

## OCCUPATIONAL EXPOSURE LIMITS FOR AIRBORNE TOXIC SUBSTANCES

Basic Legal Act in Poland:

**THE ORDINANCE OF THE MINISTER OF LABOUR AND SOCIAL POLICY ON THE MAXIMUM ADMISSIBLE CONCENTRATIONS AND INTENSITIES OF HARMFUL TO HEALTH AGENTS IN THE WORKING ENVIRONMENT. *DZIENNIK USTAW* 2002, NO 217, ITEM 1833, CHANGES *DZIENNIK USTAW* 2005, NO. 212, ITEM 1769 (in red), *DZIENNIK USTAW* 2007, NO. 161, ITEM 1142 (in green), *DZIENNIK USTAW* 2009, NO 105, ITEM 873 (in blue), *DZIENNIK USTAW* 2010, NO 141, ITEM 950 (in pink).**

**Annex 1**

### A. CHEMICAL SUBSTANCES

| NO.      | Substances<br>[CAS number] <sup>1</sup>                      | Maximum admissible concentrations expressed in mg/m <sup>3</sup> depending on the duration of exposure during the workday |            |          |
|----------|--|---|------------|----------|
|          |  | MAC (TWA)   | MAC (STEL) | MAC (C)  |
| <b>1</b> | <b>2</b>   | <b>3</b>  | <b>4</b>   | <b>5</b> |
| 1        | <b>Acetaldehyde</b><br>[75-07-0]                             | 5   | -          | 45       |
| 2        | <b>Acetanilide – dust</b><br>[103-84-4]                      | 6   | -          | -        |
| 3        | <b>Acetophenone</b><br>[98-86-2]                             | 50  | 100        | -        |
| 4        | <b>Acetone</b><br>[67-64-1]                                  | 600   | 1800       | -        |
| 5        | <b>Acetonitrile</b><br>[75-05-8]                             | 70  | 140        | -        |
| 6        | <b>Bis(2-ethylhexyl) adipate</b><br>[103-23-1]               | 400   | -          | -        |
| 7        | <b>Acrolein</b><br>[107-02-8]                                | 0.05  | 0.1        | -        |
| 8        | <b>Acrylamide</b><br>[79-06-1]                               | 0.1   | -          | -        |
| 9        | <b>Butyl acrylate</b><br>[141-32-2]                          | 11  | 30         | -        |
| 10       | <b>2-Ethylhexyl acrylate</b><br>[103-11-7]                   | 35  | 100        | -        |
| 11       | <b>Ethyl acrylate</b><br>[140-88-5]                          | 20  | 40         | -        |
| 12       | <b>Hydroxypropyl acrylate, mixed isomers</b><br>[25584-83-2] | 2.8   | 6          | -        |
| 13       | <b>2-Hydroxypropyl acrylate</b><br>[999-61-1]                | 2.8   | 6          | -        |
| 14       | <b>2-Hydroxy-1-methylethyl acrylate</b><br>[2918-23-2]       | 2.8   | 6          | -        |

<sup>1</sup> CAS (Chemical Abstracts Service Registry Number) – a unique identifier is assigned to each chemical registered with the Chemical Abstracts Service (CAS) of the American Chemical Society. This number is used to identify chemicals on the basis of their molecular structure.

| 1  | 2   | 3    | 4    | 5 |
|----|---|------|------|---|
| 15 | <b>Methyl acrylate</b><br>[96-33-3]                               | 14   | 28   | - |
| 16 | <b>Acrylonitrile</b><br>[107-13-1]                                | 2    | 10   | - |
| 17 | <b>Aldrin</b> <sup>2</sup><br>[309-00-2]                          | 0.01 | 0.08 | - |
| 18 | <b>Alfamethrin</b> – aerosols, mixed isomers<br>[67375-30-8]      | 1    | -    | - |
| 19 | <b>Ammonium sulfamate</b> – total inhalable dust<br>[7773-06-0]   | 10   | -    | - |
| 20 | <b>Ethanolamine</b><br>[141-43-5]                                 | 2.5  | 7.5  | - |
| 21 | <b>4-Aminophenol</b> – dust<br>[123-30-8]                         | 5    | -    | - |
| 22 | <b>Triethylenetetramine</b><br>[112-24-3]                         | 1    | 3    | - |
| 23 | <b>Amitrole</b><br>[61-82-5]                                      | 0.15 | -    | - |
| 24 | <b>Ammonia</b><br>[7664-41-7]                                     | 14   | 28   | - |
| 25 | <b>Aniline</b><br>[62-53-3]                                       | 5    | 20   | - |
| 26 | <b>Antimony</b> [7440-36-0] <b>and inorganic compounds, as Sb</b> | 0.5  | -    | - |
| 27 | <b>Arsine</b><br>[7784-42-1]                                      | 0.02 | -    | - |
| 28 | <b>Arsenic and inorganic compounds, as As</b><br>[7440-38-2]      | 0.01 | -    | - |
| 29 | <b>Asphalt</b> – fume<br>[8052-42-4]                              | 5    | 10   | - |
| 30 | <b>Atrazine</b><br>[1912-24-9]                                    | 5    | -    | - |
| 31 | <b>Aziridine</b><br>[151-56-4]                                    | 0.62 | -    | - |
| 32 | <b>2-Ethylhexyl nitrate</b><br>[27247-96-7]                       | 3.5  | 7    | - |
| 33 | <b>n-Propyl nitrate</b><br>[627-13-4]                             | 30   | 100  | - |
| 34 | <b>Sodium azide</b><br>[26628-22-8]                               | 0.1  | 0.3  | - |
| 35 | <b>Barium</b> [7440-39-3] <b>and soluble compounds, as Ba</b>     | 0.5  | -    | - |
| 36 | <b>Benzaldehyde</b><br>[100-52-7]                                 | 10   | 40   | - |
| 37 | <b>Benzene</b><br>[71-43-2]                                       | 1.6  | -    | - |
| 38 | <b>Benzenethiol</b><br>[108-98-5]                                 | 2    | -    | - |

<sup>2</sup> The pure substance's customary name is HHDN; the product with 85% of HHDN is called aldrin.

| 1  | 2  | 3          | 4           | 5      |
|----|--|------------|-------------|--------|
| 39 | <b>Benz[a]pirene</b><br>[50-32-8]  | 0.002      | -           | -      |
| 40 | <b>Quinone</b><br>[106-51-4]   | 0.1        | 0.4         | -      |
| 41 | <b>Benzothiazole</b><br>[95-16-9]  | 20         | -           | -      |
| 42 | <b>Benzidine</b><br>[92-87-5]  | 0          | 0           | -      |
| 43 | <b>Benzin (Gasolines)</b><br>a) extraction <sup>3</sup> [8030-30-6]<br>b) to varnish [8052-41-3; 64742-82-1; 64741-92-0; 64742-48-9] | 500<br>300 | 1500<br>900 | -<br>- |
| 44 | <b>Beryllium [7440-41-7]and inorganic compounds, as Be</b>   | 0.0002     | -           | -      |
| 45 | <b>Phthalic anhydride – vapours and aerosols</b><br>[85-44-9]  | 1          | 2           | -      |
| 46 | <b>Maleic anhydride</b><br>[108-31-6]  | 0.5        | 1           | -      |
| 47 | <b>Acetic anhydride</b><br>[108-24-7]  | 10         | -           | 20     |
| 48 | <b>Decahydronaphtalene</b><br>[91-17-8]  | 100        | 300         | -      |
| 49 | <b>Biphenyl</b><br>[92-52-4]   | 1          | 2           | -      |
| 50 | <b>4-Aminodiphenyl</b><br>[92-67-1]  | 0.001      | -           | -      |
| 51 | <b>Bisphenol-A – dust</b><br>[80-05-7]   | 5          | 10          | -      |
| 52 | <b>Bromine</b><br>[7726-95-6]  | 0.7        | 1.4         | -      |
| 53 | <b>Bromfenwinfos</b><br>[33399-00-7]   | 0.01       | -           | -      |
| 54 | <b>Bromochloromethane</b><br>[74-97-5]   | 1000       | 1300        | -      |
| 55 | <b>Halothane</b><br>[151-67-7]   | 40         | 100         | -      |
| 56 | <b>Bromoethane</b><br>[74-96-4]  | 50         | 100         | -      |
| 57 | <b>Bromoform</b><br>[75-25-2]  | 5          | -           | -      |
| 58 | <b>Bromomethane</b><br>[74-83-9]   | 5          | 15          | -      |
| 59 | <b>1-Bromopropane</b><br>[106-94-5]  | 42         | -           | -      |
| 60 | <b>Hydrogen bromide</b><br>[10035-10-6]  | -          | -           | 6.5    |
| 61 | <b>1,3-Butadiene</b><br>[106-99-0]   | 4.4        | -           | -      |

