2
2-Amino-4-chlorophenol-6-sulfonic acid	1526	2
2-Amino-4,6-dichlorophenol hydrochloride	1805	2
2-Amino-5-diethylaminopentane	1664	1
2-Aminoethanol	94	1
2-2'-Aminoethoxyethanol	1731	1
Aminoethyl ethanolamine	1617	1
Aminoethyl piperazine	1662	2
2-Amino-1-ethoxybenzene	1552	2
Aminoguanidine bicarbonate	1440	2
3-Amino-4-hydroxybenzene sulfonamide, hydrochloride	1886	2
4-Amino-5-hydroxy-2,7-naphthalene disulfonic acid, monosodium salt	1242	1
7-Amino-4-hydroxy-2-naphthalene sulfonic acid	1219	1
6-Amino-4-hydroxy-2-naphthalene sulfonic acid	1221	1
D,L-4-(2-Amino-1-hydroxy-propyl)-1,2-benzenediol	1397	2
3-Amino-2-hydroxy-5-sulfobenzoic acid	1807	1
Aminoimino methane sulfinic acid	1751	1
3-Amino-4-methoxy acetanilide	1818	1
2-Amino-4-methoxy-6-methyl-s-triazine	1404	1
2-Amino-4-methylphenol	1557	2
2-Aminonaphthalene-6-sulfonic acid	1545	1
8-Aminonaphthalene-2-sulfonic acid	1633	2
5-Aminonaphthalene-2-sulfonic acid	1639	1

6-Aminonaphthalene-2-sulfonic acid, sodium salt	1882	2
8-Amino-naphthalene-1,3,6-trisulfonic acid, disodium salt	1800	1
1-Amino-7-naphthol	1630	2
4-Amino-5-naphthol-1,3-disulfonic acid, monosodium salt	1875	2
3-Amino-5-naphthol-2,7-disulfonic acid, monosodium salt	1877	1
2-Amino-5-nitrobenzoic acid	1706	2
2-Amino-6-nitrobenzothiazole	1809	2
2-Amino-5-nitrophenol	1648	2
2-Amino-4-nitrophenol-6-sulfonic acid	1559	2
6-Aminopenicillanic acid	1324	2
2-Aminophenol	1554	2
N-(4-Aminophenyl)-carbamic acid methyl ester	1415	2
m-Aminophenyl urea, hydrochloride	1884	2
3-Aminophenyl hydroxyethyl sulfone	1414	2
3-Aminopropan-1-ol	1672	1
4-(3-Aminopropyl)-morpholine	1651	2
3-Aminopropyl triethoxysilane	1730	1
Aminopterine	871	3
5-Aminosalicylic acid	1536	2
Aminostilbene triazol	1890	2
2-(4-Amino-3-sulfophenyl)-6-methylbenzothiazol-7-sulfonic acid	1803	2
4-Aminotoluene-2-sulfethylanilide	1870	2
2-Amino-1-trifluoromethylbenzene	1523	1
3-Amino-4,N',N'-trimethylbenzenesulfonamide	1811	2
Aminotrimethylene phosphonic acid	1821	1
Amitrole	1210	2
Ammonia	211	2
Ammonium arsenate	289	3
Ammonium chloride	213	1
Ammonium dichromate	290	3
Ammonium iron(II) sulphate	513	1
Ammonium fluoride	291	1
Ammonium hexafluorosilicate	544	2
Ammonium hydrogen fluoride	292	1
Ammonium hydrogen sulphate	293	1
Ammonium molybdate	637	1
Ammonium monochromate	1033	3
Ammonium nitrate	212	1
Ammonium perchlorate	294	1
Ammonium peroxodisulphate	836	1
Ammonium picrate	295	2
Ammonium sulphate	296	1
Ammonium sulphide	297	2
Ammonium thiocyanate	1442	1
Ammonium thiosulphate	193	1
Amphotericin B	981	3
n-Amyl alcohol	18	1
tert.Amyl alcohol	19	1
tert.-Amyl perbenzoate 1	1472	2
tert.-Amylperoxy-2-ethylhexanoate	1467	2
tert.-Amylperoxy neodecanoate[21]	1465	2

tert.-Amylperoxy pivalate[21]	1466	2
Anilazine	911	3
Aniline	20	2
Aniline-2,4-disulfonic acid, monosodium salt	1895	2
Aniline hydrochloride	298	2
7-Anilino-4-hydroxynaphthalene-2-sulfonic acid	1384	2
Anisaldehyde dimethyl acetal	1167	1
2-Anisidine	1118	3
4-Anisidine	1128	2
Anisole	21	2
Anisotropine methyl bromide	900	3
p-Anisic acid	1402	1
Anthraquinone	1217	1
Anthraquinone-1-sulfonic acid, potassium salt	1860	1
Antimony(III) oxide	979	2
Antimycin A	982	3
Aqua regia	353	2
Arsenic(III) oxide	299	3
Arsenic(V) oxide	300	3
Arsenic acid	301	3
Arsenic hydrogen	214	3
L(+)-Ascorbic acid	737	1
Atrazine	24	2
Atropine	867	3
Atropine methonitrate	869	3
Atropine methyl bromide	998	3
Atropine sulphate	876	3
Azinphos-ethyl	627	3
Azinphos-methyl	628	3
1,1'-Azobiscarbamide	1354	1
Azocyclotin	534	3
Barium chlorate	302	2
Barium chloride	25	1
Barium cyanide	303	3
Barium nitrate	304	1
Barium oxide	305	1
Barium perchlorate	306	1
Barium peroxide	307	1
Barium selenate	1830	2
Barium selenite	1841	2
Bentazone	711	2
Benzal chloride	1225	3
Benzaldehyde	26	2
4-Benzamido-5-hydroxynaphthalene-2,7-disulfonic acid, disodium salt	1793	2
Benzene	29	3
Benzene sulfonyl chloride	215	1
Benzidine	905	3
Benzil dimethyl ketal	1444	2
Benzoic acid	30	1
Benzoic acid methyl ester	1547	1
Benzoguanamine	785	2

Benzonitrile	31	2
Benzothiazole	1376	2
Benzothiazyl-2-dicyclohexylsulfenamide	1321	2
Benzotrichloride	32	3
Benzoxonium chloride	1058	3
Benzoyl cyanide	1703	3
Benzyl alcohol	216	1
4-Benzyl biphenyl	848	1
Benzyl chloride	33	3
2-Benzyl-4-chlorophenol	1643	2
Benzyl diphenyl methane (with 0-3 methyl groups)	814	2
Benzyl isobutyrate	1574	1
Beryllium nitrate	34	2
Bezafibrate	1424	1
Bis-(2-Aminobenzene sulfonic acid)diphenyl propane ester	1893	2
Bis-(2-chloroethyl) ether	718	2
1,2-Bis(chloromethyl) benzene	1701	2
Bis(chloromethyl) ether	956	3
(Bis(N-Cyclohexyl diazeniumdioxy)) copper	759	3
Bis(2,4-dichlorobenzoyl) peroxide	1110	2
4,4'-Bis-(diethylamino) benzophenone	1539	2
2,2-Bis-(p-hydroxyethoxyphenyl) propane	1729	1
Bis-2-hydroxyethyl-cocoalkyl benzylammonium chloride	1086	3
Bis(2-methoxyethyl) ether	1258	1
Bisphenol-A-propoxylate	1624	1
N,N'-Bis(2,2,6,6-tetramethyl-4-piperidinyl)-1,6-hexanediamine	1427	2
Bis(tributyl tin) tetrachlorophthalate	565	3
Bis(3-triethoxysilylpropyl) tetrasulfane	1863	1
Boric acid	315	1
Brenzcatechine	536	2
Bromelain	1036	3
Bromoacetic acid	728	2
Bromoaminic acid, sodium salt	1328	1
1-Bromo-3-chloropropane	920	3
Bromocyan	947	3
1-Bromo-3,5-difluorobenzene	1480	2
2-Bromoethanol	955	3
1-(2-Bromoethoxy)-2-methoxy benzene	1791	3
Bromo-N-ethyl-naphtholactam-1,8	1904	2
1-Bromo-2-fluoroethane	972	3
Bromomethane	264	3
Bromophos	617	3
Bromophos-ethyl	618	3
Bromotrifluoromethane[14]	782	1
Brucin	941	3
α-Bungarotoxin	1041	3
β-Bungarotoxin	1043	3
Busulfan	877	3
1,3-Butadiene	218	2
Butane-1,4-diol[14]	1338	1
Butanediolformal	1678	1

Butane-1,2,4-triol	1408	1
n-Butanol	39	1
sec.Butanol	40	1
tert.Butanol	219	1
Butene-1,4-diol	1148	1
2-(2-Butoxyethoxy)ethyl acetate	1262	1
(2-Butoxyethyl)acetate	592	1
Butoxypolyethylene/propylene glycol (medium molar mass > 500)[11]	563	1
n-Butylamine	44	1
tert.-Butylamine	1510	1
n-Butylammonium chloride	527	1
4-tert.Butylbenzaldehyde	1732	2
tert.-Butylbenzene	45	1
tert.-Butylcumylperoxide	1455	2
4-tert.Butylcyclohexanol	1186	1
Butyldiethanolamine	1572	1
tert.-Butyl-2-ethylperoxyhexanoate	1104	2
tert.-Butyl hydroperoxide	1106	3
1-N-Butyl-4-hydroxy-2-quinolone	1819	2
n-Butylmalonic acid diethyl ester	1660	1
2-tert.-Butyl-5-methylphenol	1530	2
Butyl monoethanolamine	1618	1
Butyl naphthalene sulfonic acid, branched or linear, sodium salt	r	2
tert.-Butyl perbenzoate	1105	2
tert.-Butyl peroxyacetate[21]	1461	2
tert.-Butyl peroxyisobutyrate[21]	1459	2
tert.-Butyl peroxy-2-methylbenzoate[21]	1473	2
tert.-Butyl peroxyneodecanoate	1460	2
tert.-Butyl peroxypivalate[21]	1464	2
tert.-Butyl peroxy-3,5,5,-trimethylhexanoate	1463	2
2-sec.-Butylphenol	745	2
4-tert.-Butylphenol	1187	2
2-tert.-Butylphenol	1524	2
Butylstannonic acid	577	1
Butylthiostannonic acid	578	1
4-tert.-Butyltoluene	1185	2
Butyne-1,4-diol	1149	2
n-Butyraldehyde	48	1
n-Butyric acid	41	1
n-Butyric acid anhydride	1229	1
n-Butyric acid ethyl ester	100	1
γ-Butyrolactone	1286	1
Cacodylic acid, sodium salt	897	3
Cadmium acetate	851	3
Cadmium iodide	1034	3
Cadmium nitrate	49	3
Cadmium sulphate	564	3
Cadmium sulphide	1740	3
Calcium acetate[14]	1943	1
Calcium arsenate	360	3
Calcium arsenite	316	3

Calcium carbide	791	1
Calcium chlorate	318	2
Calcium chloride[14]	220	1
Calcium cyanamide	790	2
Calcium cyanide	319	3
Calcium formate	1237	1
Calcium hexacyanoferrate (II)	1417	2
Calcium hydroxide[8]	320	1
Calcium nitrate	321	1
Calcium oxide	322	1
Calcium-D-pantothenate[14]	1387	1
Calcium perchlorate	323	1
Calcium peroxide	324	1
Calcium suphfate[14]	325	1
Camphor	1116	1
ε-Caprolactam	221	1
Capronaldehyde	1507	1
Capronic acid	1667	1
Carbaryl	50	3
Carbofurane	984	3
Carbon disulphide	183	2
Carbon monoxide[14]	257	1
Carbon tetrachloride	189	3
Carbonylcyanide-m-chlorophenylhydrazone	958	3
Carboxymethylcellulose, sodium salt	829	1
ß-Carotine[14]	1416	1
Cefodizime disodium salt	1437	2
Chinidine sulphate	1501	1
Chinin hydrochloride	1658	1
Chloralhydrate	51	3
Chloramine T	640	2
Chlorfenvinphos	631	3
Chlorhexidine	602	3
Chlorhexidine digluconate	852	3
Chloridazone	1748	2
Chlorine[8]	223	2
Chlormequat chloride	755	2
Chloroacetamide	1517	2
Chloroacetic acid	227	2
Chloroacetic acid ethyl ester	1129	2
Chloroacetic acid methyl ester	228	2
Chloroalkanes (C10-C13)	649	3
Chloroalkanes C > 17 (solid)	155	1
Chloroalkanes (C > 17), liquid, organotin-free, content of short-chained, liquid chloroalkanes (C 10-13) < 3%	740	2
Chloroalkanes (C 14-17), liquid, organotin-free, content of of short-chained, liquid chloroalkanes (C 10-13) < 3%	840	2
Chloroalkanesulfonic acid, sodium salt	1430	3
Chloroformic acid methyl ester	1138	2
4-Chloro-2-amino diphenyl ether	1548	2
4-Chloroaniline	224	3

2-Chloroaniline	694	2
3-Chloroaniline	695	2
2-Chloroanthraquinone	1659	1
4-Chlorobenzaldehyde	1583	2
Chlorobenzene	53	2
2-Chlorobenzoic acid	225	2
4-Chlorobenzoic acid	226	2
4-Chlorobenzonitrile	1713	2
2-Chlorobenzonitrile	1727	2
4-Chlorobenzotrichloride	1265	3
4-Chlorobenzotrifluoride	1112	2
2-Chlorobenzoyl chloride	1697	1
3-Chlorobenzoyl chloride	1708	1
1-Chlorobutane	1190	2
Chlorocyan	948	3
1-Chloro-2-(dichloromethyl) benzene	1533	2
1-Chloro-4-(dichloromethyl) benzene	1842	2
1-Chloro-2,4-dinitrobenzene	1120	2
Chloroethane	793	2
2-Chloroethanol	229	3
N-Chloroethyl-N-ethylaniline	1541	2
2-Chloro-6-fluorobenzal chloride	1888	2
Chloroform	54	3
(3-Chloro-2-hydroxypropyl)trimethyl ammonium chloride	839	2
Chloromethane	265	2
3-Chloro-4-methylaniline	719	2
7-Chloro-3-methyl-8-quinoline carbonic acid	1911	2
5-Chloro-2-methyl-4-isothiazolin-3-one	1097	3
4-Chloro-3-methylphenol	231	2
4-Chloro-2-methylphenol	1164	2
1-Chloronaphthalene	232	2
4-Chloro-6-nitro-2-aminophenol, hydrochloride	1814	2
6-Chloro-4-nitro-2-aminophenol, hydrochloride	1889	2
4-Chloro-2-nitroaniline	706	2
2-Chloro-4-nitroaniline	1261	2
2-Chloro-5-nitroaniline	1808	2
1-Chloro-4-nitrobenzene	233	2
1-Chloro-3-nitrobenzene	709	2
1-Chloro-2-nitrobenzene	710	2
2-Chloro-5-nitrobenzoic acid	1762	1
2-Chloro-4-nitrotoluene	1260	2
1-Chlorooctane	1192	2
Chloropentafluoroethane	1115	1
2-Chlorophenol	234	2
4-Chlorophenol	1593	2
4-Chlorophenyl isocyanate	1377	3
3-Chloropropionic acid	235	1
2-Chloropropionic acid	1694	1
2-Chloropropionic acid methyl ester	1848	1
3-Chloropropyl trimethoxysilane	1763	1
3-Chloropropyne	1715	2

Chlorosilanes[13]	557	1
Chlorosulfonic acid	236	2
4-Chlorothiophenol	916	3
Chlorthiophos	619	3
2-Chlorotoluene	55	2
4-Chlorotoluene	237	2
2-Chloro-6-trichloromethylpyridine	539	2
Chlorpyrifos	622	3
Choline chloride	1134	1
Chromium(III) chloride, hexahydrate	807	2
Chromium(III) chloride, water-free	844	1
Chromium(III) potassium sulphate, dodecahydrate	808	2
Chromium(III) nitrate, nonahydrate	810	2
Chromomycin A	1027	3
Chromosulfuric acid	327	3
Chromium(III) sulphate, basic	809	2
Chromium(III) sulphate, water-free	841	1
Chromium trioxide (chromic acid)	328	3
Chromyl chloride	329	3
Cimetropium bromide	1080	3
Citral	1173	1
Citric acid[14]	57	1
Citronellal	1591	1
Citronellol	1590	1
Climbazole	1078	3
Clonidine hydrochloride	1005	3
Clonitralide	862	3
Cobalt(II) chloride	493	2
Cobalt(II) nitrate	520	2
Cobalt(II) sulphate	521	2
Cocoalkylamine	1885	2
Cocoamine-10EO-acetate	1087	3
Colcemide	944	3
Colchicine	888	3
Colophony	754	1
Colorant preparations, organic[25]	1492	2
Copper(II) arsenite	355	3
Copper(II) arsenite acetate	356	3
Copper(II) chlorate	357	2
Copper(I) chloride	358	2
Copper(II) chloride	359	2
Copper(II) nitrate	1347	2
Copper(II) oxide	1401	1
Copper(II) sulphate	141	2
Cupferron	858	3
m-Cresol	140	2
o-Cresol	1223	2
p-Cresol	1592	2
Crotonaldehyde	239	3
Crotonic acid	1787	1
Crude oils (high-viscous and solid, kinetic viscosity at 20 °C ≥ 30 cSt)	439	1

Crude oils (low-viscous, kinetic viscosity at 20°C < 30 cSt, < 0.1% benzene)	440	2
Crude oils (low-viscous, kinetic viscosity at 20°C < 30 cSt, ≥ 0.1% benzene)	1937	3
Cumatetralyl	1017	3
Cumene	58	1
Cumol hydroperoxide	59	2
Cumyl peroxy neodecanoate[21]	1470	2
Cyanoacetyl methyl urea	1825	1
Cyanamide	789	2
2-Cyaniminobarbituric acid	1878	1
p-Cyanobenzyl chloride	1728	2
Cyanuric chloride	1600	1
Cyclododecanol	1201	1
Cyclododecanone	1198	1
1,5,9-Cyclododecatriene	1204	2
Cycloheptane	61	1
Cycloheptene	62	1
Cyclohexane	63	1
Cyclohexanol	240	1
Cyclohexanone	64	1
Cyclohexanone oxime	1566	1
Cyclohexene	65	1
Cycloheximide	890	3
Cyclohexylamine	67	1
2-(Cyclohexylamino)ethanol	1774	1
Cyclohexylammonium chloride	529	1
N-Cyclohexyldiazeniumdioxy-potassium	758	2
Cyclohexyl methanol	1564	1
Cyclohexyl methyl ketone	1396	1
2-Cyclohexyl phenol	1636	3
Cyclopentane	478	1
Cyclopentanol	68	1
Cyclopentanone	69	1
Cyclophosphamide	860	3
Cyclopropyl methyl bromide	1026	3
Cyfluthrin	678	3
Cyhexatin	451	3
Cymarin	950	3
Cymarol	942	3
Cypermethrin	679	3
Dazomet	1180	3
p,p'-DDD	465	3
p,p'-DDE	466	3
p,p'-DDT	70	3
n-Decanol	71	1
Decyl oxirane	1775	1
Dehydro digoxigenine-3	1010	3
2-Dehydro linalool	1175	1
Dehydrothio-4-toluidine disulfonic acid, disodium salt	1872	2
Deltamethrin	680	3

Demeton-S-methyl	655	3
Demeton-S-methyl sulphon	607	2
Desacetyl lanatoside C	1052	3
Diacetone alcohol	72	1
α,β-Diacetyldigoxin	1072	3
Dialifos	629	3
Dialkyl(C16-C18)-dimethyl ammonium chloride	674	2
2,4-Diaminoanisol	963	3
2,5-Diaminobenzene sulfonic acid	1527	2
1,4-Diamino cyclohexane	1000	3
4,4'-Diamino diphenylamine sulphate	1876	2
4,4'-Diamino diphenyl methane	913	3
Diamino mesitylene sulfonic acid	1861	2
2,4-Diamino-5-methylbenzene sulfonic acid	1528	1
1,3-Diaminopropane	1605	2
4,4'-Diaminostilbene-2,2'-disulfonic acid	1213	1
4,4'-Diaminostilbene-2,2'-disulfonic acid, disodium salt	1243	1
Diazinon	609	3
Di(benzothiazol-2yl) disulphide	1322	2
Dibenzoyl peroxide	1100	1
1,2-Dibromoethane	241	3
2,3-Dibromopropan-1-ol	242	2
Di-n-butylamine	593	1
Di-n-butylammonium chloride	610	1
N,N-Dibutylaniline	1702	2
Di-(4-tert.-butylcyclohexyl)-peroxydicarbonate	1493	1
Dibutylethanolamine	1573	1
Di-n-butyl ether	73	2
Di-n-Butyl formal	1764	1
N,N-Dibutylformamide	1721	1
2,6-Di-tert.butyl-4-methylphenol	724	1
Di-tert. Butyl peroxide	1103	1
2,5-Di-(tert.-butylperoxy)-2,5-dimethyl hexane	1456	1
1,4-Di-(tert.-butylperoxy isopropyl)-benzene	1454	1
Dicetyl peroxydicarbonate	1476	1
Dichlofluanid	974	3
Dichloroacetic acid	243	1
Dichloroacetyl chloride	1117	1
2,3-Dichloroaniline	696	3
2,4-Dichloroaniline	697	3
2,5-Dichloroaniline	698	3
2,6-Dichloroaniline	699	3
3,4-Dichloroaniline	700	3
2,5-Dichloroaniline-4-sulfonic acid, sodium salt	1865	2
2,3-Dichlorobenzaldehyde	1813	2
1,2-Dichlorobenzene	74	2
1,3-Dichlorobenzene	641	2
1,4-Dichlorobenzene	642	2
3,3'-Dichlorobenzidine	903	3
2,4-Dichlorobenzotrifluoride	1389	2
Di-(p-chlorobenzoyl) peroxide	1479	2

2,6-Dichlorobenzyl chloride	990	3
2,4-Dichlorobenzyl chloride	1553	3
1,4-Dichlorobut-2-ene	973	3
1,4-Dichloro-5,8-dihydroxy anthraquinone	1773	1
1,2-Dichloroethane	102	3
1,1-Dichloroethane	895	3
1,1-Dichloroethene	794	3
1,2-Dichloroethene (cis and trans)	795	2
Dichloromethane	149	2
1,2-Dichloro-3-nitrobenzene	749	3
1,2-Dichloro-4-nitrobenzene	845	3
1,3-Dichloro-4-nitrobenzene	1274	3
2,3-Dichlorophenol	75	3
2,4-Dichlorophenol	244	3
3,4-Dichlorophenol	907	3
2,4-Dichlorophenoxyacetic acid	1177	2
2-(4-(2',4'-Dichlorophenoxy)phenoxy)propionic acid methyl ester	1871	2
2-(2,4-Dichlorophenoxy)-propionic acid	1178	2
3,4-Dichlorophenyl isocyanate	1126	2
N-(3,4-Dichlorophenyl) propionamide	736	3
4,5-Dichloro-2-phenyl-3(2H)pyridazinone	1165	2
1,2-Dichloropropane	446	3
2,3-Dichloropropene	246	3
1,3-Dichloropropene (cis and trans)	245	3
2,2-Dichloropropionic acid, sodium salt	731	1
3,7-Dichloroquinoline-8-carbonic acid	1432	2
2,4-Dichlorotoluene	1224	2
2,6-Dichlorotoluene	1233	2
3,4-Dichlorotoluene	1556	2
Dichlorvos	632	3
Dicumyl peroxide	1102	2
Dicyanodiamide	247	1
Dicyclohexylamine	1226	2
Dicyclopentadiene	1514	3
Didecanoyl peroxide	1451	1
Didodecyl-tin-bis-(thioglycolic acid isooctyl ester)	574	1
Didodecyl tin dichloride	572	1
Didodecyl tin oxide	573	1
Dieldrin	467	3
Diesel fuel	76	2
Diethanolamine	77	1
Diethanol ammonium chloride	531	1
Diethylamine	248	1
3-Diethylaminoacetanilide	1817	1
4-Diethylaminobenzaldehyde	1642	2
Diethylaminoethyl acrylate	1759	2
2-Diethylaminoethylamine	1563	1
Diethylaminopentinol	1836	1
3-Diethylaminophenol	1540	2
N-(3-Diethylaminopropyl)amine	1580	1
Diethylammonium chloride	447	1

N,N-Diethylaniline	1340	2
2,6-Diethylaniline	1690	2
1,2-Diethylbenzene	78	2
Diethyl-N,N-di-(2-hydroxyethyl)aminomethylphosphonate	1770	1
Diethylene glycol	79	1
Diethylene glycol mono-n-butyl ether	46	1
Diethylene glycol monoethyl ether	101	1
Diethylene glycol monomethyl ether	746	1
Diethylene triamine	1231	2
Diethylene triamine pentaacetic acid, sodium salt	1157	2
Diethyl ethanolamine	1288	1
Diethyl ether	80	1
N,N-Diethylformamide	1707	1
2,5-Di-(2-ethylhexanoyl-peroxy)-2,5-dimethylhexane[21]	1458	2
Di-(2-ethylhexyl) amine	1589	2
Di-(2-ethylhexyl) peroxy dicarbonate	1477	2
Diethyl ketone	747	1
Diethylmetanilic acid	1562	1
2,6-Diethyl-4-methylaniline	1855	2
Diethylthiourea	915	2
Diethyl toluylene diamine	1896	2
Digitonin	1040	3
Digitoxigenin	931	3
Digitoxigenin bisdigitoxoside	1047	3
Digitoxigenin-glucomethyloside	1079	3
Digitoxigenin monodigitoxoside	1056	3
Digitoxigenone	975	3
Digitoxin	892	3
Digoxigenin	986	3
Digoxigenin bisdigitoxoside	1013	3
Digoxigenin monodigitoxoside	1069	3
Digoxin	1059	3
Di-n-hexylamine	1670	2
Dihydrazinium sulphate	1045	3
Dihydrodigitoxigenin	1008	3
Dihydrodigitoxin	1004	3
Dihydrodigoxigenin	1009	3
Dihydrodigoxin	1014	3
Dihydro ergotamine tartrate	1020	3
6,7-Dihydrolinalool	1174	1
Dihydro-β-methyldigoxin	1083	3
1,8-Dihydroxy anthraquinone	1626	1
2,4-Dihydroxybenzoic acid	1538	1
2,2'-Dihydroxybiphenyl	1753	2
4,4'-Dihydroxybiphenyl	1222	2
4,5-Dihydroxy-1,3-bis-(hydroxymethyl)-2-imidazolidinone	1166	1
1,5-Dihydroxy-4,8-dinitroanthraquinone	1657	1
N,N-Di(2-hydroxyethyl)aniline	1385	2
1,7-Dihydroxynaphthalene	1687	2
1,6-Dihydroxynaphthalene	1688	2
2,6-Dihydroxynaphthalene	1691	2

2,7-Dihydroxynaphthalene	1692	2
9,10-Dihydroxystearic acid, ammonium salt	1433	1
Diisobutylformamide	1766	2
Diisobutyl ketone	591	1
Diisopropanolamine	827	1
Diisopropanol ammonium chloride	828	1
Diisopropylamine	614	2
Diisopropyl ammonium chloride	605	2
1,3-Diisopropyl benzene hydroperoxide	1098	2
Diisopropyl ethanolamine	1561	2
Diisopropyl ether	598	1
Diisopropyl naphthalene (DIPN)	727	1
Diisopropyl peroxydicarbonate	1494	1
Diketene	1287	1
Dilauroyl peroxide	1101	1
1,3-Dimercaptopropan-2-ol	961	3
Dimethoate	249	3
2,5-Dimethoxy-2,5-dihydrofurane	1674	1
Dimethoxymethane	1380	1
2,5-Dimethoxytetrahydrofurane	1718	1
N,N-Dimethyl acetamide	1289	1
2',4'-Dimethylacetoacetanilide	1121	1
Dimethyl adipate	1716	1
N,N-Dimethyl-C12/14-alkylamine	1362	2
Dimethylamine	250	2
Dimethyl aminoborane	1369	2
2-Dimethylaminoethanol	738	1
Dimethylaminoethyl acrylate	1760	2
1-Dimethylaminopropan-2-ol	1598	1
3-Dimethylaminopropan-1-ol	1782	1
3-Dimethylaminopropionic acid nitrile	1358	1
Dimethylammonium chloride	457	1
2,4-Dimethylaniline	82	2
3,4-Dimethylaniline	595	2
2,3-Dimethylaniline	596	2
N,N-Dimethylaniline	1152	2
2,6-Dimethylaniline	1521	2
Di-(2-methylbenzoyl)-peroxide	1450	1
N,N-Dimethylbenzylamine	1577	2
N,N-Dimethylcyclohexylamine	1144	1
Di-(Methylcyclohexyl)-phthalate	1859	1
Dimethyl dicycane	1335	3
4,4'-Dimethyl diphenyl ether	1745	2
N,N'-Dimethyl-N,N'-diphenylurea	1700	2
N,N-Dimethylethanol ammonium chloride	739	1
Dimethyl ether	714	1
2-(1,1-Dimethylethyl) cyclohexanone	1750	1
Dimethylethyl cocoalkyl ammonium methosulfate	1089	3
N,N-Dimethylformamide	83	1
1,4-Dimethyl hexahydroterephthalate	1550	1

Dimethyl-N-(2-hydroxyethyl)-N-(2-hydroxyhexadecyl) –ammonium chloride	1096	3
N,N-Dimethylisopropylamine	1734	2
cis-2,6-Dimethylmorpholine	1824	2
N,N-Dimethyl-n-octadecyl-(2-hydroxy-3-chloropropyl)-ammonium chloride	1407	3
3,7-Dimethyloctan-3-ol	1516	1
3,5-Dimethylphenol	1367	2
2,6-Dimethylphenol	1689	2
2,2-Dimethylpropane[14]	463	1
2,2-Dimethylpropane-1,3-diol	744	1
N,N-Dimethylpropylene diamine	1604	2
N,N'-Dimethylpropyleneurea	1827	2
N,N-Dimethylsulphamoyl chloride	1044	3
Dimethyl sulphate	734	2
Dimethyl(tetradecyl)amine	1622	3
N,N-Dimethyl-m-toluidine	1386	2
N,N-Dimethyl-o-toluidine	1698	1
Dimethyl tin-bis-(thioglycolic acid isooctyl ester)	575	2
N,N'-Dimethylurea	1142	1
Dimyristyl peroxydicarbonate	1107	1
Disodium hydrogen phosphate	330	1
2,4-Dinitroaniline	704	2
1,3-Dinitrobenzene	84	3
1,4-Dinitrobenzene	707	3
1,2-Dinitrobenzene	708	3
4,4'-Dinitrostilbene-2,2'-disulfonic acid, dipotassium salt	1249	1
2,4-Dinitrotoluene	251	3
2,5-Dinitrotoluene	645	3
2,6-Dinitrotoluene	646	3
Dinoseb	85	2
Dioctanoyl peroxide	1452	1
Dioctyl tin-bis-(thioglycolic acid isooctyl ester)	571	2
Dioctyltin dichloride	569	2
Dioctyltin oxide	570	2
1,4-Dioxane	86	2
4-(1,4-Dioxaspiro(4,5)-decan-8-yl)-cyclohexanone	1939	1
Dipentene	87	1
Diphenyl	1309	2
Diphenylamine	726	3
Diphenyl carbonate	1227	1
4,4'-Diphenyl disulfonic acid	1796	1
Diphenyl ether	88	2
N,N'-Diphenyl guanidine	1337	2
Diphenylmethane	89	2
Diphenyl methane diisocyanate	635	1
3-Diphenylmethoxy-8-isopropyl-8-azoniabicyclo-[3.2.1]octane methanesulphonate	1053	3
Diphenylol propane	1308	2
Diphenylphosphine chloride	1399	2
Diphenylphosphine oxide	1445	2
Diphenyl-4-sulfonic acid, sodium salt	1757	2
Dipicrylamine	928	3

Di-n-propylamine	1668	1
Dipropylene glycol diacrylate	1881	2
Dipropylene triamine	1503	2
Disulfuric acid (oleum)	331	2
Disulfoton	620	3
Dithiocarbonic acid-O-ethyl ester, sodium salt	1665	2
Ditolyl ether	720	2
Di-(3,5,5-trimethylhexanoyl)peroxide[21]	1453	1
Diuron	1294	3
DL-Methionine[14]	1353	1
DL-Methionine, sodium salt	1866	1
Dodecane-1,2-diol	1739	1
Dodecane-1-ol	1482	1
tert.-Dodecanethiol	1067	2
1-Dodecylamine	1654	2
Dodecyl dimethylamine	1259	2
Dodecyloxirane	1784	1
Dodecylstannonic acid	584	1
Edifenphos	1048	3
Embutramide	1846	2
Emetine dihydrochloride	937	3
α,β-Endosulfane	468	3
Endrin	469	3
Epichlorohydrine	92	3
(-)-Epinephrine	866	3
(+)-Epinephrine	934	3
(-)-Epinephrine hydrochloride	875	3
(+)-Epinephrine hydrochloride	938	3
Epinephrine hydrogen tartrate	865	3
2,3-Epoxypropan-1-ol	1685	3
2,3-Epoxypropyltrimethylammonium chloride	1365	3
Erysimoside	1028	3
Erysimosol	1039	3
Estertin	587	2
Ethanol[10, 14]	96	1
Ethanol ammonium chloride	533	1
Ethephon	689	2
1-Ethine-1-cyclohexanol	1370	1
1-Ethinyl-2-methylpent-2-enyl chrysanthemate	1084	3
Ethoprophos	650	3
2-Ethoxy-5-methylaniline	1812	2
2-Ethoxynitrobenzene	1699	1
3-Ethoxypropylamine	1810	1
Ethylamine	97	1
2-(Ethylamino)benzoic acid	1375	1
3-(Ethylamino)-4-cresol	1644	2
2-Ethylamino-5-sulfobenzoic acid	1632	2
3-Ethylamino-p-toluenesulfonic acid	1143	1
Ethylammonium chloride	558	1
Ethyl-n-amyl ketone	98	1
N-Ethylaniline	252	1