<sup>3</sup> Obligatory parallel determination of benzene concentration in the air

| 1         | 2  | 3           | 4          | 5  |
|-----------|--|-------------|------------|----|
| 62        | <b>Butane</b><br>[106-97-8]                                  | 1900        | 3000       | -  |
| 63        | <b>sec-Butanol</b><br>[78-92-2]                              | 300         | 450        | -  |
| 64        | <b>n-Butanol</b><br>[71-36-3]                                | 50          | 150        | -  |
| 65        | <b>Methyl ethyl ketone</b><br>[78-93-3]                      | <b>450</b>  | <b>900</b> | -  |
| 66        | <b>n-Buthyl mercaptan</b><br>[109-79-5]                      | 1           | 2          | -  |
| 67        | <b>Crotonaldehyde</b><br>[4170-30-3]                         | 6           | 12         | -  |
| 68        | <b>n-Butyl glycidyl ether</b><br>[2426-08-6]                 | 30          | 60         | -  |
| 69        | <b>2-Butoxyethanol</b><br>[111-76-2]                         | 98          | 200        | -  |
| <b>70</b> | <b>2-(2-Butoxyethoxy)ethanol</b><br>[112-34-5]               | <b>67</b>   | <b>100</b> | -  |
| 71        | <b>n-Butylamine</b><br>[109-73-9]                            | -           | -          | 10 |
| 72        | <b>p-tert-Buthyl toluene</b><br>[98-51-1]                    | 30          | -          | -  |
| <b>73</b> | <b>But-2-yne-1,4-diol</b><br>[110-65-6]                      | <b>0.25</b> | <b>0.5</b> | -  |
| 74        | <b>Chlorine</b><br>[7782-50-5]                               | <b>0.7</b>  | <b>1.5</b> | -  |
| <b>75</b> | <b>Allyl-chloride</b><br>[107-05-1]                          | <b>2</b>    | -          | -  |
| 76        | <b>Ammonium chloride – vapours and fumes</b><br>[12125-02-9] | 10          | 20         | -  |
| <b>77</b> | <b>Chloroacetyl chloride</b><br>[79-04-9]                    | <b>0.2</b>  | <b>0.6</b> | -  |
| 78        | <b>Chromyl chloride</b><br>[14977-61-8]                      | 0.15        | -          | -  |
| <b>79</b> | <b>Thionyl dichloride</b><br>[7719-09-7]                     | <b>1.8</b>  | <b>3.6</b> | -  |
| 80        | <b>Chlorfenvinphos</b><br>[470-90-6]                         | 0.01        | 0.1        | -  |
| 81        | <b>Chloroacetaldehyde</b><br>[107-20-0]                      | 1           | 3          | -  |
| 82        | <b>Chloroacetone</b><br>[78-95-5]                            | -           | -          | 4  |
| 83        | <b>2-Chloroaniline</b><br>[95-51-2]                          | 3           | 10         | -  |
| 84        | <b>3-Chloroaniline</b><br>[108-42-9]                         | 3           | 10         | -  |
| 85        | <b>4-Chloroaniline</b><br>[106-47-8]                         | 3           | 10         | -  |
| 86        | <b>Chlorobenzene</b>   |             |            |    |

|          |   |          |          |          |
|----------|---|----------|----------|----------|
|          | [108-90-7]  | 23       | 70       | -        |
| <b>1</b> | <b>2</b>  | <b>3</b> | <b>4</b> | <b>5</b> |
| 87       | <b>2-Chloro-1.3-butadiene</b><br>[126-99-8]   | 2        | 6        | -        |
| 88       | <b>Chlorodifluoromethane</b><br>[75-45-6]   | 3000     | -        | -        |
| 89       | <b>1-Chloro-4-nitrobenzene</b><br>[100-00-5]  | 0.6      | -        | -        |
| 90       | <b>Chlorodinitrobenzene – all isomers</b><br>[25567-67-3]                                 | 1        | 3        | -        |
| 91       | <b>Epichlorohydrin</b><br>[106-89-8]  | 1        | -        | -        |
| 92       | <b>Ethyl chloride</b><br>[75-00-3]  | 200      | -        | -        |
| 93       | <b>2-Chloroethanol</b><br>[107-07-3]  | 1        | 3        | -        |
| 94       | <b>Chloroethylene</b><br>[75-01-4]  | 5        | 30       | -        |
| 95       | <b>4-Chlorophenol</b><br>[106-48-9]   | 0.5      | 1.5      | -        |
| 96       | <b>2-Chloro-N,N,N-trimethylethanaminium chloride</b><br>[999-81-5]                        | 15       | -        | -        |
| 97       | <b>Benzyl chloride</b><br>[100-44-7]  | 3        | -        | 5        |
| 98       | <b>Chloroform</b><br>[67-66-3]  | 8        | -        | -        |
| 99       | <b>Methyl chloride</b><br>[74-87-3]   | 20       | -        | -        |
| 100      | <b>Nitrochlorobenzene – all isomers</b><br>[25167-93-5]                                   | 1        | 3        | -        |
| 101      | <b>1-Chloro-1-nitropropane</b><br>[600-25-9]  | 10       | -        | -        |
| 102      | <b>Methyl chloroacetate</b><br>[96-34-4]  | 5        | 10       | -        |
| 103      | <b>Chloropyrifos</b><br>[2921-88-2]   | 0.2      | 0.6      | -        |
| 104      | <b>p-Chlorostyrene</b><br>[1073-67-2]   | 50       | 400      | -        |
| 105      | <b>o-Chlorotoluene</b><br>[95-49-8]   | 100      | 250      | -        |
| 106      | <b>Hydrogen chloride</b><br>[7647-01-0]   | 5        | 10       | -        |
| 107      | <b>Chromium [7440-47-3], metal<br/>Cr II compounds, as Cr<br/>Cr III compounds, as Cr</b> | 0.5      | -        | -        |
| 108      | <b>Chromate (VI) and dichromate (VI) – as<br/>Cr(VI) [-]</b>                              | 0.1      | 0.3      | -        |
| 109      | <b>Cyanamide</b><br>[420-04-2]  | 0.9      | 1.8      | -        |
| 110      | <b>Calcium cyanamide</b>  |          |          |          |

|          |  |                  |                  |                  |
|----------|--|------------------|------------------|------------------|
|          | [156-62-7]   | 1                | -                | -                |
| <b>1</b> | <b>2</b>   | <b>3</b>         | <b>4</b>         | <b>5</b>         |
| 111      | <b>Methyl 2-cyanoacrylate</b><br>[137-05-3]  | 2                | 4                | -                |
| 112      | <b>Hydrogen cyanide and cyanides salts, as CN</b><br><b>Hydrogen cyanide</b> [74-90-8]<br><b>Sodium cyanide</b> [143-33-9]<br><b>Potassium cyanide</b> [151-50-8]<br><b>Calcium cyanide</b> [592-01-8] | -<br>-<br>-<br>- | -<br>-<br>-<br>- | 5<br>5<br>5<br>5 |
| 113      | <b>Cyclohexane</b><br>[110-82-7]   | 300              | 1000             | -                |
| 114      | <b>Cyclohexanol</b><br>[108-93-0]  | 10               | -                | -                |
| 115      | <b>Cyclohexanone</b><br>[108-94-1]   | 40               | 80               | -                |
| 116      | <b>Cyclohexene</b><br>[110-83-8]   | 300              | 900              | -                |
| 117      | <b>Cyclohexylamine</b><br>[108-91-8]   | 40               | 80               | -                |
| 118      | <b>Cyklopentadiene</b><br>[542-92-7]   | 200              | -                | -                |
| 119      | <b>Tin and inorganic compounds, except SnH<sub>4</sub>,<br/>as Sn – dust and fume</b><br>[7440-31-5]   | 2                | -                | -                |
| 120      | <b>Zirconium and compounds, as Zr</b><br>[7440-67-7]   | 5                | 10               | -                |
| 121      | <b>2,4-D</b><br>[94-75-7]  | 7                | -                | -                |
| 122      | <b>DDT</b><br>[50-29-3]  | 0.1              | 0.8              | -                |
| 123      | <b>Decaborane</b><br>[17702-41-9]  | 0.3              | 0.9              | -                |
| 124      | <b>Phosphorus pentasulfide</b><br>[1314-80-3]  | 1                | 3                | -                |
| 125      | <b>Phosphorus pentoxide</b><br>[1314-56-3]   | 1                | 2                | -                |
| 126      | <b>Methyl demeton</b> (isomers: demeton O,<br>demeton S)<br>[8065-48-3]  | 0.1              | -                | -                |
| 127      | <b>Methyl demeton</b><br>[8022-00-2]   | 0.1              | 0.8              | -                |
| 128      | <b>Desflurane</b><br>[57041-67-5]  | 125              | -                | -                |
| 129      | <b>Ethylene glycol dinitrate</b><br>[628-96-6]   | 0.3              | 0.4              | -                |
| 130      | <b>Dibenz[<i>a,h</i>]anthracene</b><br>[53-70-3]   | 0.004            | -                | -                |
| 131      | <b>Pnenthiazine</b><br>[92-84-2]   | 4                | -                | -                |
| 132      | <b>Diborane</b><br>[19287-45-7]  | 0.1              | 0.2              | -                |