2-Ethylanthraquinone	1373	1
Ethylbenzene	99	1
N-Ethyl-N-benzylaniline	1544	2
N-Ethyl-N-benzyl-m-toluidine	1640	2
2-Ethylbutyric acid	1522	1
Ethyl diglycol acetate	1620	1
N,N'-Ethylenebis-(N-acetylacetamide)	1268	1
Ethylenediamine	103	2
Ethylenediamine hydrochloride	535	2
Ethylenediamine tetraacetic acid including sodium and potassium salts	104	2
Ethylene glycol[11, 14]	105	1
Ethylene glycol mono-n-butyl ether	47	1
Ethylene glycol monomethyl ether	107	1
Ethylene glycol monomethyl ether acetate	1147	1
Ethylene urea	1646	1
Ethylene imine	108	3
Ethylene oxide	253	2
Ethyl formate	1607	1
Ethyl glycol monoethyl ether	5058	1
2-Ethylhexanal	1153	1
2-Ethylhexanol-1	134	2
2-Ethylhexanoic acid	1179	1
2-Ethylhexanoyl chloride	1160	1
2-Ethylhexenal	1857	1
2-Ethylhexylamine	109	2
2-(Ethylhexyl)ammonium chloride	537	2
2-Ethylhexyl chloroformate	1854	2
2-Ethylhexyl nitrate	1947	2
N-Ethylmaleinimide	927	3
4-Ethyl-3-(2-methoxy-5-chlorobenzamido)-benzene sulfonamide	1418	1
2-Ethyl-6-methylaniline	1247	2
2-Ethyl-4-methyl-1,3-dioxolane (cis/trans-mixture)	1500	1
N-Ethylmorpholine	1567	1
Ethyl(1-naphthy)lamine	1629	2
N-Ethyl-p-nitro-o-toluidine	1879	2
N-Ethylpiperidine	1722	1
Ethyl polysilicate	488	1
Ethyl thiocarbamic acid-O-isopropyl ester	1388	2
2-(Ethylthio)ethanol	1611	2
N-Ethyl-o-toluidine	1551	1
Etrimphos	623	3
Evomonoside	951	3
Farnesylacetone	1738	1
Fatty acid ethylhexyl ester (fatty acid C-chain saturated, unsaturated or epoxidised, even-numbered and linear, number of C-atoms ≥ 12[11]	838	1
Fatty acid methyl ester (fatty acid C-chain saturated or unsaturated, even-numbered and linear, number of C-atoms ≥ 6)[11]	834	1
Fatty acids, C16-18, ester with ethylene glycol	1912	1
Fatty acids, saturated, linear, number of C-atoms ≥ 8 and ≤ 12 with a terminal carboxyl group[11]	657	1

Fatty acids, sodium and potassium salts (Fatty acids - saturated and unsaturated with even-numbered linear carbon chain and - carbon number ≥12)	669	1
Fatty acids, C8-10, mixed esters with neopentyl glycol and trimethylolpropane	1313	1
Fatty acids, unsaturated, even-numbered and linear, number of C-atoms 16 - 18 and with a terminal carboxyl group[11]	659	1
Fatty alcohols, C16-18, distillation residues	1900	1
Fatty alcohol EO/PO adducts	672	2
Fenaminosulf	930	3
Fenamiphos	1062	3
Fenbutatin oxide	532	3
Fenitrothion	926	3
Fenpropathrin	681	3
Fensulfothion	924	3
Fenthion	616	3
Fenvalerate	682	3
Ferrocene	1489	2
Fish oil, bisulfited[11]	1327	1
Flubenzimine	1077	3
p-Fluorobenzal chloride	1735	1
p-Fluorobenzotrichloride	1390	2
p-Fluorobenzylchloride	1675	2
Fluoroacetic acid	156	3
Fluorosulfonic acid	774	1
2-Fluorotoluene	906	3
4-Fluorotoluene	940	3
Flutropium bromide	1088	3
Folic acid	1504	1
Formaldehyde	112	2
Formamide	1509	1
Formetanate	1065	3
Formetanate hydrochloride	1066	3
Formic acid	210	1
Formic acid methyl ester	733	1
Ortho-formic acid triethyl ester	1195	1
Fuchsin	857	3
Fumaric acid	1191	1
2-Furaldehyde	113	2
Furfuryl alcohol	114	1
Beta-D-galactose pentaacetate	1412	1
Geranyl acetone	1410	2
Gitalin	980	3
Gitaloxigenin	952	3
Gitaloxin	1001	3
Gitoxigenin	957	3
Gitoxin	1011	3
Glibenclamide	1835	2
Glutardialdehyde	712	2
Glutaric acid	1296	1
Glycerol[14]	116	1

Glycerol diester (fatty acid C-chain linear, number of C-atoms ≥ 8, with terminal carboxyl group)[11, 14]	691	1
Glycerol monoester (fatty acid C-chain linear, number of C-atoms ≥ 8, with terminal carboxyl group)[11, 14]	690	1
Glycolic acid n-butyl ester	117	1
Glyoxal	1130	1
Guanidine, cyano-, polymer with ammonium chloride, 1,2-ethanediamine and formaldehyde[8]	1930	3
Guanidinium hydrochloride	788	1
Guanidinium nitrate	787	1
Heating oil, extra-light	119	2
Heating oil, heavy	443	1
Helveticoside	967	3
n-Heptane	120	1
n-Heptan-1-ol	121	1
n-Hepte-1-ne	122	1
Heptenophos	651	3
Hexabromocyclododecane, 1,2,5,6,9,10-	778	1
Hexachlorobenzene	470	3
Hexachlorobutadiene	123	3
Hexachlorocyclopentadiene	799	3
Hexachloroethane	798	3
Hexadecane-1-thiol	999	3
Hexafluorosilicic acid	491	2
Hexahydrophthalic acid anhydride	1520	1
Hexamethylenediamine	1355	1
Hexamethylenetetramine	1568	1
n-Hexane	124	1
Hexane-1,6-diol[14]	1394	1
Hexane-3,4-dione	1790	1
n-Hexan-1-ol	125	1
n-Hexan-2-ol	126	1
n-Hexan-3-ol	127	1
Hex-1-ene	832	1
n-Hexylamine	1615	1
Hex-3-yne-2,5-diol	1780	2
Homatropine	901	3
Homatropine hydrobromide	868	3
Homatropine hydrochloride	968	3
Homatropine methyl bromide	899	3
Hydrazine	130	3
Hydrocarbon solvents: < 5% aromates, not classified carcinogenic (R 45)	27	1
Hydrocarbon solvents: > 5% aromates, not classified carcinogenic (R 45)	775	2
Hydrocyanic acid	309	3
Hydrogen bromide	217	1
Hydrogen chloride[8]	238	1
Hydrogen fluoride	254	1
Hydrogen iodide	332	1
Hydrogen peroxide[14]	288	1
Hydrogen selenide	284	3
Hydrogen sulphide	283	2

Hydroquinone	128	2
Hydroquinone-bis(2-hydroxyethyl)ether	1579	1
Hydroquinone monomethyl ether	129	1
Hydrocumol	1717	1
Hydrodehydrolinalool	1331	2
Hydroxyacetone	1623	1
4-Hydroxybenzoic acid	1303	1
3-Hydroxy-2-butanone	1679	1
Hydroxycitronellal dimethyl acetal	1666	2
2-Hydroxydibenzofuran-3-carboxylic acid	1627	2
1-Hydroxyethane-1,1-diphosphonic acid	1772	2
2-Hydroxyethanesulfonic acid, sodium salt	1744	1
2-Hydroxyethyl acrylate	1724	2
N-Hydroxyethyl-N-ethylaniline	1542	2
N-Hydroxyethyl-N-methylaniline	1549	2
4-(2-Hydroxyethyl)-morpholine	1712	1
N-[4-[(2-Hydroxyethyl)-sulfonyl)phenyl]acetamide	1270	1
1-Hydroxy-1-hydroxyperoxy-dicyclohexyl peroxide	1109	1
2-Hydroxy-5-methyl-benzoic acid	1535	1
4-Hydroxy-2-methyl-pentyl-(2)-peroxyneodecanoate[21]	1468	2
1-Hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)pyridin-2(1H)-one, compound with 2-aminoethanol (1:1)	5106	2
7-Hydroxy-1,3-naphthalene disulfonic acid, dipotassium salt	1238	1
2-Hydroxy-1-naphthoic acid	1405	2
4-Hydroxy-6-(phenylamino)-naphthalene-2-sulfonic acid	1631	2
Hydroxypivalic acid neopentyl glycol ester	1163	1
(-)-Hyoscyamine	912	3
(-)-Hyoscyamine hydrobromide	936	3
(-)-Hyoscyamine hydrochloride	1019	3
Hyoscyamine sulphate	964	3
Imidazole	1448	1
Imidazolinium salt	675	2
Indigo	818	1
Indometacin	870	3
Iodine	492	1
Iodixanol	1934	1
Iohexol	1932	1
Iopentol	1933	1
Ipratropium bromide	1063	3
Iron(III) chloride[8]	515	1
Iron(II) chloride	524	1
Iron(III) chloride sulphate[8]	721	1
Iron(III) nitrate[8]	516	1
Iron(II) sulphate[8]	514	1
Isatoic acid anhydride	783	1
Isoamyl alcohol	597	1
Isobutanol	131	1
Isobutyl acrylate	1595	2
Isobutylidene diurea	1168	1
Isobutyl trimethoxysilane	1849	1
Isobutyraldehyde	1136	1

Isobutyric acid	1139	1
Isobutyric acid nitrile	132	2
Isodecyl alcohol	1291	1
Isofenphos	684	3
Isononanoic acid	1277	1
Isononanoyl chloride	1880	1
Isononyl alcohol	831	2
Isooctylphenol	1205	2
Isopentane	648	1
Isophorone	1183	2
Isophorone diamine	1202	1
Isophorone diisocyanate	1203	2
Isopropanol	135	1
Isopropanolamine	1137	1
3-Isopropoxypropylamine	1777	1
Isopropyl isocyanate	1752	1
N-Isopropyl nortropine	1003	3
p-Isopropylphenyl isocyanate	1271	1
Isotridecan-1-ol	1172	2
Isovaleraldehyde	1356	1
Koratin MAT	1907	1
Kryolith	1329	1
Lanatoside A	1050	3
Lanatoside C	1051	3
Laurinlactam	1199	1
Lead(II) acetate	36	2
Lead(II) arsenate	310	3
Lead(II) arsenite	311	3
Lead(II) cyanide	312	3
Lead(II) nitrate	313	2
Lead(II) perchlorate	314	2
Lead tetraethyl	35	3
Lead tetramethyl	538	3
Lignite tar	496	3
Lignin sulfonic acid, sodium salt	1320	1
Linalool	1135	1
Linalyl acetate	1381	1
Lindane	143	3
Linuron	258	3
Lubricating oils, mineral-oil-based (alloyed, emusifiable and not emulsifiable, upper boiling limit > 400 °C)[19]	436	2
Lubricating oils, mineral oil-based (base oils, not alloyed, except dark process oils, upper boiling limit > 400 °C)	435	1
Magnesium acetate[14]	1944	1
Magnesium arsenate	361	3
Magnesium chlorate	362	2
Magnesium chloride[14]	259	1
Magnesium hexafluorosilicate	518	2
Magnesium nitrate	363	1
Magnesium perchlorate	364	1
Magnesium peroxide[14]	365	1
Magnesium phosphide	552	2

Magnesium sulphate[14]	366	1
Malathion	615	3
Maleic acid	260	1
Maleic acid anhydride	261	1
Maleic acid di-n-butyl ester	1189	1
Maleic acid dimethyl ester	1325	1
Malonic acid diethyl ester	1188	1
Malonic acid diisobutyl ester	1869	1
Manganese(II) chloride	494	1
Manganese(II) sulphate	522	1
Mecoprop	1826	2
Melamine resin, sulfite-modified	1483	1
Mercaptanes (except tert. Dodecanethiol)	144	3
8-Mercapto-7,8-dihydroguanosine	1068	3
Mercaptodimethur	991	3
2-Mercaptoethanol	884	3
2,3-Mercaptopropan-1-ol	882	3
3-Mercaptopropionic acid	918	3
6-Mercaptopurine	861	3
Mercury	393	3
Mercury(II) acetate	394	3
Mercury(II) arsenate	395	3
Mercury(II) benzoate	396	3
Mercury(I) bromide	397	3
Mercury(II) bromide	398	3
Mercury(I) chloride	399	3
Mercury(II) chloride	180	3
Mercury(II) cyanide	400	3
Mercury(II) diamine chloride	401	3
Mercury(II) disulphate	402	3
Mercury(II) gluconate	403	3
Mercury(II) iodide	404	3
Mercury(I) nitrate	405	3
Mercury(II) nitrate	406	3
Mercury(II) oleate	407	3
Mercury(II) oxide	408	3
Mercury(II) oxide cyanide	409	3
Mercury(II) salicylate	410	3
Mercury(I) sulphate	411	3
Mercury(II) sulphate	412	3
Mercury(II) thiocyanate	413	3
Merthiolate	872	3
Mesityloxide	262	1
Metamitron	835	2
Metanilic acid	1647	1
Methabenzthiazuron	1282	2
Methacrylamide	1251	1
Methacrylic acid	1252	1
Methacrylic acid n-butyl ester	1254	1
Methacrylic acid-2-(dimethylamino)ethyl ester	1257	1
Methacrylic acid-2-hydroxyethyl ester	1255	1

Methacrylic acid hydroxypropyl ester	1256	1
Methacrylic acid isobutyl ester	1253	1
Methacrylic acid methyl ester	154	1
Methallyl chloride	1196	2
Methamidophos	688	3
Methanesulphonyl chloride	1655	2
Methane thiophosphonic acid dichloride	970	3
Methanol	145	1
Methidathion	653	3
Methoxyacetic acid	5060	1
4-Methoxybenzyl alcohol	1586	1
2-Methoxy-2,3-dihydro-4H-pyrane	1413	1
2-Methoxyethyl chloride	965	3
2-Methoxy-4-nitroaniline-5-sulfonic acid, sodium salt	1883	2
2-Methoxypropan-1-ol	1746	1
3-Methoxypropylamine	1798	1
4-Methoxytoluene	1585	1
Methylamine	263	2
2-Methylaminoethanol	1379	1
Methylammonium chloride	459	1
2-Methylaniline	195	3
3-Methylaniline	453	2
4-Methylaniline	693	2
N-Methyl benzamide	1392	1
Methyl-1H-benzotriazol	1449	2
3-Methylbenzoyl chloride	1749	1
N-Methylbenzylamine	1576	1
N-Methyl-N-benzylaniline	1704	2
o-Methylbenzyl chloride	1684	2
m-Methylbenzyl chloride	1709	2
Methylbenzyl propionate	1645	1
2-Methyl-1,3-butadiene	1285	1
3-Methylbutanone	1686	1
3-Methyl-2-butenal	1145	2
2-Methylbut-3-en-2-ol	1150	1
3-Methylbut-2-en-1-ol	1158	1
3-Methylbut-3-en-1-ol	1161	1
2-Methylbut-3-yn-2-ol	1151	1
1-Methyl-2-chloro-5-amino-4-benzene sulfonic acid	1529	2
4-Methyl-1-chloromethyl benzene	1581	1
2-Methyl-4-chlorophenoxyacetic acid	1176	2
Methylcyclohexanol	1856	1
2-Methylcyclohexanone	148	1
Methylcyclohexanone, mixture of isomers	1741	1
Methylcyclohexanone peroxide[23]	1478	1
N-Methylcyclohexylamine	1565	1
N-Methyldicyclohexylamine	1828	2
N-Methyldiethanolamine	1588	1
Methyldigoxin	1071	3
Methyldiisopropanolamine	1789	1
Methyldistearylamine	830	2