| 1   | 2   | 3    | 4    | 5 |
|-----|---|------|------|---|
| 133 | <b>Ethylene dibromide</b><br>[106-93-4]   | 0.5  | -    | - |
| 134 | <b>Dibromodifluoromethane</b><br>[75-61-6]  | 600  | 1200 | - |
| 135 | <b>2-Dibutylaminoethanol</b><br>[102-81-8]  | 14   | -    | - |
| 136 | <b>Zinc chloride – fumes</b><br>[7646-85-7]   | 1    | 2    | - |
| 137 | <b>Sulfur monochloride</b><br>[10025-67-9]  | 5    | 15   | - |
| 138 | <b>Dichlorvos</b><br>[62-73-7]  | 1    | 3    | - |
| 139 | <b><i>o</i>-Dichlorobenzene<sup>4</sup></b><br>[95-50-1]  | 90   | 180  | - |
| 140 | <b><i>p</i>-Dichlorobenzene<sup>5</sup></b><br>[106-46-7]   | 90   | 180  | - |
| 141 | <b>Dichlorodifluoromethane</b><br>[75-71-8]   | 4000 | 6200 | - |
| 142 | <b>1,1-Dichloroethane</b><br>[75-34-3]  | 400  | -    | - |
| 143 | <b>1,2-Dichloroethane</b><br>[107-06-2]   | 50   | -    | - |
| 144 | <b>1,1-Dichloroethene</b><br>[75-35-4]  | 12.5 | -    | - |
| 145 | <b>1,2-Dichloroethene – isomers</b><br><i>sym</i> - [540-59-0], <i>cis</i> - [156-59-2],<br><i>trans</i> - [156-60-5] | 700  | -    | - |
| 146 | <b>Dichlorofluoromethane</b><br>[75-43-4]   | 40   | 200  | - |
| 147 | <b>Dichloromehtane</b><br>[75-09-2]   | 88   | -    | - |
| 148 | <b>4,4'-Methylene bis(2-chloroaniline)</b><br>(MOCA) [101-14-4]   | 0.02 | -    | - |
| 149 | <b>1,1-Dichloro-1-nitroethane</b><br>[594-72-9]   | 30   | 60   | - |
| 150 | <b>1,2-Dichloropropane</b><br>[78-87-5]   | 50   | -    | - |
| 151 | <b>Dichlorotetrafluoroethane</b><br>[76-14-2]   | 5000 | 8750 | - |
| 152 | <b>Dichlorostyrene</b><br>[6607-45-0]   | 50   | 150  | - |
| 153 | <b>Dieldrin<sup>6</sup></b><br>[60-57-1]  | 0.01 | 0.08 | - |
| 154 | <b>Diethylamine</b><br>[109-89-7]   | 15   | 30   | - |
| 155 | <b>2-Diethylaminoethanol</b>  |      |      |   |

<sup>4</sup> The MAC applies to mixture of isomers: 1,2- and 1,4-dichlorobenzene

<sup>5</sup> See footnote number 4

<sup>6</sup> The pure substance's customary name is HEOD; the product with 85% of HEOD is called dieldrin

|          |   |          |          |          |
|----------|---|----------|----------|----------|
|          | [100-37-8]  | 13       | 26       | -        |
| <b>1</b> | <b>2</b>  | <b>3</b> | <b>4</b> | <b>5</b> |
| 156      | <b>Diethylbenzene</b> – mixed isomers<br>[25340-17-4]                                 | 100      | 400      | -        |
| 157      | <b>Hexamethylene-1,6-diisocyanate</b><br>[822-06-0]                                   | 0.04     | 0.08     | -        |
| 158      | <b>2,2'-Methylenediphenyl diisocyanate</b><br>[2536-05-2]                             | 0.03     | 0.09     | -        |
| 159      | <b>2,4'-methylenediphenyl diisocyanate</b><br>[5873-54-1]                             | 0.03     | 0.09     | -        |
| 160      | <b>Methylenediphenyl diisocyanate (MDI)</b> –<br>mixture of isomers<br>[26447-40-5]   | 0.03     | 0.09     | -        |
| 161      | <b>Toluene-2,4-diisocyanate</b><br>[584-84-9]   | 0.007    | 0.021    | -        |
| 162      | <b>Toluene-2,6-diisocyanate</b><br>[91-08-7]  | 0.007    | 0.021    | -        |
| 163      | <b>Toluene diisocyanate (TDI)</b> – mixture of<br>isomers<br>[26471-62-5]             | 0.007    | 0.021    | -        |
| 164      | <b>Diquat dibromide</b> - dust<br>[85-00-7]   | 0.1      | 0.3      | -        |
| 165      | <b>Dimetoat</b><br>[60-51-5]  | 0.2      | 0.6      | -        |
| 166      | <b>Methylal</b><br>[109-87-5]   | 1000     | 3500     | -        |
| 167      | <b>N,N-Dimethylacetamide</b><br>[127-19-5]  | 35       | 70       | -        |
| 168      | <b>Dimethylamine</b><br>[124-40-3]  | 3        | 9        | -        |
| 169      | <b>Xylidine</b> – mixed isomers: 2.3-; 2.4-; 2.5-;<br>2.6-; 3.4-; 3.5-<br>[1300-73-8] | 10       | -        | -        |
| 170      | <b>N,N-Dimethylaniline</b><br>[121-69-7]  | 12       | 40       | -        |
| 171      | <b>N,N-Dimethylformamide</b><br>[68-12-2]   | 15       | 30       | -        |
| 172      | <b>Diisobutyl ketone</b><br>[108-83-8]  | 150      | 300      | -        |
| 173      | <b>1,1-Dimethylhydrazine</b><br>[57-14-7]   | 0.1      | -        | -        |
| 174      | <b>Dinitrobenzene</b> – mixed isomers<br>[25154-54-5]                                 | 1        | 3        | -        |
| 175      | <b>Dinitrophenol</b> – mixed isomers<br>[25550-58-7]                                  | 0.5      | -        | -        |
| 176      | <b>Dinitrotoluene</b> – mixed isomers<br>[25321-14-6]                                 | 0.33     | -        | -        |
| 177      | <b>1,4-Dioxane</b><br>[123-91-1]  | 50       | -        | -        |
| 178      | <b>1,3-Dioxolane</b><br>[646-06-0]  | 10       | 50       | -        |



| 1   | 2  | 3    | 4     | 5 |
|-----|--|------|-------|---|
| 179 | <b>Dimethyl disulphide</b><br>[624-92-0]         | 2.5  | 5     | - |
| 180 | <b>Carbon disulfide</b><br>[75-15-0]             | 12.5 | -     | - |
| 181 | <b>Allyl propyl disulfide</b><br>[2179-59-1]     | 12   | 18    | - |
| 182 | <b>Nitrogen dioxide</b><br>[10102-44-0]          | 0.7  | 1.5   | - |
| 183 | <b>Chlorine dioxide</b><br>[10049-04-4]          | 0.3  | 0.9   | - |
| 184 | <b>Sulfur dioxide</b><br>[7446-09-5]             | 1.3  | 2.7   | - |
| 185 | <b>Carbon dioxide</b> <sup>7</sup><br>[124-38-9] | 9000 | 27000 | - |
| 186 | <b>Divinylbenzene</b><br>[1321-74-0]             | 50   | -     | - |
| 187 | <b>Endosulfan</b><br>[115-29-7]                  | 0.1  | 0.3   | - |
| 188 | <b>Endrina</b><br>[72-20-8]                      | 0.01 | 0.08  | - |
| 189 | <b>Ethylene oxide</b><br>[75-21-8]               | 1    | -     | - |
| 190 | <b>Vinyl cyklohexene dioxide</b><br>[106-87-6]   | 60   | -     | - |
| 191 | <b>Phenyl glycidyl ether</b><br>[122-60-1]       | 0.6  | 3     | - |
| 192 | <b>Isopropyl glycidyl ether</b><br>[4016-14-2]   | 240  | 360   | - |
| 193 | <b>1,2-Epoxypropane</b><br>[75-56-9]             | 9    | -     | - |
| 194 | <b>Glycidol</b><br>[556-52-5]                    | 6    | -     | - |
| 195 | <b>Allyl 2,3-epoxypropyl ether</b><br>[106-92-3] | 6    | 12    | - |
| 196 | <b>Cyanogen</b><br>[460-19-5]                    | 8    | 20    | - |
| 197 | <b>Ethanol</b><br>[64-17-5]                      | 1900 | -     | - |
| 198 | <b>Ethyl mercaptan</b><br>[75-08-1]              | 1    | 2     | - |
| 199 | <b>Dichloroethyl ether</b><br>[111-44-4]         | 10   | 30    | - |
| 200 | <b>Diglycidyl ether</b><br>[2238-07-5]           | 0.05 | -     | - |
| 201 | <b>Ethyl ether</b><br>[60-29-7]                  | 300  | 600   | - |
| 202 | <b>Diphenyl ether</b><br>[101-84-8]              | 7    | 14    | - |

<sup>7</sup> The MAC and MAC(STEL) do not apply to the working environment in the underground coal mining

| 1   | 2   | 3    | 4   | 5 |
|-----|---|------|-----|---|
| 203 | <b>Isopropyl ether</b><br>[108-20-3]                | 1000 | -   | - |
| 204 | <b>Dimethyl ether</b><br>[115-10-6]                 | 1000 | -   | - |
| 205 | <b>tert-Butyl-methyl-ether</b><br>[1634-04-4]       | 180  | 270 | - |
| 206 | <b>Phenacitin</b> – dust<br>[62-44-2]               | 5    | -   | - |
| 207 | <b>2-Ethoxyethanol</b><br>[110-80-5]                | 8    | -   | - |
| 208 | <b>Ethylenodiamine</b><br>[107-15-3]                | 20   | 50  | - |
| 209 | <b>Ethylene thiourea</b><br>[96-45-7]               | 0.1  | -   | - |
| 210 | <b>Ethyloamine</b><br>[75-04-7]                     | 9.4  | 18  | - |
| 211 | <b>Ethyl benzene</b><br>[100-41-4]                  | 200  | 400 | - |
| 212 | <b>2-Ethylhexan-1-ol</b><br>[104-76-7]              | 160  | 320 | - |
| 213 | <b>N-Ethylmorpholine</b><br>[100-74-3]              | 23   | 46  | - |
| 214 | <b>Ethyltoluene</b> – mixed isomers<br>[25550-14-5] | 100  | -   | - |
| 215 | <b>Fenitrothion</b><br>[122-14-5]                   | 0.02 | 0.1 | - |
| 216 | <b>2-Phenoxyethanol</b><br>[122-99-6]               | 230  | -   | - |
| 217 | <b>Phenol</b><br>[108-95-2]                         | 7.8  | -   | - |
| 218 | <b>Fenthion</b><br>[55-38-9]                        | 0.2  | -   | - |
| 219 | <b>p-Phenylenediamine</b><br>[106-50-3]             | 0.1  | -   | - |
| 220 | <b>Phenylhydrazine</b><br>[100-63-0]                | 20   | -   | - |
| 221 | <b>Phenylmethanol</b><br>[100-51-6]                 | 240  | -   | - |
| 222 | <b>N-Phenyl-beta-naphtyloamine</b><br>[135-88-6]    | 0.02 | -   | - |
| 223 | <b>2-Phenylpropene</b><br>[98-83-9]                 | 240  | 480 | - |
| 224 | <b>Fluorine</b><br>[7782-41-4]                      | 0.05 | 0.4 | - |
| 225 | <b>Boron trifluoride</b><br>[7637-07-2]             | -    | -   | 3 |
| 226 | <b>Fluorides</b> – as F <sup>-</sup><br>[-]         | 2    | -   | - |
| 227 | <b>Sodium fluoroacetate</b>                         |      |     |   |

|          |   |            |          |          |
|----------|---|------------|----------|----------|
|          | [62-74-8]   | 0.05       | 0.15     | -        |
| <b>1</b> | <b>2</b>  | <b>3</b>   | <b>4</b> | <b>5</b> |
| 228      | <b>Hydrogen fluoride</b><br>[7664-39-3]   | 0.5        | 2        | -        |
| 229      | <b>Fonofos</b><br>[944-22-9]  | 0.1        | -        | -        |
| 230      | <b>Formaldehyde</b><br>[50-00-0]  | 0.5        | 1        | -        |
| 231      | <b>Formamide</b><br>[75-12-7]   | 23         | -        | -        |
| 232      | <b>Phosphine</b><br>[7803-51-2]   | 0.14       | 0.28     | -        |
| 233      | <b>Triorthocresyl phosphate</b><br>[78-30-8]  | 0.1        | 0.3      | -        |
| 234      | <b>Phosgene</b><br>[75-44-5]  | 0.08       | 0.16     | -        |
| 235      | <b>Benzyl-butyl-phthalate</b><br>[85-68-7]  | 5          | -        | -        |
| 236      | <b>Dibutyl phthalate</b><br>[84-74-2]   | 5          | 10       | -        |
| 237      | <b>Diethyl phthalate</b><br>[84-66-2]   | 5          | 15       | -        |
| 238      | <b>Dimethylphthalate</b><br>[131-11-3]  | 5          | 10       | -        |
| 239      | <b>Di-sec-octyl phthalate</b><br>[117-81-7]   | 1          | 5        | -        |
| 240      | <b>Furfural</b><br>[98-01-1]  | 10         | 25       | -        |
| 241      | <b>Furfuryl alcohol</b><br>[98-00-0]  | 30         | 60       | -        |
| 242      | <b>Glycerol – aerosol</b><br>[56-81-5]  | 10         | -        | -        |
| 243      | <b>Glyphosate</b><br>[1071-83-6]  | 10         | -        | -        |
| 244      | <b>Ethylene glycol</b><br>[107-21-1]  | 15         | 50       | -        |
| 245      | <b>Aluminium metal, aluminium powders (unstable)</b> [7429-90-5]<br>- fumes, totally inhalable dust<br>- fumes, respirable dust | 2.5<br>1.2 | -<br>-   | -<br>-   |
| 246      | <b>Glutaraldehyde</b><br>[111-30-8]   | 0.4        | 0.6      | -        |
| 247      | <b>Hafnium and compounds, as Hf</b><br>[7440-58-6]  | 0.5        | -        | -        |
| 248      | <b>Hexachlorobenzene</b><br>[118-74-1]  | 0.5        | -        | -        |
| 249      | <b>1,2,3,4,5,6-Hexachlorocyclohexane technical</b> <sup>8</sup><br>[608-73-1]   | 0.17       | -        | -        |

<sup>8</sup> MAC is also for mixture of isomers; if in the environment is only one of isomers the MAC is the same (number of CAS is for mixture).

| 1   | 2  | 3                        | 4                            | 5                |
|-----|--|--------------------------|------------------------------|------------------|
| 250 | <b>Hexachloroethane</b><br>[67-72-1]   | 10                       | 30                           | -                |
| 251 | <b>Sulfur hexafluoride</b><br>[2551-62-4]  | 6000                     | -                            | -                |
| 252 | <b>Hexamethyl phosphoramidate</b><br>[680-31-9]  | 0.05                     | -                            | -                |
| 253 | <b>Hexane</b><br>[110-54-3]  | 72                       | -                            | -                |
| 254 | <b>Hexanal</b><br>[66-25-1]  | 40                       | 80                           | -                |
| 255 | <b>Hexane – other acyclic isomers except hexane</b><br>2,2-Dimethylbutane [75-83-2]<br>2,3-Dimethylbutane [79-29-8]<br>3-Methylpentane [96-14-0]<br>2-Methylpentane [107-83-5] | 400<br>400<br>400<br>400 | 1200<br>1200<br>1200<br>1200 | -<br>-<br>-<br>- |
| 256 | <b>Caprolactam</b><br>[105-60-2]   | 5                        | 15                           | -                |
| 257 | <b>Methyl n-butyl ketone</b><br>[591-78-6]   | 10                       | -                            | -                |
| 258 | <b>Heptane</b><br>[142-82-5]   | 1200                     | 2000                         | -                |
| 259 | <b>Methyl n-amyl ketone</b><br>[110-43-0]  | 238                      | 475                          | -                |
| 260 | <b>Ethyl butyl ketone</b><br>[106-35-4]  | 95                       | -                            | -                |
| 261 | <b>4-Heptanone</b><br>[123-19-3]   | 230                      | -                            | -                |
| 262 | <b>Borates, tetra, sodium salts decahydrate – dusts</b><br>[1303-96-4]   | 0.5                      | 2                            | -                |
| 263 | <b>Hydrazine</b><br>[302-01-2]   | 0.05                     | 0.1                          | -                |
| 264 | <b>Hydroquinone</b><br>[123-31-9]  | 1                        | 2                            | -                |
| 265 | <b>Diacetone alcohol</b><br>[123-42-2]   | 240                      | -                            | -                |
| 266 | <b>Diethylene triamine</b><br>[111-40-0]   | 4                        | 12                           | -                |
| 267 | <b>2,2'-Iminodiethanol</b><br>[111-42-2]   | 9                        | -                            | -                |
| 268 | <b>Yttrium metal and compounds, as Y</b><br>[7440-65-5]  | 1                        | -                            | -                |
| 269 | <b>Isobutyraldehyde</b><br>[78-84-2]   | 100                      | -                            | -                |
| 270 | <b>Isoflurane</b><br>[26675-46-7]  | 32                       | -                            | -                |
| 271 | <b>Cyclohexyl isocyanate</b><br>[3173-53-3]  | 0.04                     | -                            | -                |

| 1   | 2  | 3    | 4    | 5 |
|-----|--|------|------|---|
| 272 | <b>3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate</b><br>[4098-71-9]                | 0.04 | -    | - |
| 273 | <b>Methyl isocyanate</b><br>[624-83-9]   | 0.03 | -    | - |
| 274 | <b>Isooctan-1-ol</b> – mixed of isomers<br>[26952-21-6]                                      | 220  | 440  | - |
| 275 | <b>Isopentane</b> (2-methylbutane)<br>[78-78-4]  | 3000 | -    | - |
| 276 | <b>Isoprene</b><br>[78-79-5]   | 100  | 300  | - |
| 277 | <b>2-Isopropoxyethanol</b><br>[109-59-1]   | 20   | -    | - |
| 278 | <b>Isopropylamine</b><br>[75-31-0]   | 12   | 24   | - |
| 279 | <b>Dinitrisopropylphenol (DNPP)</b><br>[118-95-6]  | 0.05 | 0.15 | - |
| 280 | <b>Iodine</b><br>[7553-56-2]   | 0.5  | 1    | - |
| 281 | <b>Methyl iodide</b><br>[74-88-4]  | 7    | 20   | - |
| 282 | <b>Cadmium, metal and inorganic compounds as Cd</b> – fume and dust<br>[7440-43-9]           | 0.01 | -    | - |
| 283 | <b>Camphor, synthetic</b><br>[76-22-2]   | 12   | 18   | - |
| 284 | <b>Captan</b><br>[133-06-2]  | 5    | -    | - |
| 285 | <b>Carbaryl</b><br>[63-25-22]  | 1    | 8    | - |
| 286 | <b>Carbendazym</b><br>[10605-21-7]   | 10   | -    | - |
| 287 | <b>Carbofuran</b><br>[1563-66-2]   | 0.1  | -    | - |
| 288 | <b>Ketene</b><br>[463-51-4]  | 0.5  | 1.5  | - |
| 289 | <b>Cobalt metal</b> – fume and dust<br>[7440-48-4]   | 0.05 | 0.2  | - |
| 290 | <b>Cresol</b> – mixed isomers<br>[95-48-7; 108-39-4; 106-44-5; 1319-77-3]                    | 22   | -    | - |
| 291 | <b>Xylene</b> – mixed isomers (1,2-, 1,3-, 1,4-)<br>[95-47-6; 108-38-3; 106-42-3; 1330-20-7] | 100  | -    | - |
| 292 | <b>Cumene</b><br>[98-82-8]   | 100  | 250  | - |
| 293 | <b>Adypic acid</b> – dust<br>[124-04-9]  | 5    | 10   | - |
| 294 | <b>Acrylic acid</b><br>[79-10-7]   | 20   | 50   | - |
| 295 | <b>Nitric acid(V)</b>  |      |      |   |