4, 4'-Methylene-bis(2,6-di-tert.-butylphenol)	1383	1
4,4'-Methylenebis-(methylimino)-bis-(1,2-dihydro-1,5-dimethyl-2-phenyl)-3H-pyrazol-3-one	1264	1
α-Methyl ester sulfonates C12-C18, sodium salts	668	2
1-Methylethylbenzene, oxidized, polyphenyl residues[14]	1488	1
Methylethyl ketone	150	1
Methylethyl ketone peroxide[17]	1108	1
Methylethyl ketoxime	1558	1
N-Methyl formamide	1330	1
2-Methylfurane	151	1
6-Methylheptan-2-one	1162	1
6-Methylhept-5-en-2-one	1613	1
4-Methylhexahydrophthalic acid anhydride	1851	1
2-Methylhydroquinone	1555	2
4-Methylimidazole	1486	2
Methyl isoamyl ketone	152	1
Methyl isobutyl ketone	137	1
Methyl isobutyl ketone peroxide[21]	1495	1
O-Methylisourea sulfate	1874	1
Methyl isothiocyanate	266	3
Methylmercaptane	267	3
6-Methylmercaptopurine riboside	939	3
5-Methyl-2-(1-methylethyl)cyclohexanol	1743	1
N-Methylmorpholine	763	1
N-Methylmorpholine-N-oxide	764	1
2-Methyl-4-nitroaniline	705	2
4-Methyl-2-nitrophenol	1635	2
2-Methylpent-2-enal	1714	1
3-Methylpent-1-yn-3-ol	1515	1
N-Methyl-N-phenyl-carbamic acid ethyl ester	1767	2
2-Methylphenyl isocyanate	1705	3
3-Methylphenyl isocyanate	1710	2
1-Methyl-3-phenyl propylamine	1853	2
Methylphosphonic acid dimethyl ester	1720	2
N-Methyl phthalimide	1683	1
N-Methyl piperazine	1602	2
Methylpropyl ketone	590	1
Methyl proxitol	1597	1
3-Methylpyridine	1601	1
2-Methylpyridine	1603	1
N-Methylpyrrolidone	1181	1
(-)-Methylscopolamine methylsulfate	1055	3
Methyl-tert.butyl ether	1200	1
2-Methylthio-4,6-dichloro-1,3,5-triazine	853	3
3-(Methylthio)propionaldehyde	1785	3
6-Methyl-1,3,5-triazine-2,4-diyldiamine	1682	2
3-Methylxanthine	1737	1
Mevinphos	633	3
Mineral oil products, semifinished, liquid, > 5% aromates, not classified carcinogenic (R 45)	442	2
Mineral oil products, semifinished, liquid, < 5% aromates, not classified carcinogenic (R 45)	771	1

Mineral oil products, semifinished, liquid, classified carcinogenic (R 45)	441	3
Mineral oil based isolating oil according to DIN 57370, part 1 and 2	802	1
Mitomycine C	859	3
Monobutyltin trichloride	579	1
Monobutyl-tin-tris-(thioglycolic acid isooctyl ester)	580	1
Monododecyltin trichloride	585	1
Monododecyl-tin-tris-(thioglycolic acid isooctyl ester)	586	1
Monoethylethanolamine	1610	1
Monolinuron	157	3
Monomethyltin-tris-(thioglycolic acid isooctyl ester)	576	2
Monooctyltin trichloride	582	1
Monooctyltin-tris-(thioglycolic acid isooctyl ester)	583	1
Monothioglycerol	909	3
Morpholine	158	2
Morpholine-4-carbonyl chloride	1844	3
2-(4-Morpholinyl)ethylamine	1755	2
Morpholinyl-4-ethylisocyanide-2	1095	3
Mucochloric acid	1140	2
Multigrade foaming agents[38]	1954	2
Muscimol	997	3
Myxothiazol	1094	3
Naphthalene	269	2
Naphthalene-1,8-dicarboximide	1518	1
Naphthalene-1,5-diol	1216	2
Naphthalene-1,5-disulfonic acid, disodium salt	1326	1
β-Naphthoquinaldine	1519	2
2-Naphthol	1263	2
1-Naphthol-5-sulfonic acid, sodium salt	1801	1
1-Naphthylamine	822	2
2-Naphthylamine-5,7-disulfonic acid	833	2
1-Naphthylamine-3,7-disulfonic acid	1815	2
1-Naphthylamine-3,7-disulfonic acid, disodium salt	1901	2
2-Naphthylamine-3,6-disulfonic acid, monosodium salt	1797	1
1-Naphthylamine-3,6-disulfonic acid, monosodium salt	1903	2
2-Naphthylamine-1-sulfonic acid	1214	1
1,5-Naphthylenediamine	1283	2
Neodecanic acid	1858	2
Neodigoxin	1085	3
Neopentyl alcohol	1511	1
Neriifolin	943	3
trans-Nerolidol	1864	1
Nickel(II) chloride	159	2
Nickel(II) nitrate	387	2
Nickel(II) nitrite	388	2
Nicotinic acid	1368	1
Nitrating acid	389	2
Nitric acid (except smoking)	414	1
Nitric acid (smoking)	415	2
Nitric oxides	285	1
Nitrilotriacetic acid including sodium and potassium salts	160	2
5-Nitro-4-amino-1-methylbenzene	1537	2

4-Nitroaniline	162	2
2-Nitroaniline	702	2
3-Nitroaniline	703	2
2-Nitroanisole	647	3
4-Nitroanisole	725	1
Nitrobenzene	163	2
4-Nitrobenzoic acid	1505	1
3-Nitrobenzenesulfonic acid, sodium salt	1156	1
6-Nitro-1-diazo-2-naphthol-4-sulfonic acid	1428	2
4-Nitro-m-cresol	1765	3
Nitroethane	588	2
Nitromethane	589	2
1-Nitronaphthalene	1218	2
3-Nitrophenacyl bromide	992	3
4-Nitrophenol	1124	2
4-Nitro-N-phenylaniline	1398	3
4-Nitro-1,3-phenylenediamine	1794	2
2-Nitro-1,4-phenylenediamine	1795	2
4-Nitropyridine-N-oxide	978	3
4-Nitrosophenol	1584	2
Nitrosyl chloride	271	2
2-Nitrotoluene	164	3
3-Nitrotoluene	643	2
4-Nitrotoluene	644	2
3-Nitro-4-toluidine	1634	1
Nitrous oxide[14]	767	1
4-Nonylphenol	272	3
Nonylphenol ethoxylates	671	2
(+)-Norepinephrine	929	3
Norscopolamine	1012	3
Nortropine	954	3
Octadecylamine	1272	2
Octadecyl trimethoxysilane	1409	1
n-Octane	479	1
Octanedinitrile	1395	1
n-Octan-1-ol	165	1
n-Oct-1-ene	480	1
n-Octylamine	1619	2
Octylstannonic acid	581	1
1,8-Octanediamine	1676	2
α-Olefine sulfonate C14-C18	666	2
Oligomycin	983	3
Omethoate	273	3
Orinoco-natural bitumen (emulsified)	1447	1
Otto fuels, classified carcinogenic (R 45)	204	3
Otto fuels, not classified carcinogenic (R 45)	820	2
Oxalic acid	166	1
Oxalic acid diethyl ester	81	1
1-Oxalyl-1,4-phenylenediamine	1578	2
Oxydemeton-methyl	608	3
Oxydeprofos	996	3

α-Oxyminophenylacetic acid nitrile	1725	2
Oxitropium bromide	1070	3
α-Oxophenylacetic acid methyl ester	1246	1
Oxydiethylene-bis(chloroformate)	837	2
Pancreatin	1831	1
Pantolactone	1391	1
Paracetamol	1208	1
Paraffin slack waxes, hydrogenated, liquid, not classified carcinogenic (R 45)	1490	1
Paraformaldehyde	1422	2
Parafuchsin	891	3
Parathion-ethyl	167	3
Parathion-methyl	274	3
Pentaacetylgitoxin	1029	3
Pentachlorophenol	275	3
Pentachlorothiophenol	1301	3
Pentaerythritol	276	1
1,1,4,7,7-Pentamethyldiethylenetriamine	1779	2
n-Pentane	452	1
Pentasodium triphosphate	1209	1
Pentane-1,5-diol	1616	1
Pentane-1,2-diol[14]	1799	1
Pentane-2,4-dione	168	1
Pentane-2,3-dione	1695	1
Pentylamine	1609	1
Perchloric acid	390	1
Perfluorooctanic acid, ammonium salt	1411	2
Permethrin	683	3
Peroxyacetic acid	1371	2
Phalloidin	1049	3
Phenazone	1113	1
p-Phenetidine	1323	1
Phenol	170	2
2-Phenoxyethanol	1650	1
2-Phenoxypropionic acid	1733	1
Phenylarsonic acid	910	3
4-Phenyl-1,3-dioxane	1723	1
[Phenylene-bis(1-methylethylidene)]-bis(1,1-dimethylethyl)peroxide	1111	1
o-Phenylenediamine	821	3
m-Phenylenediamine	1312	2
p-Phenylenediamine	1594	3
1,3-Phenylenediamine-4-sulfonic acid	1531	2
Phenylethanol	1133	1
2-Phenylethyl acetate	1575	1
2-Phenylethylamine	1506	1
N-Phenyl formamide	1228	2
Phenylhydrazinium hydrochloride	883	3
Phenyl isocyanate	1302	2
N-Phenyl-N'-isopropyl-1,4-phenylenediamine	1336	3
Phenylmercuriborate	914	3
Phenylmercury acetate	885	3

N-Phenylmorpholine	1543	2
2-Phenylphenol	1310	2
2-Phenylpropanal	1546	1
Phosalone	630	3
Phosgene	1304	2
Phosphamidon	652	3
Phosphine	277	2
Phosphonic acid	1269	1
Phosphonic acid dialkyl ester (9-octadecenyl, hexadecanyl)	1481	1
Phosphonic acid diethyl ester	817	1
Phosphonic acid dimethyl ester	1281	1
2-Phosphonobutane-1,2,4-tricarboxylic acid	1306	1
Phosphoric acid	392	1
Phosphoric acid-bis-(2-ethylhexyl) ester	1236	1
Phosphoric acid di-n-butyl ester	1230	1
Phosphoric acid diphenyl cresyl ester	1248	2
Phosphoric acid 2-ethylhexyl diphenyl ester	1239	2
Phosphoric acid tri-n-butyl ester	196	2
Phosphoric acid triethyl ester	456	1
Phosphoric acid tricresyl ester	1240	2
Phosphoric acid triphenyl ester	1232	2
Phosphoric acid tris-(2-chloroethyl) ester	28	2
Phosphoric acid tris-(2-ethylhexyl) ester	1212	2
Phosphorous acid trimethyl ester	1234	1
Phosphorus pentoxide	391	1
Phosphorus trichloride	1245	1
Phoxim	686	3
Phthalic acid [14]	481	1
Phthalic acid anhydride[14]	732	1
Phthalic acid benzyl-n-butyl ester	278	2
Phthalic acid (C9/11)-dialkyl ester	1359	1
Phthalic acid di-(C16/18)-alkyl ester[14]	1361	1
Phthalic acid diallyl ester	173	2
Phthalic acid, di-C11-14-branched alkyl esters, C13-rich	1897	1
Phthalic acid di-n-butyl ester	186	2
Phthalic acid diethyl ester	174	2
Phthalic acid di-(2-ethylhexyl)ester	115	1
Phthalic acid diisobutyl ester	1184	2
Phthalic acid diisodecyl ester	606	1
Phthalic acid diisononyl ester	1295	1
Phthalic acid dimethyl ester	205	1
Phthalimide	722	1
Physostigmine	879	3
Physostigmine salicylate	880	3
Physostigmine sulphate	887	3
Picric acid	175	2
Pigment yellow 83[16]	1276	1
Pilocarpine	904	3
Pilocarpine hydrochloride	873	3
Pilocarpine nitrate	932	3
Pirimiphos-methyl	676	3

Pivalic acid	1512	1
Pivaloyl chloride	1786	1
Plifenate	1061	3
Polyacrylamide, cationic with cation strength > 15%[8]	812	3
Polyacrylamide, cationic with cation strength ≤ 15% and a residual monomer content < 0.1%[8]	717	2
Polyacrylamide, non-ionic and anionic, with a residual monomer content < 0.1%[8]	813	2
Polyacrylic acid, weakly cross-linked	1832	1
Polyaldehydocarbonic acids and sodium salts (medium molar mass 5000 - 10000)[8]	639	1
Polycarboxilate[8]	811	1
Polychlorinated biphenyls and terphenyls[34]	471	3
Polychlorinated naphthalenes	523	3
Polyester resins[27]	1950	1
Polyethylene glycol[11]	279	1
Polyethylene glycol sorbitan monolaurate	1833	1
Polyethylene glycol di(polydodecylene glycol)ether	1906	1
Polyglycerol	1420	1
Polymer dispersions[12]	662	1
Poly(oxy-1,2-ethanediyl), alpha-hydro-omega-hydroxy-, ether with oxybis (propanediol) (4:1), octadecanoate[14]	1905	1
Poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-hydroxy-11-14-isoalkyl ethers, C13-rich, sodium salts (medium EO 20)	7146	2
Potassium acetate	757	1
Potassium alum	510	1
Potassium antimonate (V)	22	3
Potassium antimonyl tartrate	334	3
Potassium arsenate	335	3
Potassium arsenite	336	3
Potassium carbonate	337	1
Potassium chlorate	52	2
Potassium chloride	230	1
Potassium cyanide	338	3
Potassium dichromate	339	3
Potassium dicyanoargentate	946	3
Potassium fluoroacetate	340	3
Potassium fluoride	341	1
Potassium hexacyanoferrate (II)	489	2
Potassium hexacyanoferrate (III)	490	2
Potassium hexafluorosilicate	517	2
Potassium hydrogen fluoride	342	1
Potassium hydrogen sulphate	343	1
Potassium hydrogen sulphide	344	2
Potassium hydroxide	345	1
Potassium nitrate	346	1
Potassium nitrite	347	2
Potassium oxide	348	1
Potassium-O-pentyl dithiocarbonate	1275	3
Potassium perchlorate	169	1
Potassium permanganate	1936	2
Potassium peroxide	349	1

Potassium peroxodisulfate	1350	1
Potassium peroxomonosulfate	1332	1
Potassium sulphate	255	1
Potassium sulphide	350	2
Potassium tetracyanomercurate (II)	351	3
Potassium tetraiodomercurate (II)	352	3
Promecarb	995	3
Prometon	613	2
Propane-1,3-diol	1677	1
n-Propanol	176	1
1,3-Propanesultone	977	3
Propane-2-thiol	894	3
Propargyl alcohol	177	2
Propargyl bromide	917	3
Propineb	1298	2
Propionaldehyde	1652	1
Propionitrile	1596	1
Propionic acid	483	1
Propionic acid anhydride	1235	1
Propionic acid ethyl ester	110	1
Propionic acid methyl ester	153	1
Propoxur	922	3
1,2-Propylenediamine	825	1
1,3-Propylenediamine tetraacetic acid	1754	2
1,2-Propylene diammonium chloride	826	1
1,2-Propylene glycol[14]	280	1
Propylenimine	896	3
n-Propyl glycol	1771	1
n-Propyl isocyanate	1612	1
Proscalun	1018	3
Protein foaming agents[37]	1953	1
Protein hydrolyzate	1431	1
Prothiofos	1074	3
Pyrazophos	624	3
Pyrethrin	1035	3
Pyridine	179	2
2-Pyrrolidone	1290	1
Quab 342	1867	2
Quinoline	1299	2
Quinomethionate	993	3
Quinalphos	1046	3
(±)-(R*, R* and R*, S*)-6-Fluoro-3,4-dihydro-2-oxiranyl-2H-1-benzopyran	1931	2
Reaction product of naphthalenesulfonic acid, formaldehyde and bisphenolsulfonic acid	1914	1
Remazol-Brillant Blue R spec.	5003	1
Resorcinol	1599	1
Rolitetracyclin	1719	1
Salicylaldehyde	181	2
Salicylic acid	281	1
(-)-Scopolamine	864	3
(-)-Scopolamine-n-butyl bromide	933	3

(-)-Scopolamine hydrobromide	923	3
(-)-Scopolamine hydrochloride	874	3
(-)-Scopolamine methyl bromide	935	3
(-)-Scopolamine methyl nitrate	1021	3
(-)-Scopolamine-N-oxide hydrobromide	1022	3
Scopoline	945	3
Selenic acid	420	2
Selenium dioxide	419	2
Silanes (gaseous)[13, 14]	567	1
Silanes (solid and liquid)[13]	566	1
Silanols[13]	568	1
Silicic acid, aluminium-sodium salt	805	1
Silicic acid, potassium salt	1316	1
Silicic acid, sodium salt	1314	1
Silicones A[13]	542	1
Silicones B[13]	543	1
Silver arsenite	421	3
Silver, colloidal	1031	3
Silver nitrate[8]	185	3
Simazine	603	2
Sodium	772	2
Sodium acetate[14]	367	1
Sodium adipate[14]	475	1
Sodium alkyl(C8-C20) sulfate	664	2
Sodium aluminate	1344	1
Sodium amide	1280	2
Sodium arsenate	23	3
Sodium arsenite	368	3
Sodium azide	636	2
Sodium benzoate	1284	1
Sodium benzene phosphinate	1788	1
Sodium bromide	38	1
Sodium butyrate	1485	1
Sodium carbonate[8]	222	1
Sodium chlorate	370	2
Sodium chloride[14]	270	1
Sodium chlorite[8]	487	2
Sodium chloroacetate	369	2
Sodium cumenesulphonate	1366	1
Sodium cyanate	1357	1
Sodium cyanide	60	3
Sodium dichromate	56	3
Sodium dihydrogen phosphate	371	1
Sodium disulfite	1169	1
Sodium dithionite	1170	1
Sodium fluoride	111	1
Sodium fluoroacetate	372	3
Sodium formate	373	1
Sodium gluconate	5223	1
Sodium hexacyanoferrate (II)	1293	2
Sodium hexafluoro silicate	519	2