|  |             |     |     |   |
|--|-------------|-----|-----|---|
|  | [7697-37-2] | 1.4 | 2.6 | - |
|--|-------------|-----|-----|---|

| 1   | 2  | 3   | 4   | 5 |
|-----|--|-----|-----|---|
| 296 | <b>Chloroacetic acid</b><br>[79-11-8]                                  | 2   | 4   |   |
| 297 | <b>Perchloric acid</b><br>[7601-90-3]                                  | 1   | 3   | - |
| 298 | <b>2,2-Dichloropropionic acid<br/>and it sodium salt</b><br>[75-99-0]  | 6   | 12  | - |
| 299 | <b>Phosphoric acid</b><br>[7664-38-2]                                  | 1   | 2   | - |
| 300 | <b>Formic acid</b><br>[64-18-6]  | 5   | 15  | - |
| 301 | <b>Acetic acid</b><br>[64-19-7]  | 15  | 30  | - |
| 302 | <b>Picric acid</b><br>[88-89-1]  | 0.1 | -   | - |
| 303 | <b>Propionic acid</b><br>[79-09-4]                                     | 30  | 45  | - |
| 304 | <b>Sulfuric acid</b><br>[7664-93-9]                                    | 1   | 3   | - |
| 305 | <b>Oxalic acid</b><br>[144-62-7]                                       | 1   | 2   | - |
| 306 | <b>Thioglycolic acid</b><br>[68-11-1]                                  | 4   | 8   | - |
| 307 | <b>Malathion</b><br>[121-75-5]   | 1   | 10  | - |
| 308 | <b>Manganese and inorganic compounds – as<br/>Mn</b><br>[7439-96-5]    | 0.3 | -   | - |
| 309 | <b>(4-Chloro-2-methylophenoxy) acetic acid<br/>(MCPA)</b><br>[94-74-6] | 1   | 5   | - |
| 310 | <b>n-Butyl metacrylate</b><br>[97-88-1]                                | 100 | 300 | - |
| 311 | <b>Methyl methacrylate</b><br>[80-62-6]                                | 100 | 300 | - |
| 312 | <b>Methanol</b><br>[67-56-1]   | 100 | 300 | - |
| 313 | <b>Methyl mercaptan</b><br>[74-93-1]                                   | 1   | 2   | - |
| 314 | <b><i>o</i>-Anisidine</b><br>[90-04-0]                                 | 0.5 | 1   | - |
| 315 | <b><i>p</i>-Anisidine</b><br>[104-94-9]                                | 0.5 | 1   | - |
| 316 | <b>Metoxychlor – dust</b><br>[72-43-5]                                 | 10  | -   | - |
| 317 | <b>2-Metoxyethanol</b><br>[109-86-4]                                   | 3   | -   | - |
| 318 | <b>2-(2-Methoxyethoxy)ethanol</b>                                      |     |     |   |

|  |            |    |   |   |
|--|------------|----|---|---|
|  | [111-77-3] | 50 | - | - |
|--|------------|----|---|---|

| 1   | 2   | 3    | 4    | 5   |
|-----|---|------|------|-----|
| 319 | <b>4-Methoxyphenol</b><br>[150-76-5]                      | 5    | -    | -   |
| 320 | <b>Dipropylene glycol methyl ether</b><br>[34590-94-8]    | 240  | 480  | -   |
| 321 | <b>Propylene glycol-1-methyl ether</b><br>[107-98-2]      | 180  | 360  | -   |
| 322 | <b>4,4'-Methylenediphenyl diisocyanate</b><br>[101-68-8]  | 0.03 | 0.09 | -   |
| 323 | <b>Methylamine</b><br>[74-89-5]                           | 5    | 15   | -   |
| 324 | <b>N-Methyl aniline</b><br>[100-61-8]                     | 2    | -    | -   |
| 325 | <b>2-Methylaziridine</b><br>[75-55-8]                     | 4.7  | -    | -   |
| 326 | <b>4,4'-Methylenedianiline</b><br>[101-77-9]              | 0.08 | -    | -   |
| 327 | <b>Isoamyl alcohol</b><br>[123-51-3]                      | 200  | 400  | -   |
| 328 | <b>Methylcyclohexane</b><br>[108-87-2]                    | 1600 | 3000 | -   |
| 329 | <b>Methylcyclohexanol – mixed isomers</b><br>[25639-42-3] | 70   | -    | -   |
| 330 | <b>o-Methylcyclohexanone</b><br>[583-60-8]                | 50   | 340  | -   |
| 331 | <b>Dinitro-o-cresol</b><br>[534-52-1]                     | 0.05 | 0.4  | -   |
| 332 | <b>Methyl-2-hexanone</b><br>[110-12-3]                    | 95   | -    | -   |
| 333 | <b>Ethyl amyl ketone</b><br>[541-85-5]                    | 50   | 100  | -   |
| 334 | <b>Methylhydrazine</b><br>[60-34-4]                       | 0.02 | 0.1  | -   |
| 335 | <b>4'-Methylmorpholine</b><br>[109-02-4]                  | 15   | 30   | -   |
| 336 | <b>1-Methylnaphthalene</b><br>[90-12-0]                   | 30   | -    | -   |
| 337 | <b>2-Methylnaphthalene</b><br>[91-57-6]                   | 25   | 50   | -   |
| 338 | <b>Hexylene glycol</b><br>[107-41-5]                      | -    | -    | 120 |
| 339 | <b>Methyl isobutyl carbinol</b><br>[108-11-2]             | 100  | 160  | -   |
| 340 | <b>Methyl isobutyl ketone</b><br>[108-10-1]               | 83   | 200  | -   |
| 341 | <b>Mesityl oxide</b><br>[141-79-7]                        | 20   | 100  | -   |
| 342 | <b>N-Methyl-2-pyrrolidone</b><br>[872-50-4]               | 120  | 240  | -   |

| 1   | 2  | 3    | 4   | 5 |
|-----|--|------|-----|---|
| 343 | <b>Isobutyl alcohol</b><br>[78-83-1]                                     | 100  | 200 | - |
| 344 | <b>tert-Butanol</b><br>[75-65-0]   | 300  | 450 | - |
| 345 | <b>Copper [7440-50-8] and its inorganic compounds, as Cu</b>             | 0.2  | -   | - |
| 346 | <b>Molybdenum and compounds, as Mo</b><br>[7439-98-7]                    | 4    | 10  | - |
| 347 | <b>Morpholine</b><br>[110-91-8]  | 36   | 72  | - |
| 348 | <b>Ethyl formate</b><br>[109-94-4]                                       | 250  | 500 | - |
| 349 | <b>Methyl formate</b><br>[107-31-3]                                      | 100  | 200 | - |
| 350 | <b>Benzoyl peroxide</b><br>[94-36-0]                                     | 5    | 10  | - |
| 351 | <b>Hydrogen peroxide</b><br>[7722-84-1]                                  | 1.5  | 4   | - |
| 352 | <b>Kerosene</b><br>[8008-20-6]   | 100  | 300 | - |
| 353 | <b>Naphthalene</b><br>[91-20-3]  | 20   | 50  | - |
| 354 | <b>Chlorinated naphthalenes</b><br>[-]                                   | 0.5  | 1.5 | - |
| 355 | <b><math>\alpha</math>-Naphthylamine</b><br>[134-32-7]                   | 0    | 0   | - |
| 356 | <b><math>\beta</math>-Naphthylamine</b><br>[91-59-8]                     | 0    | 0   | - |
| 357 | <b>Neopentane (2,2-dimethylpropane)</b><br>[463-82-1]                    | 3000 | -   | - |
| 358 | <b>Nickel and compounds except nickel carbonyl, as Ni</b><br>[7440-02-0] | 0.25 | -   | - |
| 359 | <b>Nicotine</b><br>[54-11-5]   | 0.5  | -   | - |
| 360 | <b><i>o</i>-Nitroaniline</b><br>[88-74-4]                                | 3    | 10  | - |
| 361 | <b><i>m</i>-Nitroaniline</b><br>[99-09-2]                                | 3    | 10  | - |
| 362 | <b><i>p</i>-Nitroaniline</b><br>[100-01-6]                               | 3    | 10  | - |
| 363 | <b>Nitrobenzene</b><br>[98-95-3]   | 1    | -   | - |
| 364 | <b>Nitroethane</b><br>[79-24-3]  | 75   | -   | - |
| 365 | <b>Nitromethane</b><br>[75-52-5]   | 30   | 240 | - |
| 366 | <b>Nitropropane – mixed isomers</b><br>[25322-01-4]                      | 30   | 70  | - |