Sodium hydrogen carbonate[14]	374	1
Sodium hydrogenfluoride	375	1
Sodium hydrogensulphate	376	1
Sodium hydrogensulphide	377	2
Sodium hydroxide[8]	142	1
Sodium hypochlorite[8]	815	2
Sodium iodide	138	1
Sodium metasilicate	847	1
Sodium methallyl sulfonate	756	1
Sodium methylate	1155	1
Sodium molybdate	638	1
Sodium monochromate	1032	3
Sodium nitrate	378	1
Sodium nitrite	161	2
Sodium oxalate	379	1
Sodium oxide	380	1
Sodium pentachlorophenolate	381	3
Sodium pentobarbital	878	3
Sodium perborate	1333	1
Sodium perchlorate	382	1
Sodium peroxide	383	1
Sodium peroxocarbonate	1364	1
Sodium peroxodisulfate	1352	1
Sodium phenolate	384	2
Sodium-2-phenylphenolate, tetrahydrate	1681	1
Sodium phthalate[14]	482	1
Sodium propionate	484	1
Sodium selenate	385	2
Sodium selenite	184	2
Sodium succinate[14]	477	1
Sodium sulphate[14]	286	1
Sodium sulphide[8]	188	2
Sodium sulphite[8]	282	1
Sodium tetraborate	37	1
Sodium thiocyanate	1441	1
Sodium thiosulphate[14]	386	1
Sodium trichloroacetate	730	2
Sorbic acid[14]	1131	1
Strontium chloride, hexahydrate	843	1
Stropesid	962	3
Strophanthidine	889	3
Strophanthidol	959	3
Strophanthin-G	966	3
Strophanthin-K	1038	3
γ-Strophanthol-K	1076	3
Strophanthoside-K	1073	3
Styrene	187	2
Succinic acid[14]	476	1
Sulfotep	687	3
Sulphamidic acid	1266	1
Sulphosuccinic acid ester, sodium salts	667	2

Sulphur, colloidal	753	1
Sulphur dioxide[8]	416	1
Sulphuric acid[8]	182	1
Sulphurous acid	418	1
Sulphur trioxide	417	2
Sunflower oil fatty acid, conjugated	1902	1
Sulprofos	1075	3
Tall oil	497	2
Tall oil fatty acid	692	2
Tallow fatty acid methyl ester, chlorinated (30% chlorine)	1090	3
Tallow, hydrogenated, reaction products with 2-[(2-aminoethyl)amino]ethanol	1894	1
Tallow nitrile	1278	2
Terbufos	621	3
Terbutryne	612	2
Terbutylazine	604	2
Terephthalic acid dimethyl ester	723	1
Tetrabenzylthiuram disulfide	1837	2
Tetrabutylammonium bromide	985	3
Tetrabutyl tin	498	3
1,2,4,5-Tetrachlorobenzene	1311	3
1,1,2,2-Tetrachloroethane	797	3
Tetrachloroethene	287	3
2,3,4,6-Tetrachlorophenol	881	3
Tetraethylammonium bromide	893	3
Tetraethylene glycol diheptanoate	769	1
Tetraethylenepentamine	1621	2
Tetraethyl silicate	450	1
1,1,2,2-Tetrafluoro-1,2-dichloroethane	1114	1
Tetrafluoroboric acid	1300	1
2,2,3,3-Tetrafluoropropanol-1	1513	1
Tetrahydrofuran	190	1
Tetrahydronaphthalene	1194	2
Tetrahydrophthalic acid anhydride	1374	1
Tetrahydrothiophene-1,1-dioxide	1656	1
Tetrakis(2-butoxyethoxy)silane	1850	1
1,1,3,3-Tetramethoxypropane	1570	2
Tetramethylammonium bromide	886	3
1,2,4,5-Tetramethylbenzene	191	1
4-(1,1,3,3-Tetramethylbutyl)phenol	1663	2
Tetramethylpropylenediamine	1614	2
Tetramethyl succinodinitrile	1002	3
Tetraoctyl tin	554	2
Tetraphenyl tin	553	3
Tetrapropylammonium bromide	988	3
Tetrodotoxin	1007	3
Thallium(I) chlorate	422	2
Thallium(I) nitrate	192	2
Thallium(III) nitrate	423	2
Thallium(I) sulphate	555	2
Theobromine	1372	1

Thiabendazole	713	2
Thioacetic acid	949	3
3-Thiocyanatopropyl triethoxysilane	1862	2
Thioglycolic acid	485	1
6-Thioinosine	960	3
Thionyl chloride	1244	1
Thiophene	921	3
Thiophenol	919	3
Thiophosphoryl trichloride	1241	2
Thiosemicarbazide	898	3
Thiourea	786	2
Thymol	1220	2
Tin(II) chloride (Tin dichloride)	495	1
Tin tetrachloride	1267	1
D,L-α-Tocopheryl acetate[14]	1132	1
Tolclofos-methyl	685	3
Toluene	194	2
2,4-Toluenediamine	908	3
4-Toluenesulphonamide	1508	1
2-Toluenesulphonamide	1525	2
4-Toluenesulfonic acid	1127	1
2,4-Toluylene diisocyanate	511	2
2,6-Toluylene diisocyanate	512	2
p-Tolylaldehyde	1582	1
Tolylfluanide	971	3
Triacetonamine	1726	1
Triadimefon	1305	2
Triadimenol	1307	2
Triallyl cyanurate	1569	2
1,2,4-Triazole	1341	2
Triazophos	625	3
Tri-n-butylamine	594	2
Tri-n-butylammonium chloride	611	2
Tributylstannyl benzoate	546	3
Tributylstannyl naphthenate	548	3
Tributyltin acetate	500	3
Tributyltin chloride	501	3
Tributyltin fluoride	545	3
Tributyltin linoleate	549	3
Tributyltin oleate	550	3
Tributyltin oxide	502	3
Tributyltin phosphate	547	3
Trichlorfon	634	3
Trichloroacetic acid	197	2
2,4,6-Trichloroaniline	701	3
1,2,4-Trichlorobenzene	454	3
1,3,5-Trichlorobenzene	715	3
1,2,3-Trichlorobenzene	902	3
1,1,1-Trichloroethane	198	3
1,1,2-Trichloroethane	796	3
Trichloroethylene	199	3

Trichlorofluoromethane	448	2
1,1,1-Trichloro-2-methyl-2-propanol	855	3
2,4,5-Trichlorophenol	455	3
2,4,5-Trichlorophenoxyacetic acid	200	3
1,1,2-Trichlorotrifluoroethane	458	2
Tridecylamine	823	3
Triethanolamine	201	1
Triethanolamine lauryl sulfate	1317	2
Triethanolamine-tris-glycol ether	1425	2
Triethanolammonium chloride	473	1
Triethoxyoctadecylsilane	1778	1
3-Triethoxysilylpropyl trimethylammonium chloride	1434	1
Triethylamine	556	1
Triethylammonium chloride	559	1
Triethylene glycol	202	1
Triethylene glycol monobutyl ether	773	1
Triethylenetetramine	1297	2
Trifluoroacetic acid	729	2
3-Trifluoromethyl aniline	1123	2
Trifluoromethyl benzene	1122	1
3-Trifluoromethyl-phenyl isocyanate	1673	2
Triglycerides (blown or thermically treated)[11]	768	1
Triglycerides (technically untreated, carboxylic acid, saturated, with even-numbered, linear C-chain, number of C-atoms ≤ 6)[11]	761	1
Triglycidyl isocyanurate	994	3
Trihydroxymethoxystearin	1909	1
Triisopropanolamine	1154	1
2,4,6-Trimercaptotriazine[8]	540	2
2,4,6-Trimercaptotriazine, trisodium salt	541	2
3,4,5-Trimethoxybenzoic acid	1628	1
3,4,5-Trimethoxybenzoyl chloride	1792	1
Trimethoxyhexadecylsilane	1847	1
Trimethoxyoctylsilane	1781	1
Trimethoxypropylsilane	1736	1
Trimethoxyvinylsilane	1769	1
Trimethylamine	460	2
Trimethylammonium chloride	461	1
3,3,5-Trimethylcyclohexanol	776	2
2,3,6-Trimethylcyclohexen-1-one	1852	1
2,2,4-Trimethyl-1,2-dihydroquinoline, polymer	1318	2
N,N,N-Trimethyl-N-(4-dodecylbenzyl)-ammonium chloride	1057	3
Trimethylhexamethylenediamine	824	2
2,3,6-Trimethyl hydroquinone	1159	2
2,3,3-Trimethylindol	1403	1
1,3,3-Trimethyl-2-methyleneindol	1382	2
Trimethylolpropane	1211	1
Trimethylolpropane triacrylate	1845	1
2,2,4-Trimethylpentanediol	1671	1
2,4,4-Trimethylpentene	780	2
2,4,4-Trimethylpentyl-2-peroxyneodecanoate[21]	1469	2
2,3,6-Trimethylphenol	1758	1

Trimethylsilyl cyanide	1829	3
Trioctylamine	1400	2
Triphenylphosphine	1696	1
Triphenylsulphonium chloride	1006	3
Triphenyltin acetate	503	3
Triphenyltin chloride	504	3
Triphenyltin fluoride	505	3
Triphenyltin hydroxide	506	3
Tri-n-propylamine	1571	2
Tripropylene glycol	779	1
Tripropylene glycol diacrylate	1868	2
Tris(1,3-dichloroisopropyl)phosphate	1840	2
Trisodium phosphate	172	1
Tri-tert.butyltin oxide	854	3
1,2,4-Trivinylcyclohexane	1776	2
Tropine	925	3
Tropinone	953	3
Trospium chloride	1037	3
Tubocurarine dichloride, pentahydrate	1025	3
Tunicamycin	1042	3
Turbine fuels, classified carcinogenic (R 45)	1938	3
Turbine fuels, not classified as carcinogenic (R 45)	139	2
Ultramarine blue[14]	1426	1
Uranylacetate dihydrate	1023	3
Urea	118	1
Valinomycin	989	3
Vanadium(IV) oxide sulfate	856	3
Vanadium pentoxide	654	2
Vinyl chloride	462	2
Vinyl cyclohexylether	1756	1
Vinyl ethylether	1606	1
Vinyl isobutylether	1146	1
N-Vinyl-N-methyl acetamide	1783	1
Vinyl propionate	1587	1
Vinyl pyrrolidone	1141	3
Vossen-Blue	1843	1
Waste oils[9]	438	3
White oils according to German Pharmacopoeia (DAB)	434	1
2,4-Xylidine-6-sulfonic acid, sodium salt	1892	2
Xylene (all isomers)	206	2
Zinc ammonium nitrate	424	1
Zinc arsenate	425	3
Zinc arsenite	426	3
Zinc chlorate	427	2
Zinc chloride	207	1
Zinc cyanide	428	3
Zinc-dialkyl(C3 - C10)-dithiophosphate[35]	1948	2
Zinc-di(alkyl(C7 - C12)-phenyl)-dithiophosphate[35]	1949	2
Zinc nitrate	429	1
Zinc peroxide	430	1
Zinc phosphide	431	2

Zinc selenite	1839	2
Zinc sulphate	432	1

Footnotes:

[8] Proper and professional use of this substance for drinking water treatment, rehabilitation of surface waters or waste water treatment is not restricted by this classifaction.

[9] This classification generally refers to waste oils pursuant to Article 5a(1) of the Waste Avoidance and Waste Management Act (AbfG) or the Technical Rules for Flammable Liquids (TRbF 200), No. 1.3, paragraph 4. In case the composition of the waste oils is known either by their known origin and use or by means of analytical methods (e.g. used insulating or hydraulic oils, but not used motor oils) they may have to be assigned to a water hazard class lower than WGK 3, in accordance with the provisions set forth in Annex 4 (classification of mixtures in water hazard classes).

[10] This classification refers to pure, non-denatured alcohol; denatured alcohol must be classified in accordance with the provisions set forth in Annex 4 (classification of mixtures in water hazard classes).

[11] This classification refers to the substance without additives. Where additives are added, the substance may have to be classified in higher water hazard classes, in accordance with the provisions set forth in Annex 4 (classification of mixtures in water hazard classes).

[12] See attached supplementary definition of polymer dispersions (Index Number 662).

[13] See attached supplementary definition of silicon compounds (Index Numbers 542, 543, 557, 566, 567, 568).

[14] In the Administrative Regulation on Substances Hazardous to Water (VwVwS) of 18 April 1996, this substance was classified in Water Hazard Class 0 (in general not hazardous to water).

[15] This classification refers to an aqueous preparation.

[16] This classification refers to a preparation with water and ethylene glycol.

[17] This classification refers to a preparation with dimethyl phthalate.

[19] If the water hazard classes of the additives to the pure lubricating oil are known and if classification pursuant to Annex 4 (classification of mixtures in water hazard classes) results in a different WGK, that WGK shall prevail.

[21] Preparation with isododecane.

[23] Preparation with triethyl phosphate.

[25] See attached supplementary definition of colouring preparations (Index Number 1492).

[26] This classification refers to a preparation with diacetone alcohol.

[27] See attached supplementary definition of polyester resins (Index Number 1950).

[34] Notwithstanding Annex 4 (classification of mixtures in water hazard classes), mixtures containing PCB underlie the following classification rules: > 2000 ppm: WGK 3; > 50 up to 2000 ppm: WGK 2 (unless the presence of any other components leads to a classification in WGK 3). Less than 50 ppm PCB can be disregarded.

[35] This classification refers to a mixture containing highly refined mineral oil.

[37] See attached supplementary definition of protein foaming agents (Index Number 1953).

[38] See attached supplementary definition of multi-purpose foaming agents (Index Number 1954).

Supplementary definitions regarding the footnotes

Footnote 12: Outline formulation for polymer dispersions of WGK 1 (Index Number 662)

Definition

Polymer dispersions (also referred to as "latex") within this provision are polymers that occur as finely dispersed particles in aqueous phase and where that dispersion is stabilised by tensides or protective colloids. They are polymerised as primary dispersions in accordance with DIN 55947 or are produced as natural dispersions (natural caoutchouc latex).

Already due to their physico-chemical properties, polymer dispersions are in general hazardous to water within the meaning of Article 19g of the Federal Water Act (WHG).

Polymer dispersions that contain substances in concentrations higher than those specified in the positive lists below or polymer dispersions with components that are not included in the positive lists at all must be examined on a case-by-case basis and assessed in accordance with Annex 4 of the VwVwS. This does not apply to those substances which are in general not hazardous to water within the meaning of Article 19g WHG or have already been classified in WGK 1. In that case, the substance-based concentration limits may be exceeded, or a substance currently not stated in the positive list may be contained. However, the relevant requirements with regard to total contents, e.g. for emulsifiers, protective colloids, etc., must still be met.

In general, non-carcinogenic substances with a percentage by mass of less than 0.2% (in relation to the total for the substances not contained in the positive lists) are not taken into account.

1. Starting monomers for polymer dispersions

The residual content of carcinogenic monomers in polymer dispersions must not exceed 0.1% by mass, unless even lower percentages by mass are classified in the Hazardous Substances Ordinance (GefStoffV) as carcinogenic. Within this ordinance, "carcinogenic" means all substances that are classified R 45 ("may cause cancer") under the Hazardous Substances Ordinance (GefStoffV). In addition, carcionogenic substances are those that are declared as carcinogenic, category 1 or 2, according to Annex I of the Ordinance in accordance with Article 52 (3) of the Hazardous Substances Ordinance. Substances that have carcinogenic effect only by inhalation are not deemed to be carcinogenic for the purposes of this provisions. In addition, the specifications of the positive list pursuant to section 1.1 for monomers which may only contain less than 50 ppm must be taken into account.

1.1 Admissible residual contents of unconverted monomers at a starting concentration > 2%

Of the following monomers (positive list), more than 2% (percentage by mass of the polymers) may be used to produce the polymer dispersions. Unless the quantitative restriction pursuant to section 1 on carcinogenic monomers are applicable, the following restrictions apply to the residual content of unconverted monomers in the polymer dispersion:

	< 50 ppm	< 5000 ppm
Acrylamide	x	
Acrylamido-2-methylpropanesulfonic acid (AMPS)		x

Acrylic acid		x
Acrylic acid alkyl ester (C_1-C_{18})		x
Acrylic acid glycidyl ester		x
Acrylonitrile	x	
Alkyl-diol diacrylates	x	
Alkyl-diol dimethacrylates		x
Alkyl-diol-monoacrylates		x
Alkyl-diol-monomethacrylates		x
Allyl alcohol ester		x
Butadiene	x	
Chloroprene	x	
Crotonic acid		x
Crotonic acid alkyl ester (C_1-C_4)		x
2,3-Dichlorobutadiene		x
Dimethylamino-alkyl-(C_2-C_5)-acrylate		x
Dimethylamino-alkyl-(C_2-C_5)-methacrylate		x
Divinylbenzene		x
Ethylene		x
Fumaric acid		x
Fumaric acid alkyl ester (C_1-C_8)		x
Isoprene		x
Itakonic acid (Methylene succinic acid)		x
Maleic acid		x
Maleic acid dialkyl ester (C_1-C_8)		x
Maleic acid monoalkyl ester (C_1-C_8)		x
Methacrylamide		x
Methacrylic acid		x
Methacrylic acid alkyl ester (C_1-C_{18})		x
Methacrylic acid glycidyl ester		x
Methallyl sulfonic acid		x
Methylol acrylamide		x
Methylol acrylamide ether (C_1-C_4)		x
Methylol methacrylamide		x
Methylol methacrylamide ether (C_1-C_4)		x
2-Methylstyrene		x
Styrene		x
Styrenesulfonic acid		x
Vinyl ester (C_1-C_{18})		x
Vinyl alkyl-(C_1-C_4) ether		x
Vinyl chloride	x	
Vinylidene chloride	x	
Vinylimidazole		x
2-Vinylpyridine		x
Vinyl pyrrolidone		x
Vinylsulfonic acid		x

1.2 Admissible residual contents of unconverted monomers at a starting concentration < 2%

Where less than 2% of monomer (percentage by mass of the polymers) are used to produce the polymer dispersion, no positive list is established.
However, the following restrictions apply:

For carcinogenic monomers pursuant to section 1, the residual contents of unconverted monomers specified therein must be taken into account.
Residual content of other unconverted monomers: < 5000 ppm.