| 1   | 2  | 3   | 4    | 5 |
|-----|--|-----|------|---|
| 367 | <b>2-Nitrotoluene</b><br>[88-72-2]                             | 11  | -    | - |
| 368 | <b>3-Nitrotoluene</b><br>[99-08-1]                             | 11  | -    | - |
| 369 | <b>4-Nitrotoluene</b><br>[99-99-0]                             | 11  | -    | - |
| 370 | <b>Nitrotoluene – mixed isomers</b><br>[1321-12-6]             | 11  | -    | - |
| 371 | <b>2-Butoxyethyl acetate</b><br>[112-07-2]                     | 100 | 300  | - |
| 372 | <b>n-Butyl acetate</b><br>[123-86-4]                           | 200 | 950  | - |
| 373 | <b>sec-Butyl acetate</b><br>[105-46-4]                         | 900 | 900  | - |
| 374 | <b>tert-Butyl acetate</b><br>[540-88-5]                        | 900 | 900  | - |
| 375 | <b>sec-Hexyl acetate</b><br>[108-84-9]                         | 300 | -    | - |
| 376 | <b>2-Etoxyethyl acetate</b><br>[111-15-9]                      | 11  | -    | - |
| 377 | <b>Ethyl acetate</b><br>[141-78-6]                             | 200 | 600  | - |
| 378 | <b>Isobutyl acetate</b><br>[110-19-0]                          | 200 | 400  | - |
| 379 | <b>Isoamyl acetate</b><br>[123-92-2]                           | 250 | 500  | - |
| 380 | <b>Isopropyl acetate</b><br>[108-21-4]                         | 600 | 1000 | - |
| 381 | <b>2-Methoxyethyl acetate</b><br>[110-49-6]                    | 5   | -    | - |
| 382 | <b>2-Propylene glycol 1-methyl ether acetate</b><br>[108-65-6] | 260 | 520  | - |
| 383 | <b>2-Methoxypropyl-1-acetate</b><br>[70657-70-4]               | 100 | 200  | - |
| 384 | <b>Methyl acetate</b><br>[79-20-9]                             | 250 | 600  | - |
| 385 | <b>sec-Amyl acetate</b><br>[626-38-0]                          | 250 | 500  | - |
| 386 | <b>2-Methyl butyl acetate</b><br>[620-11-1]                    | 250 | 500  | - |
| 387 | <b>n-Amyl acetate</b><br>[628-63-7]                            | 250 | 500  | - |
| 388 | <b>tert-Amyl acetate</b><br>[625-16-1]                         | 250 | 500  | - |
| 389 | <b>n-Propyl acetate</b><br>[109-60-4]                          | 200 | 400  | - |
| 390 | <b>Vinyl acetate</b><br>[108-05-4]                             | 10  | 30   | - |
| 391 | <b>2,2'-Oxydiethanol – aerosol</b>                             |     |      |   |

|  |            |    |   |   |
|--|------------|----|---|---|
|  | [111-46-6] | 10 | - | - |
|--|------------|----|---|---|

| 1   | 2  | 3            | 4          | 5      |
|-----|--|--------------|------------|--------|
| 392 | <b>Octane</b><br>[111-65-9]                                      | 1000         | 1800       | -      |
| 393 | <b>Paraffin oils – liquid faze of aerosol<sup>9</sup></b><br>[-] | 5            | 10         | -      |
| 394 | <b>Lead – inorganic compounds, as Pb</b><br>[7439-92-1]          | 0.05         | -          | -      |
| 395 | <b>Ethyl silicate</b><br>[78-10-4]                               | 80           | -          | -      |
| 396 | <b>Ozone</b><br>[10028-15-6]                                     | 0.15         | -          | -      |
| 397 | <b>Paraffin waxes – fume</b><br>[8002-74-2]                      | 2            | -          | -      |
| 398 | <b>Methyl parathion</b><br>[298-00-0]                            | 0.1          | 0.6        | -      |
| 399 | <b>Phosphorus pentachloride</b><br>[10026-13-8]                  | 0.7          | 1.4        | -      |
| 400 | <b>Pentachlorophenol</b><br>[87-86-5]                            | 0.5          | 1.5        | -      |
| 401 | <b>Bromine pentafluoride</b><br>[7789-30-2]                      | 0.5          | 1          | -      |
| 402 | <b>Pentane</b><br>[109-66-0]                                     | 3000         | -          | -      |
| 403 | <b>Pentanal</b><br>[110-62-3]                                    | 118          | 300        | -      |
| 404 | <b>Amyl alcohol<sup>10</sup></b><br>[71-41-0]                    | 100          | 450        | -      |
| 405 | <b>Methyl propyl ketone</b><br>[107-87-9]                        | 100          | 800        | -      |
| 406 | <b>Vanadium pentoxide</b> [1314-62-1]<br>a) fume<br>b) dust      | 0.05<br>0.05 | 0.1<br>0.5 | -<br>- |
| 407 | <b>Potassium persulfate – dust</b><br>[7727-21-1]                | 0.1          | -          | -      |
| 408 | <b>Piperazine</b><br>[110-85-0]                                  | 0.1          | 0.3        | -      |
| 409 | <b>2-Aminopyridine</b><br>[504-29-0]                             | 2            | -          | -      |
| 410 | <b>Pyridine</b><br>[110-86-1]                                    | 5            | 30         | -      |
| 411 | <b>Platinum – metal</b><br>[7440-06-4]                           | 1            | -          | -      |
| 412 | <b>Polichlorobiphenyls</b><br>[1336-36-3]                        | 1            | -          | -      |
| 413 | <b>Propane</b><br>[74-98-6]                                      | 1800         | -          | -      |
| 414 | <b>n-Propyl alcohol</b>  |              |            |        |

<sup>9</sup> Relating to non- and poorly refined mineral oils

<sup>10</sup> The MAC also applies to other isomeric alcohols except isoamyl alcohol [123-51-3]

|  |           |     |     |   |
|--|-----------|-----|-----|---|
|  | [71-23-8] | 200 | 600 | - |
|--|-----------|-----|-----|---|

| 1   | 2  | 3    | 4    | 5 |
|-----|--|------|------|---|
| 415 | <b>Isopropyl alcohol</b><br>[67-63-0]  | 900  | 1200 | - |
| 416 | <b>β-Propiolactone</b><br>[57-57-8]  | 1    | -    | - |
| 417 | <b>Propene</b><br>[115-07-1]   | 2000 | 8600 | - |
| 418 | <b>Allyl alcohol</b><br>[107-18-6]   | 2    | 10   | - |
| 419 | <b>Propoxur</b><br>[114-26-1]  | 0.5  | 2    | - |
| 420 | <b>Methyl acetylene</b><br>[74-99-7]   | 1500 | 2000 | - |
| 421 | <b>Propargyl alcohol</b><br>[107-19-7]                                       | 3    | -    | - |
| 422 | <b>Pyrethrum</b><br>[8003-34-7]  | 1    | -    | - |
| 423 | <b>Resorcinol</b><br>[108-46-3]  | 45   | 90   | - |
| 424 | <b>Mercury [7439-97-6], vapors and inorganic compounds as Hg</b>             | 0.02 | -    | - |
| 425 | <b>Hydrogen selenide – as Se</b><br>[7783-07-5]                              | 0.05 | 0.1  | - |
| 426 | <b>Selenium and compounds except hydrogen selenide, as Se</b><br>[7782-49-2] | 0.1  | 0.3  | - |
| 427 | <b>Sevoflurane</b><br>[28523-86-6]   | 55   | -    | - |
| 428 | <b>Dimethyl sulfate</b><br>[77-78-1]   | 0.5  | 1    | - |
| 429 | <b>Hydrogen sulfide</b><br>[7783-06-4]                                       | 10   | 20   | - |
| 430 | <b>Diesel fuel – as respirable fraction stable particulates</b><br>[-]       | 0.5  | -    | - |
| 431 | <b>Silver – fume and dust</b><br>[7440-22-4]                                 | 0.05 | -    | - |
| 432 | <b>Silver – insoluble compounds, as Ag</b>                                   | 0.05 | -    | - |
| 433 | <b>Silver – soluble compounds, as Ag</b>                                     | 0.01 | -    | - |
| 434 | <b>Stibine</b><br>[7803-52-3]  | 0.5  | 1.5  | - |
| 435 | <b>Strychnine</b><br>[57-24-9]   | 0.15 | -    | - |
| 436 | <b>Styrene</b><br>[100-42-5]   | 50   | 200  | - |
| 437 | <b>Sulfotep</b><br>[3689-24-5]   | 0.1  | -    | - |
| 438 | <b>Thallium and compounds, as Tl</b><br>[7440-28-0]                          | 0.1  | 0.3  | - |

| 1   | 2  | 3     | 4     | 5 |
|-----|--|-------|-------|---|
| 439 | <b>Tantalum</b><br>[7440-25-7]                             | 5     | -     | - |
| 440 | <b>Tellurium and compounds, as Te</b><br>[13494-80-9]      | 0.01  | 0.03  | - |
| 441 | <b>Turpentine</b><br>[8006-64-2]                           | 112   | 300   | - |
| 442 | <b>Methenamine</b><br>[100-97-0]                           | 4     | -     | - |
| 443 | <b>1,1,2,2-Tetrabromoethane</b><br>[79-27-6]               | 4     | -     | - |
| 444 | <b>Carbon tetrachloride</b><br>[56-23-5]                   | 20    | -     | - |
| 445 | <b>1,1,2,2-Tetrachloroethane</b><br>[79-34-5]              | 5     | 35    | - |
| 446 | <b>Perchloroethylene</b><br>[127-18-4]                     | 60    | 480   | - |
| 447 | <b>Tetraethyl lead</b><br>[78-00-2]                        | 0.05  | 0.1   | - |
| 448 | <b>Sulfur tetrafluoride</b><br>[7783-60-0]                 | 0.5   | 1     | - |
| 449 | <b>Phosphorus (white, yellow)</b><br>[12185-10-3]          | 0.03  | 0.24  | - |
| 450 | <b>Tetrahydrofuran</b><br>[109-99-9]                       | 150   | 300   | - |
| 451 | <b>3a,4,7,7a-Tetrahydro-4,7-methanoindene</b><br>[77-73-6] | 10    | -     | - |
| 452 | <b>1,2,3,4-Tetrahydronaphtalene</b><br>[119-64-2]          | 100   | 300   | - |
| 453 | <b>Tetranitromethane</b><br>[509-14-8]                     | 0.04  | -     | - |
| 454 | <b>Osmium tetroxide – as Os</b><br>[20816-12-0]            | 0.002 | 0.006 | - |
| 455 | <b>Thiuram</b><br>[137-26-8]                               | 0.5   | -     | - |
| 456 | <b>Nitrogen oxide</b><br>[10102-43-9]                      | 3.5   | 7     | - |
| 457 | <b>Zinc oxide, as Zn – fume</b><br>[1314-13-2]             | 5     | 10    | - |
| 458 | <b>Dinitrogen oxide</b><br>[10024-97-2]                    | 90    | -     | - |
| 459 | <b>Magnesium oxide:</b>                                    |       |       |   |
|     | a) fume  | 5     | -     | - |
|     | b) dust  | 10    | -     | - |
|     | [1309-48-4]  |       |       |   |
| 460 | <b>Calcium oxide – dust</b><br>[1305-78-8]                 | 2     | 6     | - |
| 461 | <b>Carbon monoxide</b><br>[630-08-0]                       | 23    | 117   | - |
| 462 | <b>Ferrum oxides – as Fe – fume</b>                        |       |       |   |

|  |             |   |    |   |
|--|-------------|---|----|---|
|  | [1309-37-1] | 5 | 10 | - |
|--|-------------|---|----|---|

| 1   | 2   | 3    | 4   | 5    |
|-----|---|------|-----|------|
| 463 | <b>o-Toluidine</b><br>[95-53-4]   | 3    | -   | -    |
| 464 | <b>p-Toluidine</b><br>[106-49-0]  | 8    | -   | -    |
| 465 | <b>Toluene</b><br>[108-88-3]  | 100  | 200 | -    |
| 466 | <b>Toluene-2,4-diamine</b><br>[95-80-7]   | 0.04 | 0.1 | -    |
| 467 | <b>Cyanuric acid – dust</b><br>[108-80-5]   | 10   | -   | -    |
| 468 | <b>Nitroglycerin</b><br>[55-63-0]   | 0.5  | 1   | -    |
| 469 | <b>Boron tribromide</b><br>[10294-33-4]   | -    | -   | 10   |
| 470 | <b>Phosphorus trichloride</b><br>[7719-12-2]  | 1    | 2   | -    |
| 471 | <b>Trichlorfon</b><br>[52-68-6]   | 0.5  | 2   | -    |
| 472 | <b>Trichlorobenzene – mixed isomers</b><br>(1,2,3-,1,2,4- and 1,3,5-)<br>[87-61-6; 120-82-1; 108-70-3]            | 15   | 30  | -    |
| 473 | <b>1,1,1-Trichloroethane</b><br>[71-55-6]   | 300  | 600 | -    |
| 474 | <b>1,1,2-Trichloroethane</b><br>[79-00-5]   | 45   | 100 | -    |
| 475 | <b>Trichloroethylene</b><br>[79-01-6]   | 50   | 400 | -    |
| 476 | <b>Trichlorofluoromethane</b><br>[75-69-4]  | -    | -   | 5600 |
| 477 | <b>Trichloronaphtalene – mixed isomers</b><br>[1321-65-9]   | 5    | -   | -    |
| 478 | <b>Trichloronitromethane</b><br>[76-06-2]   | 0.5  | 1.5 | -    |
| 479 | <b>1,2,3-trichloropropane</b><br>[96-18-4]  | 7    | -   | -    |
| 480 | <b>2,4,6-Trichloro-1,3,5-triazine – vapours and aerosols</b><br>[108-77-0]  | 0.05 | 0.1 | -    |
| 481 | <b>Triethylamine</b><br>[121-44-8]  | 3    | 9   | -    |
| 482 | <b>Trimethyl phosphite</b><br>[121-45-9]  | 5    | 10  | -    |
| 483 | <b>Trimethyloamine</b><br>[75-50-3]   | 12   | 24  | -    |
| 484 | <b>Trimethyl benzene – mixed isomers (1,2,3-, 1,2,4- and 1,3,5-)</b><br>[526-73-8; 95-63-6; 108-67-8; 25551-13-7] | 100  | 170 | -    |
| 485 | <b>Isophorone</b>   |      |     |      |

|          |   |                |             |          |
|----------|---|----------------|-------------|----------|
|          | [78-59-1]   | 5              | 10          | -        |
| <b>1</b> | <b>2</b>  | <b>3</b>       | <b>4</b>    | <b>5</b> |
| 486      | <b>2,4,6-Trinitrotoluene</b><br>[118-96-7]  | 1              | 3           | -        |
| 487      | <b>Cyclonite</b><br>[121-82-4]  | 1              | 3           | -        |
| 488      | <b>1,3,5-Trioxane</b><br>[110-88-3]   | 15             | 75          | -        |
| 489      | <b>Boron oxide – dust</b><br>[1303-86-2]  | 10             | -           | -        |
| 490      | <b>Aluminum oxide [1344-28-1] – as Al</b><br>- fumes, totally inhalable dust<br>- fumes, respirable dust  | 2.5<br>1.2     | -<br>-      | -<br>-   |
| 491      | <b>Sulphur trioxide</b><br>[7446-11-9]  | 1              | 3           | -        |
| 492      | <b>Titanium and compounds, as Ti</b><br>[7440-32-6]   | 10             | 30          | -        |
| 493      | <b>Uranium and compounds, as U</b><br>[7440-61-1]<br>a) insoluble compounds<br>b) soluble compounds   | 0.075<br>0.015 | 0.6<br>0.12 | -<br>-   |
| 494      | <b>Terphenyl, hydrogenated</b><br>[61788-32-7]  | 12.5           | -           | -        |
| 495      | <b>Calcium carbonate – dust<sup>11</sup></b><br>[471-34-1]  | 10             | -           | -        |
| 496      | <b>Polyaromatic hydrocarbons (PAH) – as sum of multiply the concentration and carcinogenic coefficients for 9 carcinogenic substances<sup>12</sup></b><br>[-] | 0.002          | -           | -        |
| 497      | <b>4-Vinyl cyclohexene</b><br>[100-40-3]  | 10             | -           | -        |
| 498      | <b>Vinyl toluene – mixed isomers</b><br>[25013-15-4]  | 100            | 300         | -        |
| 499      | <b>Lithium hydride</b><br>[7580-67-8]   | 0.025          | -           | -        |
| 500      | <b>Aluminum hydroxide [21645-51-2] – as Al</b><br>- fumes, totally inhalable dust<br>- fumes, respirable dust   | 2.5<br>1.2     | -<br>-      | -<br>-   |
| 501      | <b>Potassium hydroxide</b><br>[1310-58-3]   | 0.5            | 1           | -        |
| 502      | <b>Sodium hydroxide</b><br>[1310-73-2]  | 0.5            | 1           | -        |
| 503      | <b>Calcium hydroxide</b><br>[1305-62-0]   | 2              | -           | -        |
| 504      | <b>Tungsten – fume and dust</b><br>[7440-33-7]  | 5              | -           | -        |

<sup>11</sup> Totally inhalable dust containing free silica below 2%

<sup>12</sup> The carcinogenic coefficients(k) are: for dibenzo[*a,h*]anthracene – 5, benzo[*a*]pyrene – 1, benzo[*a*]anthracene – 0.1, benzo[*b*]fluoranthene – 0.1, benzo[*k*]fluoranthene – 0.1, indene[*1,2,3-c,d*]pyrene – 0.1, anthracene – 0.01, benzo[*g,h,i*]perylene – 0.01, chrysene – 0.01.

| 1   | 2   | 3    | 4 | 5 |
|-----|---|------|---|---|
| 505 | <b>Tungsten – insoluble compounds, as W</b> | 5    | - | - |
| 506 | <b>Tungsten – soluble compounds, as W</b>   | 1    | - | - |
| 507 | <b>Green acid V</b><br>[12768-78-4]         | 10   | - | - |
| 508 | <b>Tributyltin compounds</b><br>[–]         | 0.02 | – | – |
| 509 | <b>Ferrovanadium – dust</b><br>[12604-58-9] | 1    | 3 | - |

NOTE

- If a MAC applies to a mixture of isomers, in the case of one of them being present in the working environment, the same MAC value should be used (the CAS number applies to a mixture).
- Dusts, fume and aerosols are defined in Polish Standards.