2. Initiators

The following positive list and the following restrictions apply:

- Organic peroxides [admissible residual content of peroxide in the polymer dispersion (determined or calculated as H_2O_2)]

Benzoyl peroxide	
tert. Butyl hydroperoxide	
tert. Butyl perpivalate	
tert. Butyl peroctoate	
1,4-Diisopropylbenzene monohydroperoxide	
Total	< 50 mg/l

- Anorganic peroxides [admissible residual content of peroxide in the polymer dispersion (determined or calculated as H_2O_2)]

Peroxodisulfate, Na, K; NH_4 salts	< 50 mg/l
Hydrogen peroxide	< 1 000 mg/l

- Azo compounds [admissible content of starting substance in the polymer dispersion]

4,4'-Azobis-4-cyanovalerianic acid	max. 0.2 %

3. Protective colloids

The following positive list and the following restrictions apply [admissible content of starting substance in the polymer dispersion]:

Cellulose derivatives	≤ 3 %
Starch	≤ 3 %
Dextrin	≤ 3 %
Polyacrylic acid (and copolymers) salts	≤ 3 %
Poly-N-vinyl methyl acetamide	≤ 3 %
Polyvinyl alcohol	≤ 8 %
Vinyl pyrrolidone copolymerisate	≤ 3 %
Total protective colloids	≤ 8 %

4. Emulsifier

The following positive list and the following restrictions apply [admissible content of starting substance in the polymer dispersion]:

Ethylene oxide/Propylene oxide polymerisate, including sulfated	≤ 3.0 %
Alkyl(C_{10}-C_{20}) aryl sulfonate	≤ 3.0 %
Alkyl aryl oxethylate	≤ 3.0 %
Alkyl aryl oxethylate, including sulfated	≤ 2.5 %
Alkyl sulfates	≤ 3.0 %
Alkyl oxethylates	≤ 3.0 %
Hydroxyfatty acid, C_{12}-C_{20}, including sulfated	≤ 2.0 %
Alkyl sulfonate	≤ 2.5 %
Dodecyl diphenyl ether disulfonate	≤ 1.5 %
Alkaline salts of mono- and diesters of sulfosuccinic acid	≤ 2.0 %
Alkaline salts and sorbitan esters of linear aliphatic carbonic acids (C_{12}-C_{20})	≤ 4.0 %

o-Phenyl phenolate, sodium salt	≤ 0.5 %
Resin acids, hydogenated, dehydrogenated or disproportionated, and alkaline salts	≤ 1.5 %
Naphthalenesulfonic acid condensation products or naphthalenesulfonic acid/formaldehyde condensation products	≤ 1.0 %
C4-Alkyl naphthalene sulfonate	≤ 1.0 %
Phosphoric acid polyglycol ester	≤ 1.0 %
Amphotensid (alkyl imidazoline derivative)	≤ 1.0 %
Total emulsifiers	≤ 4.0 %

5. Film-forming agents

The following positive list and the following restrictions apply [admissible content of starting substance in the polymer dispersion]:

5.1 Solvents

Acetone	≤ 3 %
Butyl diglycol acetate	≤ 3 %
Cyclohexane	≤ 3 %
Cetyl alcohol	≤ 3 %
Acetic acid ethyl ester	≤ 3 %
Ethanol	≤ 3 %
Glycolic acid butyl ester	≤ 3 %
Hexylene glycol	≤ 3 %
Isobutylester mixture of succinic acid glutaric acid adipic acid	≤ 3 %
Isooctanediol isobutyric acid ester	≤ 3 %
Hydrocarbon mixtures	≤ 3 %
(alkanes, alkenes, cycloalkanes, cycloalkenes)	≤ 3 %
Methanol	≤ 3 %
Total solvents	≤ 5 %

5.2 Plasticisers

The same restrictions apply as outlined under No. 6.

6. Plasticisers

The following positive list and the following restrictions apply [admissible content of starting substance in the polymer dispersion]:

Dioctyl phthalate	≤ 8 %
Dibutyl phthalate	≤ 5 %
Dimethyl phthalate	≤ 3 %
Dibutoxyglycol phthalate	≤ 3 %
Trichloroethyl phosphate	≤ 5 %
Total	≤ 12 %

7. Microbicides

The following positive list and the following restrictions apply:

7.1 Microbicide agents [admissible content of active ingredient in the polymer dispersion]:

1,2-Benzisothiazolin-3-one (CAS No. 2634-33-5)	≤ 0.1%
2-Bromo-2-nitropropanediol-1,3	≤ 0.1%
5-Chloro-2-methyl-4-isothiazolin-3-one (CAS No. 26172-55-4)	≤ 0.1%
2-Methyl-4-isothiazolin-3-one (CAS No. 2682-20-4)	≤ 0.1%
1,6-Dihydroxy-2,5-dioxohexane	≤ 0.1%
N,N-Dihydroxy-methylene-urea	≤ 0.1%
Tetramethylol glycoluryl	≤ 0.1%
Chloroacetamide	≤ 0.1%
N-Methylol chloroacetamide	≤ 0.1%
Mixture of hexahydrotriazine and oxazolidine	≤ 0.1%
Total microbicide agents	≤ 0.1%
Formaldehyde	≤ 0.2%

7.2 Conditioning agents [admissible content of auxiliary agent in the polymer dispersion]:

Propylene glycol	≤ 0.5 %
Dipropylene glycol	≤ 0.5 %
1,2-Propanediol	≤ 0.5 %
Total conditioning agents	≤ 0.5 %

8. Defoaming agents

The following positive list and the following restrictions apply [admissible content of starting substance in the polymer dispersion]:

White oils	≤ 2 %
Tributyl phosphate	≤ 2 %
Silicones A	≤ 2 %
Silicones B	≤ 2 %
N-Dibutyl oleic acid amide	≤ 2 %
Copolymers of propene oxide with 10% ethene oxide, esterified with natural fatty acids	≤ 2 %
Total defoaming agents	≤ 2 %

9. Stabilisers, neutralisers, complex formers

The following positive list and the following restrictions apply [admissible content of auxiliary agent in the polymer dispersion]:

Alkali, ammonium and calcium hydroxides	≤ 2.0 %
Inorganic acids and their alkali, ammonium and calcium salts:	≤ 2.0 %

- Sulfuric acid - Sulfurous acid - Carbonic acid - Phosphoric acid (and other phosphates) - Nitric acid - Hydrochloric acid - Thiosulfuric acid	
Organic acids and their alkali, ammonium and calcium salts: - Formic acid - Ascorbic acid - Citric acid - Acetic acid - Hydroxymethane sulfinic acid	≤ 2.0 %
Iron(II) sulfate	≤ 2.0 %
Ethylenediamine tetraacetic acid and sodium salts	≤ 1.0 %
Nitrilotriacetic acid and sodium salts	≤ 2.0 %
Alkali-alkyl-dithiocarbamates	< 0.2 %
N,N-Diethylhydroxylamine	≤ 1.0 %
Total auxiliary agents	≤ 2.0 %
Urea	≤ 1.0 %
Ethylene urea	≤ 1.0 %

10. Antioxidants

The following positive list and the following restrictions apply [admissible content of starting substance in the polymer dispersion]:

	CAS No.	
Butylated reaction product of p-cresol and dicyclopentadiene	68610-51-5	≤ 1.0 %
Isobutylated octylphenol	68610-06-0	≤ 1.0 %
Bisphenols:		
2,2'-Methylene-bis-(4-methyl-6- tert.-butylphenol)	119-47-1	≤ 1.0 %
2,2'-Methylene-bis-(4-methyl-6-cyclohexylphenol)	4066-02-8	≤ 1.0 %
2,2'-Isobutylidene-bis-(4,6-dimethylphenol)	33145-10-7	≤ 1.0 %
4,4'-Isopropylidene-bis-(2-tert.-butylphenol)	79-96-9	≤ 1.0 %
Bisphenols/Trisphenols:		
2,2`-Methylene-bis-(4-methyl-6-nonylphenol)	7786-17-6	< 0.2 %
Formaldehyde polymer with 4-methyl-2-nonylphenol and 4-methylphenol	63494-85-9	< 0.2 %
Styrenated diphenylamine	68442-68-2	< 0.2 %
Diethyleneglycol-bis-(3-tert.butyl-4-hydroxy-5-methyl-phenyl propionic acid ester	36443-68-2	≤ 1.0 %
Butylated hydroxytoluene (BHT)	128-37-0	≤ 1.0 %
Butylated hydroxyanisol (BHA)	121-00-6	≤ 1.0 %
2,4-Bis-(n-octylthio)-6-(4-hydroxy-3,5-di.tert.butylanilino)-1,3,5-triazine	991-84-4	≤ 1.0 %
3-(3,5-Di-tert.butyl-4-hydroxy-phenyl-)propionic acid octadecyl ester	2082-79-3	≤ 1.0 %
Thiodipropionic acid-bis-(dodecyl ester)	123-28-4	≤ 1.0 %
Dimethylphenol, reaction product with tetrapropylene and styrene	91672-34-3	≤ 1.0 %
Total antioxidants		≤ 1.0 %

Footnote 13: Definition of silicon compounds (Index Number 542, 543, 557, 566, 567, 568)

- Silicones A (Index Number 542)
  Linear, branched or cyclic organopolysiloxanes with unsubstituted alkyl(C_1-C_{32}), alkenyl and/or phenyl groups at the silicon atom, if liquid.

- Silicones B (Index Number 543)
  Organopolysiloxanes like Silicones A, but with additional polyalkoxy- and/or polyalkoxyalkyl groups and/or hydrogen atoms and/or hydroxyl groups at the silicon atom.

- Silanes
  Gaseous silanes: (Index Number 567); solid and liquid silanes: (Index Number 566)
  Monosilanes and silanes with at least one hydrogen atom at the silicon atom and with unsubstituted alkyl, alkenyl and/or phenyl groups.

- Silanols (Index Number 568)
  Silanes and siloxanes with hydroxyl groups at the silicon atom which in addition may contain unsubstituted alkyl, alkenyl and/or phenyl groups.

- Chlorosilanes (Index Number 557)
  Silanes and siloxanes with chlorinated substituents on the silicon atom which in addition may contain unsubstituted alkyl, alkenyl or phenyl groups and/or hydrogen atoms.

Footnote 25: Definition of colouring preparations (Index Number 1492):

1. Colouring agent is the generic term used for all colouring substances. Organic colouring preparations are mixtures of one or more organic colouring agents and substances generated during the manufacturing process or processing agents added during subsequent processing operations, that are directly placed on the market in that form. If, in another processing step, other substances are added to this colouring preparation to form a new product (e.g. lacquers, printers' inks, paints), this group classification is no longer applicable. In such cases, Annex 4 of this Regulation will apply, and the colouring preparation must be taken into account in the calculation accordingly as a component of the mixture.

2. Organic colouring preparations will (notwithstanding their general group classification in WGK 2) be classified in WGK 1 if they

   a) contain colouring agents the solubility of which in water does not exceed 10 mg/l, and

   b) do not show any toxic effects on aquatic organisms within the range of their water solubility (test results for two organisms [fish (LC_{50}, preferably golden orfe), bacteria (EC_{10} (otherwise EC_{50}), preferably *Pseudomonas putida*), algae (EC_{10} (otherwise EC_{50}), preferably *Scenedesmus subspicatus*) or daphnia (EC_{50}, preferably *Daphnia magna*)) must be available; this requirement is considered complied with, if the aquatic toxicity in the preparation has been determined to be greater than 100 mg/l] and

   c) acute oral toxicities to mammals (preferably rats) is greater than 2000 mg/kg body weight and

   d) do not show any properties that require a labelling with risk phrases R 39, 40, 45, 46, 60 or 61 (in the case of azo dyes, it must be ruled out that a carcinogenic effect may

occur from the amines formed during the reductive cleavage, cf. Part III. of the MAK list) and

e) do not contain more than 20 ppm cadmium, 4 ppm mercury, 100 ppm chromium(VI), 100 ppm silver, 50 ppm antimony or 100 ppm lead.

The person responsible for the classification must verify compliance with the requirements set out in a), b) and c) above by relevant test data. In case of non-water-soluble pigments (solubility < 1 mg/l), proof with regard to b) will not be required.

3. Organic colouring preparations will (notwithstanding their general group classification in WGK 2) be classified in WGK 3 if they

   a) show acute oral toxicities to mammals (preferably rats) of 200 mg/kg body weight or less or

   b) show toxic effects at concentraion of 10 mg/l or less on one of the aquatic organisms referred to under 2.b) above or

   c) show any properties that require a labelling with risk phrases R 39, 45, 46, 60 or 61.

   The person responsible for the classification must classify a preparation in WGK 3 when he has received relevant information regarding a) to c) above.

   The inhibitory effects on algae may be disregarded if it can be ensured by the setup of the experiment that the detected effect is solely due to absorption of light by the colouring agent, rather than to any toxic effect.

4. If the procedure described above does not lead to adequate classifications of colouring preparations, these preparations are determined in more detail in accordance with Annex 1 or 2.

Footnote 27: Definition of polyester resins (Index Number 1950)

Polyester resin is a generic term used for polycondensation products of carbonic acids and polyvalent alcohols used as starting substances. Starting substances are substances which are chemically bound to the polymer after the condensation reaction.

The group classification of Polyester resins include the following subgroups:

- Polyester resins: polycondensation products of one-, two- or polyvalent carbonic acids and polyvalent alcohols.
- Alkyde resins: Polyester resins as above, but chemically modified with natural fats and oils and/or synthetic fatty acids (according to DIN 53183).
- Modified polyester resins: polyester resins as above, but chemically modified with carbonates or diisocyanates.

Polyester resins [solid (unless they do not belong to classification No. 766 ("Plastics, if solid, non-dispergated, not water-soluble and inert")) and liquid] are classified in Water Hazard Class 1 if the following conditions are met:

a) The starting substances have been classified as not hazardous to water as defined in the VwVwS or been classified in WGK 1. The percentage by mass of starting substances

classified in WGK 2 is less than 5%, the percentage by mass of starting substances classified in WGK 3 is less than 0.2%. Notwithstanding this requirement, a content of more than 5% of starting substances classified in WGK 2 will be deemed admissible if proof is provided that after one-week of hydrolysis, less than 5% (in relation to the total mass of the polymer) of the substances classified in WGK 2 are released. (Procedure for determining the hydrolysis: 10 g of polyester resin are stirred into 1 l of destilled water at 25 ± 2 °C for a week, and the content of starting substances in aqueous phase is determined using a suitable method. Solid polyester resins are applied in ground form.)

b) The properties of the polyester resins require no classification in risk phrases R 39, R 40, R 45, R 46, R 60 and R 61.

Polyester resins that do not meet these conditions are not covered by this classification.

If any further substances are added to the polyester resin (particularly additives, neutralising agents and solvents), the water hazard class is determined in accordance with the provisions of Annex 4 of this Regulation.

Footnotes 37 and 38: Outline formulation for protein foaming agents and multi-purpose foaming agents (Index Numbers 1953 and 1954)

Definition

Foaming agents within the meaning of this Regulation are liquid additives to fire-fighting water to produce extinguishing foam. Their scope of application and composition, the requirements for the foaming agents and their labelling are laid down in DIN 14272. In Germany foaming agents are subject to approval requirements[1]. The approved formulations are registered by the Official Examination Centres for Fire Extinguishing Agents and Fire Extinguishers in Münster, North Rhine-Westphalia, or Freiberg, Saxony. Within the approval procedure five groups are distinguished:

- Protein foams
- Fluoroprotein foams
- Multi-purpose foams
- Aqueous film forming foams
- Alcohol-resistant foams.

These outline formulations are designed to classify the protein foams and multi-purpose foams in water hazard classes. The positive lists shown below form the basis for this classification. For preparations that do not correspond to these outline formulations, the water hazard class is determined in accordance with the provisions of Annex 4 of this Regulation.