**NDS – MAC(TWA): MAXIMUM ADMISSIBLE CONCENTRATION:**

The time-weighted average concentration for a conventional 8-hour workday and a workweek defined in the Labour Code, to which workers may be exposed during their whole working life, without any adverse effects on their health (also when retired) or that of the next generations.

**NDSCh – MAC(STEL): MAXIMUM ADMISSIBLE SHORT-TERM CONCENTRATION:**

The short-term exposure limit is an average concentration, to which workers may be exposed without any adverse health effects if it does not last longer than 15 minutes and does not occur more than twice during a workday, at intervals not shorter than 1 hour.

**NDSP – MAC(C): MAXIMUM ADMISSIBLE CEILING CONCENTRATION:**

Ceiling concentration, which because of the threat to workers' health or life, should not be exceeded even instantaneously. MAC(C) should be assessed with instantaneous monitoring. Where this is not feasible, the time of sampling should be as short as possible and should not exceed 15 minutes.

**NDN - MAI: MAXIMUM ADMISSIBLE INTENSITIES:**

The levels for which have written in w § 1 section 2, have definite the maximum admissible intensities for physical harmful to health agents as the level of exposure appropriate to property of individual agent, to which workers may be exposed during their whole working life, without any adverse health effects on their health (also when retired) or that of the next generations.

## B. DUSTS

| No. | Substances and CAS number   | Maximum Admissible Concentration |                       |
|-----|---|----------------------------------|-----------------------|
|     |   | mg/m <sup>3</sup>                | fiber/cm <sup>3</sup> |
| 1   | 2   | 3                                | 4                     |
| 1.  | Dusts containing free crystalline silica above 50%<br>[14808-60-7], [14464-46-1], [15468-32-3]<br>a) totally inhalable dust <sup>i</sup><br>b) respirable dust <sup>ii</sup>  | 2.0<br>0.3                       | –<br>–                |
| 2.  | Dusts containing free crystalline silica from 2% to 50%<br>[14808-60-7], [14464-46-1], [15468-32-3]<br>a) totally inhalable dust <sup>1</sup><br>b) respirable dust <sup>2</sup>  | 4.0<br>1.0                       | –<br>–                |
| 3.  | Dusts containing asbestos (one or more the asbestos dusts name under):<br>- Actinolite [77536-66-4],<br>- Gruenerite (amosite) [12172-73-5],<br>- Anthophyllite, [77536-67-5],<br>- Chrysotile, [12001-29-5],<br>- Crocidolite, [12001-28-4],<br>- Tremolite, [77536-68-6]<br>- totally inhalable dust <sup>1</sup><br>- respirable fibres <sup>iii</sup> | 0.5<br>–                         | –<br>0.1              |
| 4.  | Graphite dusts<br>[7782-42-5], [7440-44-0]<br>a) natural graphite dusts<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup><br>b) synthetic graphite dusts<br>- totally inhalable dust <sup>1</sup>  | 4.0<br>1.0<br>6.0                | –<br>–<br>–           |
| 5.  | Other nontoxic industrial dusts - including dusts containing free crystalline silica below 2% [-]<br>- totally inhalable dust   | 10.0                             | –                     |
| 6.  | Organic animal and plant dusts [-]<br>a) containing free silica 10% and more<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup><br>b) containing free silica below 10%<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>   | 2.0<br>1.0<br>4.0<br>2.0         | –<br>–<br>–<br>–      |



| 1   | 2  | 3          | 4        |
|-----|--|------------|----------|
| 7.  | Talc dusts and talc containing mineral fibres (including asbestos):<br>[14807-96-6]  |            |          |
|     | a) talc no containing mineral fibres (including asbestos)<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>                       | 4.0<br>1.0 | –<br>–   |
|     | b) talc containing mineral fibres (including asbestos)<br>- totally inhalable dust <sup>1</sup><br>- respirable fibres <sup>3</sup>                        | 1.0<br>–   | –<br>0.5 |
| 8.  | Artificial mineral fibre dust:<br>[-]  |            |          |
|     | a) artificial mineral fibre dusts except ceramic fibres<br>- totally inhalable dust <sup>1</sup><br>- respirable fibres <sup>3</sup>                       | 2.0<br>–   | –<br>1.0 |
|     | b) ceramic fibre dust<br>- totally inhalable dust <sup>1</sup><br>- respirable fibres <sup>3</sup>   | 1.0<br>–   | –<br>0.5 |
|     | c) mixture of ceramic fibre dust with other artificial mineral fibres (MMMMF)<br>- totally inhalable dust <sup>1</sup><br>- respirable fibres <sup>3</sup> | 1.0<br>–   | –<br>0.5 |
| 9.  | Portland and cement dusts:<br>[65997-15-1]   |            |          |
|     | - totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>  | 6.0<br>2.0 | –<br>–   |
| 10. | Apatite and phosphorite dusts containing free crystalline silica below 2%:<br>[-]  |            |          |
|     | - totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>  | 6.0<br>2.0 | –<br>–   |
|     | Apatite and phosphorite dusts containing free crystalline silica above 2%:<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>      | 4.0<br>1.0 | –<br>–   |
| 11. | Technical soot dusts <sup>iv</sup> [1333-86-4]<br>- totally inhalable dust <sup>1</sup>  | 4.0        | –        |
| 12. | Coal dusts:<br>[-]   |            |          |
|     | a) containing free crystalline silica above 50%<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>                                 | 1.0<br>0.3 | –<br>–   |
|     | b) containing free crystalline silica above 10% to 50%<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>                          | 2.0<br>1.0 | –<br>–   |
|     | c) containing free crystalline silica from 2% to 10%<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>                            | 4.0<br>2.0 | –<br>–   |
|     | d) containing free crystalline silica below 2%<br>- totally inhalable dust <sup>1</sup>  | 10.0       | –        |

| 1   | 2  | 3           | 4      |
|-----|--|-------------|--------|
| 13. | Wood dusts:<br>[-]   |             |        |
|     | a) wood dust except hardwood dusts such as beech and oak<br>- totally inhalable dust <sup>1</sup>  | 4.0         | –      |
|     | b) hardwood dusts such as beech and oak<br>- totally inhalable dust <sup>1</sup>   | 2.0         | –      |
|     | c) mixture wood dusts containing hardwood dusts such as beech and oak<br>- totally inhalable dust <sup>1</sup>   | 2.0         | –      |
| 14. | Silica amorphous and synthetic dusts:  |             |        |
|     | a) diatomaceous earth uncalcined [61790-53-2]<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>                               | 10.0<br>2.0 | –<br>– |
|     | b) diatomaceous earth calcined <sup>v</sup> [68855-54-9]<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>                    | 2.0<br>1.0  | –<br>– |
|     | c) synthetic silica amorphous (precipitated, gel) [112926-00-8]<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>             | 10.0<br>2.0 | –<br>– |
|     | d) fused silica (silica glass) [60676-86-0]<br>- totally inhalable dust <sup>1</sup><br>- respirable dust <sup>2</sup>                                 | 2.0<br>1.0  | –<br>– |
| 15. | Unfibre silicon carbide dusts containing free crystalline silica below 2% [409-20-2]<br>- totally inhalable dust <sup>1</sup>                          | 10.0        | –      |
| 16. | Gypsum dusts containing free crystalline silica below 2% and not containing asbestos [778-18-9]<br>- totally inhalable dust <sup>1</sup>               | 10.0        | –      |
| 17. | Dolomite dusts containing free crystalline silica below 2% and no containing asbestos<br>[-]<br>- totally inhalable dust <sup>1</sup>                  | 10.0        | –      |
| 18. | Kaolin dusts containing free crystalline silica below 2% and no containing asbestos<br>[1332-58-7]<br>- totally inhalable dust <sup>1</sup>            | 10.0        | –      |
| 19. | Titanium dioxide dusts containing free crystalline silica below 2% and no containing asbestos<br>[13463-67-7]<br>- totally inhalable dust <sup>1</sup> | 10.0        | –      |

<sup>i</sup> Totally inhalable dust – all particles surrounded by air in a given volume of air

<sup>ii</sup> Respirable dust – the mass fraction of inhaled particles penetrating to the unciliated airways

<sup>iii</sup> Respirable fibres – fibres more than 5 µm long with the maximum diameter below 3 µm, the proportion length to diameter is above 3:1

<sup>iv</sup> Applies to technical soot containing not more benzo(a)pyrene than 35 mg per 1 kg of soot

<sup>v</sup> Thermal treatment above 800 °C.