1.1 Protein foaming agents (Index Number 1953, WGK 1)

Protein foaming agents are foaming agents consisting of water-soluble protein degradation products.

---

[1] Ordinance on Fire Extinguishing Agents and Fire Extinguishers of 28 December 1984 (GV.NW 1985, p. 44) of the federal state of North Rhine-Westphalia and the relevant ordinances of the other federal states of the Federal Republic of Germany.

Outline formulation for protein foaming agents according to DIN 14272 Part 1 (No. 2.2)	
Formulation constituent	Percentage by mass (m/m)
Foaming agents	< = 30
Stabilisers	< 3
Anti-freezers	< = 30
Solubilisers	< 10
Preservatives	< 1

Formulation constituents of protein foaming agents

Foaming agents:	Index Number	WGK
Protein hydrolysate	1431	1
Lignin sulfonic acid, sodium salt	1320	1
Lignin sulfonic acid, ammonium and magnesium salt (analogue to 1320)		1
Stabilisers (complexing agent):		
Iron(II) sulfate	514	1
Zinc chloride	207	1
Anti-freezers:		
Ethylene glycol	105	0
1,2-Propylene glycol	280	0
Glycerine	116	0
n-Propanol	176	1
Isopropanol	135	1
Urea	118	1
Magnesium chloride	259	0
Calcium chloride	220	0
Preservatives:		
4-Chloro-3-methylphenol	231	2
Solubilisers:		
Ethylene glycol mono-n-butyl ether	47	1
Diethylene glycol mono-n-butyl ether	46	1
2-Methyl-2,4-pentanediol	5025	1
Polyethylene glycol	279	1
Butoxypolyethylene/propylene glycol	563	1

1.2 Multi-purpose foaming agents (Index Number 1954, WGK 2)

Multi-purpose foaming agents are foaming agents for producing extinguishing foams for all applications. They consist of surface active substances.

Frame formulation for multi-purpose foaming agents	

according to DIN 14272 Part 2	
Formulation constituent	Percentage by mass (m/m)
Foaming agents	< = 30
Stabilisers	< 5
Anti-freezers + solubilisers	< = 45
Preservatives	< 0,2

Formulation constituents for multi-purpose foaming agents

Foaming agents:	Index Number	WGK
Alkylbenzene sulfonates (C10 - C14), linear	449	2
sec. Alkane(C13 - C17) sulfonates	663	2
Sodiumalkyl(C8 - C20) sulphates	664	2
α-Olefin sulfonates C14 - C18	666	2
Sulfosuccinic acid ester, sodium salts	667	2
α-Methyl ester sulfonates C12 - C18, sodium salts	668	2
Alcohol ethoxylates	670	2
Fatty alcohol EO/PO adducts	672	2
Alkyl polyglycosides (with 1-2 glucose units; alkyl groups: C8-C16)	1363	1
Sodiumalkyl(C8 - 20) sulfates	664	2
NH_4 lauryl sulfates (analogue to 664)		2
TEA lauryl sulfates (analogue to 664)		2
Imidazolinium salt	675	2
Stabilisers:		
Fatty alcohols, saturated, with even-numbered C-chain, number of C-atoms ≥12 and terminal OH group	656	0
Anti-freezers:		
Ethylene gylcol	105	0
1,2-Propylene glycol	280	0
Glycerine	116	0
n-Propanol	176	1
Isopropanol	135	1
Urea	118	1
Preservatives:		
Formaldehyde	112	2
Sodium propionate	484	1
Salicylic acid	281	1
Solubilisers:		
Ethylene glycol mono-n-butyl ether	47	1
Diethylene glycol mono-n-butyl ether	46	1
2-Methyl-2,4-pentanediol	5025	1

Annex 3

Classification of substances hazardous to water, on the basis of R-phrases

1. R-phrase classifications and evaluation criteria

The basis for substance classification is classification into R-phrases pursuant to Article 4a (1) through (4) of the Ordinance on Hazardous Substances (Gefahrstoffverordnung - GefStoffV) of 26 October 1993 (Federal Law Gazette I p. 1782, cor. p. 2049) in its applicable version. The first sentence of this paragraph also applies mutatis mutandis for all other substances that must be classified in water hazard classes.

Following classification, the R-phrases are assigned evaluation points as follows:

R-phrase	Points	Remarks
R 21	1	is not additively assigned to R 22, R 20/22, R 25, R 23/25, R 28 or R 26/28
R 22	1	is not additively assigned to R 24, R 23/24, R 27 or R 26/27
R 24	3	is not additively assigned to R 25, R 23/25, R 28 or R 26/28
R 25	3	is not additively assigned to R 27 or R 26/27
R 27	5	is not additively assigned to R 28 or R 26/28
R 28	5	
R 29	2	
R 33	2	
R 40	2	
R 45	9	
R 46	9	is not additively assigned to R 45
R 50	6	
R 52	3	
R 53	3	
R 60	4	
R 61	4	is not additively assigned to R 60
R 62	2	is not additively assigned to R 61
R 63	2	is not additively assigned to R 60 and R 62
R 65	1	is not additively assigned to R 21 and R 22
R 15/29	2	
R 20/21	1	is not additively assigned to R 22, R 25 or R 28
R 20/22	1	is not additively assigned to R 24 or R 27
R 20/21/22	1	

R 21/22	1	
R 23/24	3	is not additively assigned to R 25 or R 28
R 23/25	3	is not additively assigned to R 27
R 23/24/25	3	
R 24/25	3	
R 26/27	5	is not additively assigned to R 28
R 26/28	5	
R 26/27/28	5	
R 27/28	5	
R 39/24	4	
R 39/25	4	
R 39/23/24	4	
R 39/23/25	4	
R 39/24/25	4	
R 39/23/24/25	4	
R 39/27	6	
R 39/28	6	
R 39/26/27	6	
R 39/26/28	6	
R 39/27/28	6	
R 39/26/27/28	6	
R 40/21	2	
R 40/22	2	
R 40/20/21	2	
R 40/20/22	2	
R 40/21/22	2	
R 40/20/21/22	2	
R 48/21	2	
R 48/22	2	
R 48/20/21	2	
R 48/20/22	2	
R 48/21/22	2	
R 48/20/21/22	2	
R 48/24	4	
R 48/25	4	
R 48/23/24	4	
R 48/23/25	4	
R 48/24/25	4	
R 48/23/24/25	4	
R 50/53	8	
R 51/53	6	
R 52/53	4	

2. Default values (Vorgabewerte)

If, for a given substance, no proof of testing for certain toxic characteristics and for certain environmental impacts is available, and if the substance has not been classified into one of the R-phrases listed below, in Annex 1 of Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances, in its applicable version, the substance shall be assigned the following point values as default values:

a) The default value shall be 5 points, if a substance, in Annex 1 of Directive 67/548/EEC, has not been classified into the R-phrases 21, 22, 24, 25, 27 or 28, either alone or in combination, and if no proof is available of testing for acute toxicity for a rodent species upon swallowing and in contact with skin.

b) The default value shall be 6 points, if a substance, in Annex 1 of Directive 67/548/EEC, has not been classified into the R-phrases 50, 50/53, 51/53 or 52/53, and if no proof is available of testing for acute toxicity for a fish species and a water-flea species, and for inhibition of algae growth. Notwithstanding the first sentence of this paragraph, the default value shall be 8 points, if also

- testing for ready biodegradability has shown that the substance is not readily biodegradable or
- the substance is potentially bioaccumulative or
- no proof of testing for biodegradability is available or
- no proof of testing for potential bioaccumulation is available.

c) The default value shall be 3 points, if a substance in Annex 1 of Directive 67/548/EEC has not been classified into the R-phrases 50/53, 51/53, 52/53 or 53 and

- no proof of testing for biodegradability or for potential bioaccumulation is available or
- no proof of testing for biodegradability is available and the substance is potentially bioaccumulative or
- no proof of testing for potential bioaccumulation is available and the substance is not readily or inherently biodegradable.

Notwithstanding the first sentence, the default value shall be 4 points, if no proof of testing for biodegradability is available and a test is known whereby the acute toxicity for a fish species (96 h LC_{50}) or a water-flea species (48 h EC_{50}) or for inhibition of algae growth (72 h IC_{50}) is more than 10 mg/l and not more than 100 mg/l.

Notwithstanding the first sentence, the default value shall be 6 points, if no proof of testing for ready biodegradability or for potential bioaccumulation is available and a test is known whereby the acute toxicity for a fish species (96 h LC_{50}) or a water-flea species (48 h EC_{50}) or for inhibition of algae growth (72 h IC_{50}) is more than 1 mg/l and not more than 10 mg/l.

Notwithstanding the first sentence, the default value shall be 2 points, if the substance is classified, pursuant to Number 1, in R 50 and if no proof of testing for ready biodegradability or for potential bioaccumulation is available.

3. Evaluation basis

The basis for classification of substances hazardous to water shall be scientific testing of the relevant substance in accordance with the specifications of Annex V in conjunction with Annexes VII (A) through (D) and VIII of Directive 67/548/EEC. In accordance with Article 20 (4) Chemicals Act (ChemG), in justified individual cases one or more tests may be eliminated.

Substances in which the log octanol/water-distribution coefficient (log Pow) is not less than 3.0 shall be considered potentially bioaccumulative if the experimentally determined bioconcentration factor (BCF) is not less than 100. A calculated log Pow may thus be used as a basis for evaluating the bioaccumulation behaviour (in keeping with Chapter 4 of the Technical Documents in Support of the Commission Directive 93/67/EEC on Risk Assessment of New Notified Substances and the Commission Regulation 1488/94 on Risk Assessment of Existing Substances, Ispra 1996).

Ready biodegradability shall be determined using a procedure named in Directive OECD 301 or another equivalent, generally accepted procedure.

Inherent biodegradability shall be determined in accordance with Directive OECD 302, Part B or C, or another equivalent, generally accepted procedure.

4. Classification in water hazard classes

4.1 Each substance is assigned a total number of evaluation points, formed as the sum of points determined pursuant to Numbers 1 and 2.

4.2 The point total determined in accordance with Number 4.1 shall be assigned to water hazard classes in accordance with the following scheme:

0 through 4 points: WGK 1,
5 through 8 points: WGK 2,
9 and more points: WGK 3.

5. Substances non-hazardous to water

Notwithstanding Number 4.2, substances are non-hazardous to water pursuant to Article 19g (5) second sentence WHG, if th

a) The point total pursuant to Number 4.1 is 0.

b) The substance's solubility in water, at 20 degrees Celsius, is less than 100 mg/l, or, if the substance is a liquid under normal conditions, is less than 10 mg/l.

c) No test is known whereby the acute toxicity for a fish species (96 h LC_{50}) or a water-flea species (48 h EC_{50}) or for inhibition of algae growth (72 h IC_{50}) lies below the solubility threshold. Tests have been carried out with two of the aforementioned organisms.

d) An organic substance that is a liquid under normal conditions is readily biodegradable.

Annex 4

Classification of mixtures in water hazard classes

1. Scope of application

This Annex describes the manner in which mixtures are to be classified in water hazard classes.

2. Definitions

Carcinogenic substances within the meaning of this Annex are all substances that have been classified, pursuant to the Ordinance on Hazardous Substances, into R-phrase 45 ("may cause cancer"). Also carcinogenic within the meaning of this Annex are substances that, pursuant to Article 52 (3) Ordinance on Hazardous Substances, are publicly listed as carcinogenic, Category 1 or 2, pursuant to Annex 1 Ordinance on Hazardous Substances. Substances that cause cancer only when inhaled are not carcinogenic within the meaning of this Annex.

Components within the meaning of this Annex are the substances contained in a relevant mixture. Components whose identity is unknown shall be treated like WGK 3 substances.

In determination of the WGK of mixtures in this Annex, non-carcinogenic substance shares are ignored if they have a percentage by mass of less than 0.2 %, based on the individual substance in question.

Similarly, the relevant threshold for carcinogenic substances, in this Annex, is a percentage by mass of less than 0.1%, based on the individual substance in question. Where other percentages by mass are used as the criteria for classification of mixtures as carcinogenic (R 45) pursuant to the Ordinance on Hazardous Substances, then these other percentages shall apply.

Where WGK 1 is derived, added carcinogenic components are exempted from this consideration threshold.

3. Derivation of water hazard class on the basis of components

3.1 Derivation of water hazard class 3

Mixtures shall be classified in WGK 3 if one of the following prerequisites is fulfilled:

a) The mixture contains carcinogenic components classified in WGK 3.

b) The mixture contains WGK 3 components with a percentage by mass of 3 % or more, based on the sum.

3.2 Derivation of water hazard class 2

Mixtures shall be classified in WGK 2 if one of the following prerequisites is fulfilled:

a) The mixture contains carcinogenic components classified in WGK 2.

b) The mixture contains WGK 2 components with a percentage by mass of 5% or more, based on the sum.

c) The mixture contains non-carcinogenic components classified in WGK 3 and with a percentage by mass of 0.2% or more, based on the individual substance, but less than 3 %, based on the sum.

3.3 Derivation of water hazard class 1

Mixtures shall be classified in WGK 1 if one of the following prerequisites is fulfilled:

a) The mixture contains added carcinogenic components in amounts below the consideration threshold mentioned in Number 2.

b) The mixture contains non-carcinogenic components classified in WGK 2 and with a percentage by mass of 0.2% or more, based on the individual substance, but less than 5 %, based on the sum.

c) The mixture contains WGK 1 components with a percentage by mass of 3% or more, based on the sum.

d) The mixture does not fulfil all the prerequisites, as listed in Number 2.2.2 of this Administrative Regulation, for mixtures that are non-hazardous to water.

4. Determination of water hazard class using test data for the mixture

4.1 Scope of application

The water hazard classes of mixtures whose components are not individually known, but for which the proofs named in Number 4.2 and 4.3 are available, may be determined by means of tests with the mixtures themselves. In individual cases, particular testing of a mixture is not necessary if only one component has been replaced, if the new component, pursuant to Number 2.1 of this Administrative Regulation, is classified in the same water hazard class as the replaced one and if the new component is not known to have any characteristics that could increase the water hazard potential of the mixture. The second sentence shall also apply mutatis mutandis for components non-hazardous to water pursuant to Number 1.2 of this Administrative Regulation. The first sentence shall also apply to mixture whose components are known and, when tested as mixture, are found to belong to a different water hazard class than that produced through derivation pursuant to Number 3.

4.2 Testing of acute toxicity for mammals

If proof of testing for acute toxicity for a rodent species, following swallowing or skin contact, is available, then it must be determined whether the mixture must be classified into R-phrases pursuant to Article 4b Ordinance on Hazardous Substances.

The first sentence shall apply mutatis mutandis if such proof is available for the components but not for the mixture.

If proof of testing for acute toxicity for a rodent species, following swallowing or skin contact, is available neither for the mixture nor for the components, a default value of 5 points shall be assigned.

4.3 Testing for ecotoxicity

If proof of testing for acute toxicity for a fish species (96 h LC_{50}) or a water-flea species (48 h EC_{50}) or for inhibition of algae growth (72 h IC_{50}) is available for at least two of these organisms, then evaluation points shall be assigned as follows:

- 8 points, if the toxicity for the most sensitive organism is 1 mg/l or less,
- 6 points, if the toxicity for the most sensitive organism is more than 1 and up to 10 mg/l,
- 4 points, if the toxicity for the most sensitive organism is more than 10 and up to 100 mg/l,
- 3 points, if the toxicity for the most sensitive organism is more than 100 mg/l or is above the solubility threshold.

If one of the aforementioned organisms reacts particularly sensitively to one of the components contained in the mixture, then the mixture must also be tested with this organism.

If no proof is available of testing for acute toxicity for a fish species or a water flea species, or for inhibition of algae growth, or if such proofs have been carried out for only one of these species, then a default value of 8 points shall be assigned.

4.4 Other hazard characteristics

If the mixture has been classified, pursuant to Article 4b Ordinance on Hazardous Substances, into one of the R-phrases listed in Annex 3 (1) of this Administrative Regulation (except for R 21 through R 28, R 50 through R 53 and R 65, in each case either alone or in combination), then the points listed in Annex 3 (1) shall be assigned.

4.5 Classification into a water hazard class

A point total shall be determined for the mixture pursuant to Numbers 4.2 through 4.4. The mixture shall be classified into a water hazard class in keeping with this point total and the provisions in Annex 3 (4.2).

5. Determination of the water hazard class for special mixtures

Where the procedure pursuant to Numbers 3 and 4 results in unacceptable classifications of mixtures, the mixtures shall be specified in greater detail in Annex 1 or 2.

Last revision: 9 September 1998

Reasons for the draft of an Administrative Regulation on Substances Hazardous to Water (VwVwS)

General section

Pursuant to Article 19g (1) Federal Water Act (WHG), facilities that handle substances hazardous to water must be designed, installed, erected, maintained and operated in such a manner that no contamination of waters, or any other detrimental change in their properties, is to be feared. In certain cases, pursuant to Article 19g (2) WHG, the best possible protection of waters against contamination or other detrimental change in their properties must be achieved.

In Germany, the various federal states (*Länder*) fill the framework provision of Article 19g WHG with their own laws, ordinances, administrative regulations and technical regulations. They establish technical requirements, in keeping with the relevant hazards, for facilities that handle substances hazardous to water. The potential hazard is based on the type and location of the facility in question, and on the amount of and hazard potential of the relevant substance hazardous to water. This approach is also in keeping with the principle of proportionality.

Pursuant to Article 19g (5) first sentence WHG, substances hazardous to water include solid, liquid and gaseous substances that are able to persistently impair the physical, chemical or biological characteristics of waters. Pursuant to Article 19g (5) second sentence, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is empowered to issue, with the consent of the German *Bundesrat*, general administrative regulations in which substances hazardous to water are specified in detail and classified in keeping with their hazard potential. This is the purpose of the present Administrative Regulation.

In the existing administrative regulation on substances hazardous to water, of 18 April 1996, 1355 substances and substance groups were specified and classified in keeping with their hazard potential. In addition, it permitted manufacturers of mixtures to classify mixtures themselves, in keeping with an easily applied and checked mixing rule, in water hazard classes (WGK). As a result, some 60 % of the substances that are listed in the EU's Regulation on Evaluation and Control of Existing Substances (793/93/EEC) and that are manufactured and sold in large amounts in Europe were classified in WGK. At the same time, the number of conflicts between operators and authorities was reduced, and greater legal certainty was achieved; this helped to accelerate permit procedures.

Nonetheless, a large portion of the substances hazardous to water that are used in Germany have remained unclassified in accordance with the administrative regulation. As long as a substance has not been reliably classified, state (*Land*) regulations require its hazard level to be determined in accordance with the highest WGK. At the same time, efforts are being intensified to design German safety regulations for handling substances hazardous to water in such a manner that they can be more easily communicated within the EU and so that they will facilitate international trade.

In order to reduce the numbers of unclassified substances, and to enhance transparency with respect to EU-wide regulations, a fundamentally new approach was chosen. On the basis of European laws on hazardous substances, a classification procedure was developed

that permits manufacturers and distributors to derive WGKs from the R-phrase classifications of laws on hazardous substances. The resulting greater links with chemicals laws valid throughout Europe simplifies matters for foreign companies and enhances their acceptance of Germany's proven regulations for dealing with substances hazardous to water. The principle of concern of Article 19g WHG is fulfilled in that default values are assigned in cases where incomplete data is available; these default values are to be used in cases where information about certain substance characteristics is lacking. The new classification procedure thus helps to harmonise substance classifications in Europe and contributes to deregulation by ensuring that industry and authorities are not duplicating each others' work.

In addition to providing harmony with laws on hazardous substances, this Regulation also differentiates between substances that are non-hazardous to water and those that are. The previous division into four water hazard classes, WGK 0-3, is replaced with the three classes WGK 1-3. In addition, Annex 1 of the new administrative regulation contains a list of substances that are considered non-hazardous to water within the meaning of Article 19g WHG. The previous WGK 0 includes substances that are termed "in general not hazardous to water". These substances present little or no hazard potential to waters. Previous WGK 0 substances that, according to the new classification criteria, are non-hazardous to water, are listed in Annex 1 as "substances non-hazardous to water". The remaining substances in the previous WGK 0 that have little hazard potential to waters meet the new criteria for WGK 1. Like other already classified substances, they are listed in Annex 2 along with their WGK.

The harmonisation with laws on hazardous substances simplifies administrative procedures and facilitates enforcement by water authorities. These aims also require adaptation of *Länder* laws to the new classification system, however. The elimination of the previous WGK 0 requires harmonisation of requirements structures. This applies especially with respect to substances which are classified in WGK 1 in the future. Those substances present only a slight hazard to waters. They also include substances that previous were designated "in general not hazardous to water", as long as the new classification does not list them in Annex 1 as non-hazardous to water within the meaning of Article 19g WHG or they are considered non-hazardous to water under the criteria of Annex 3. This applies mainly to readily water-soluble substances that in higher concentrations (g/l range) have toxic effects on aquatic organisms.

The *Länder* can be expected to establish appropriate transitional regulations until they adapt their own ordinances. Review as to whether such a transition regulation should be included in this Administrative Regulation showed that the empowerment contained in Article 19g (5) second sentence WHG does not suffice to enable the Federal Government to establish a transition regulation with requirements for facilities.

Costs, impacts on prices

The administrative regulation will not create any new costs. No impacts on price levels are expected. The new classification procedure enables manufacturers and distributors to determine water hazard classifications themselves. Water hazard class classifications can be used to establish graded levels of safety requirements for facilities. This will provide simplification in cases in which the hazard level of the highest water hazard class (WGK 3) had to be applied simply because the relevant water hazard class was not known. Additional simplification and facilitation could result from harmonisation with European laws on hazardous substances, since WGK can be determined with existing testing procedures.

Costs for public budgets:

No costs are expected for the Federal Government, the *Länder* and the municipalities. Simplification is expected in the area of enforcement, since the new administrative regulation classifies all previously unclassified substances within a water hazard class. The Federal Government's cost for documentation pursuant to No. 3.1 can be offset through elimination of existing classification tasks.

Regarding the regulations themselves:

No. 1.1 (scope of application)

The definition of substances hazardous to water is in keeping with the provisions of the empowerment basis for this Administrative Regulation in Article 19g (5) WHG.

The definition of substance groups is adopted from the administrative regulation of 18 April 1996. The same also applies to the inclusion of preparations and mixtures within the scope of application.

Article 19g (5) WHG empowers the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) to make specific provisions for substances hazardous to water and to classify such substances in keeping with their hazard potential. The empowerment does not include the authority to introduce amounts thresholds or to take certain forms of packaging into account in determining hazard potential to waters.

It is up to the *Länder* to assess the potential hazards from facilities as a function of amounts thresholds for substances. As a rule, storage of individually packaged very small amounts, in so-called "blister" packages, and standard household types of consumer packaging, will not be included in the area relevant to water law.

No. 1.2 and Annex 1 (substances non-hazardous to water)

Substances and substance groups that are not able to persistently impair the physical, chemical or biological characteristics of waters are defined as substances that are non-hazardous to water within the meaning of Article 19g (5) WHG. These substances are specified in greater detail in Annex 1 of this Administrative Regulation, which contains an itemised list of substances non-hazardous to water that has been compiled on the basis of evaluation data of the Commission for the Evaluation of Substances Hazardous to Water (KBwS) in the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). This list is not conclusive and may be modified in later versions of this Administrative Regulation. The possible modifications include addition of mixtures.

In addition, the Regulation defines substances as being non-hazardous to water if the substances do not require classification into the R-phrases used in laws on hazardous substances and named in Annex 3 (1), and if the substances must not be assigned default values pursuant to Annex 3 (2). The tests underlying these classifications, within the framework of European laws on hazardous substances, have been developed for determination of the hazard potential of substances, but not their safety with respect to the assets/resources in question here. For this reason, Annex 3 (5) contains additional requirements for substances non-hazardous to water, including requirements for solubility in water, toxicity for aquatic organisms and biodegradability. Only when all of these criteria are

met can it be assumed that the substance in question cannot present a hazard to waters within the meaning of Article 19g (5) WHG.

Foods and animal feeds are also defined as non-hazardous to water, as long as they conform to the provisions of applicable laws and are not expressly classified in a water hazard class in Annex 2. The possibility that some foods and animal feeds could be hazardous to water cannot be ruled out.

No. 2.1, Annex 2 and Annex 3 (substances and substance groups hazardous to water)
No. 2.1.1 and Annex 2 (list of substances hazardous to water)

Annex 2 lists all substances and substance groups contained in Annex 1 of the administrative regulation of 18 April 1996, as well as those substances and substance groups that have been classified in water hazard classes by the Commission for the Evaluation of Substances Hazardous to Water (KBwS) since the editorial deadline for this Regulation, where such substances and substance groups are not listed in Annex 1. In future, this annex shall contain only those substances and substance groups which must be classified using procedures different from those described in Annex 3 (in keeping with laws on hazardous substances), for reasons such as:

- the substances or substance groups have special water-hazard potential characteristics that are not described by the hazardous-substances-law classifications listed in Annex 3 (for example, soil mobility characteristics or chronic toxicity to aquatic organisms),

- the substances or substance groups have been classified, under laws for hazardous substances, into one or more R-phrases that are named in Annex 3 of this Administrative Regulation and whose hazard potential characteristics are not relvant, or are hardly relevant, when the substance or substance group is in water (for example, an R 45 classification (may cause cancer) for a solid substance that is not soluble in water).

On application, to be submitted to the Commission for the Evaluation of Substances Hazardous to Water, these classifications shall be taken into account in Annex 2 of the next update of this Administrative Regulation.

Pursuant to No. 2.1.4, Annex 2 also defines the water hazard potential of individual substances that have been combined into substance groups. This approach reflects the fact that some substance groups with common functional, effective or structural characteristics often have very similar properties with regard to water hazard potential and thus may be classified within a common water hazard class. Group classifications, which are binding for all substances of a group, facilitate the enforcement of this Administrative Regulation, since group classification eliminates the need for classification of the relevant individual substances.

As in the existing procedure, mixtures are classified in water hazard classes by the relevant distributors or users themselves, via derivation from individual components or testing of the mixtures. Where this approach produces unacceptable classifications in individual cases, applications for special classification may be submitted to the Federal Ministry for the Environment, Nature Conservation and Reactor Safety (BMU). Such mixtures will then be listed by name in Annex 1 or 2.

No. 2.1 and Annex 3 (derivation of water hazard classes from classifications under laws for hazardous substances)

Annex 3 defines all substances and substance groups as hazardous to water whose characteristics fulfil the criteria for classifications under laws on hazardous substances as set forth in Annex 3 (1). The relevant hazardous-determining characteristics must also be determined, in a similar way, for those substances that are not subject to the scope of the application of the Chemicals Act, where the substances must be classified into a water hazard class.

These classifications are selected with respect to the aims of protecting human health (via water pathways), the aquatic environment and the soil. All R-phrase classifications under laws on hazardous substances that describe hazards to these protection objectives are listed in Annex 3. The descriptions take into account acute or chronic toxicity of substances to mammals following swallowing or skin contact. In addition, assessments of carcinogenic, mutagenic or teratogenic properties of substances are considered. With respect to the aim of protecting the aquatic environment, those classifications are listed that describe toxicity for aquatic organisms, the bioaccumulative behaviour of substances and substances' biodegradability. Finally, the list includes classifications that describe hazardous reactions with water (including formation of toxic substances).

The substance properties upon which these classifications are based have been taken into account in existing substance classifications, in water hazard classes, as carried out by the Commission for the Evaluation of Substances Hazardous to Water of the BMU. The selection of classifications in Annex 3 of this Administrative Regulation is thus a direct continuation of the former procedure for specification of substances hazardous to water.

Laws on hazardous substances do not cover all substances. Substance-evaluation procedures, under laws on hazardous substances, should be applied to all substances that belong within a given water hazard class in order to determine the substances' hazard potential to waters.

c) No. 2.1.2 and Annex 3 (4) (water hazard classes)

The water-hazard potential characteristics of substances and substance groups are specified in detail in Annexes 2 and 3, with the help of three water hazard classes. These classes, which are largely similar to the previous water hazard classes, enable the *Länder* to establish hazards-oriented requirements for safety designs of facilities that handle substances hazardous to water. Class WGK 0 is being discontinued; as described, it is being replaced by a list of substances non-hazardous to water, since classification in WGK 0 required tests that had no basis in laws on hazardous substances. Retention of WGK 0 would thus not have been reconcilable with the aim of bringing derivation of water hazard classes into general harmony with laws on hazardous substances.

Allocation of individual point totals to classifications under laws on hazardous substances was oriented, in previous procedures, to classification of substances in water hazard classes. The same or similar hazard potential characteristics are weighted in a similar way in both procedures. According to a review of the Federal Environmental Agency, the two procedures lead to the same water hazard class in about 70 % of all cases. Discrepancies of more than one WGK level occur only in cases in which the substance has hazard potential

characteristics to which no classification has been assigned under laws on hazardous substances. Such substances will also be listed in Annex 2 in future.

Pursuant to Annex 3, a water hazard class is derived by determining a point total consisting of evaluation points that are assigned to the various classifications under laws on hazardous substances and of default values. Where classifications under laws on hazardous substances are available, the procedure described in Annex 3 will always produce a water hazard class classification. Since classifications under laws on hazardous substances are to be determined by the relevant manufacturers and distributors themselves, where relevant classification is not already provided in Annex 1 of the Law on Hazardous Substances, it makes sense to also permit the manufacturer, distributor or other skilled persons to derive the water hazard class. Proper application of this Administrative Regulation, along with nationally standardised enforcement, is to be assured by means of documentation and central recording of these classifications.

d) Annex 3 (2) (classification in cases in which the data are incomplete)

The principle of concern in Article 19g WHG represents a significant difference between laws on hazardous substances and Federal Water Act (WHG). According to this principle, a high hazard must be assumed in cases of lacking or inadequate information. In the *Länder* regulations for facilities that handle substances hazardous to water, this principle is implemented in such a manner that substances that have not been reliably classified are assigned to the highest WGK.

On the other hand, classifications under laws on hazardous substances are required only where it is known that a substance has particular hazard potential characteristics. If a certain hazard potential characteristic has not yet been studied, no classification and labelling are required for relevant substances listed in the European Inventory of Existing Commercial Chemical Substances (EINECS). Specification of water hazard potential exclusively on the basis of classifications under laws on hazardous substances would thus not take adequate regard of the principle of concern under the WHG.

In the development of the classification procedure for this Administrative Regulation, it was thus assumed that determination of any substance's water hazard potential is possible only with a basic data record, containing data on acute toxicity for mammals, toxicity for aquatic organisms, biodegradability and bioaccumulation behaviour. The scope of this data record is largely in keeping with that used to date by the Commission for the Evaluation of Substances Hazardous to Water in evaluating substances. The only addition required consists of information on bioaccumulation behaviour. This results from combination, in classifications under laws on hazardous substances, of this property with aquatic toxicity.

The basic data record must be determined for every substance that must be classified within a water hazard class. Testing is not required only in justified individual cases in which testing in light of the latest scientific findings is either unnecessary or not technically feasible. This possibility represents a closely restricted exception and not the normal case, however. The procedure in such cases should be similar to that set forth by Article 20 (4) Chemicals Act, which regulates such exceptions for registration of new substances.

Where relevant characteristics that must be tested have not been tested, either completely or in part, a high hazard is assumed in specification of the relevant water hazard, and in Annex

3 (2) a default values is assigned that corresponds to that classification, under laws on hazardous substances, that describes the highest possible hazard in this area.

This approach fulfils the principle of concern in a differentiated way and also permits specification of the relevant hazard to waters even in cases in which the data are incomplete.

No. 2.2 and Annex 4 (preparations and mixtures)

All those preparations and mixtures are classified as hazardous to water that contain substances that are hazardous to water. The water hazard class results from a calculation rule in Annex 4 that is the same as that found in Annex 2 of the administrative regulation of 18 April 1996. Where this rule refers to substances classified in WGK 0, these substances are referred to in No. 2.2 as "substances non-hazardous to water". Definition of preparations and mixtures as non-hazardous to water, via maximum content of substances hazardous to water (graded in water hazard classes), is also similar.

The new administrative regulation provides the additional possibility for classification of preparations and mixtures, in water hazard classes, on the basis of data obtained from the relevant preparations or mixtures. This arrangement reflects the fact that test data are available for many commercially available preparations whose ingredients are not known to the manufacturers and distributors. The classification rules reflect the fact that hazard potential characteristics such as biodegradability and bioaccumulation behaviour cannot normally be reliably determined using the preparation itself. As a precaution, therefore, Annex 4 (4) assumes that these hazard potential characteristics are present in preparations. Other hazard potential characteristics of preparations are also taken into account, if they result in a classification under laws on hazardous substances. In some cases, the procedures pursuant to Annex 4 (3) and (4) may not always lead to suitable classifications of mixtures. For example, this can occur if a mixture contains added dispergators that do not have any synergistic effects. In such cases, the mixture may be specified and classified pursuant to Annex 1 or Annex 2.

3. (Documentation and publication)

The classifications are documented by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, or a central agency it has authorised. To this end, the data obtained from testing must be recorded in a logical, clear way. Documentation is necessary so that substances, and the responsible manufacturers or distributors, can be clearly identified and so that any causes of water hazard potential or, for example, any use of default values, are recognisable.

The classifications are also recorded for the purpose of facilitating nationally standardised enforcement. If different WGK are reported to the central agency, then the higher WGK shall apply, in keeping with the principle of concern. This shall not apply in cases in which the higher WGK results from use of default values, i.e. in cases in which the lower WGK is based on a more complete data record.

26
35
8
8
8
8
21
21
11
21
21
21

21
8
8
25
21
21
21
10
11
11
11
11
11
11
11
11
.
8
21
8
8
8
8
19
23
17
21
38
16
8
8
8
8
8
11
12
37
8
8
8
8
8
8
8
8
8
.
11.
11
8
21
9
35
35