



HEALTH AND SAFETY  
AUTHORITY



2010

## Code of Practice

for the Safety, Health and Welfare at Work  
(Chemical Agents) Regulations 2001

(S.I. No. 619 of 2001)



**Our vision:**

A national culture where all commit to safe and healthy workplaces and the safe and sustainable management of chemicals

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## Foreword

The Health and Safety Authority, with the consent of Mr. Dara Calleary TD, Minister of State at the Department of Enterprise, Trade and Employment, and following public consultation, publishes this Code of Practice entitled “2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001)” in accordance with section 60 of the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005).

This Code of Practice provides practical guidance as to the observance of Regulations 4(1)(e), 4(5)(d), 6(1)(c), (d) and (e) and 9 (1) (b) of the Safety, Health and Welfare at Work (Chemicals Agents) Regulations 2001, in relation to occupational exposure limit values (OELVs) for a number of chemical agents as listed in Schedule 1 to the Code, having regard to the provisions of the Safety, Health and Welfare at Work Act 2005.

This Code of Practice comes into operation on May 4th 2010 and from that date it replaces the “2007 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001)” which was issued in accordance with the Safety, Health and Welfare at Work Act 2005.

Schedule 1 to this Code of Practice stipulates the occupational exposure limit values (OELVs) which are currently legally binding under the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001).

Schedule 2, Part 1, to this Code of Practice lists the chemical agents for which the Occupational Exposure Limit Value (OELV) has changed compared to the 2007 Code of Practice (and which are now included in Schedule 1 to the 2010 Code of Practice).

Schedule 2, Part 2, to this Code of Practice lists the Chemical agents for which the Occupational Exposure Limit Value (OELV) has not changed from that listed in the 2007 Code of Practice but for which the notation contained in the notes column in

Schedule 1 to the 2010 Code of Practice has been revised.

Please note that Commission Directive 2009/161/EU of December 17th 2009 establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC (OJ No. L338, 19.12.2009, p.87) is required to be transposed into national legislation by Member States by December 18th 2011 at the latest. For ease of reference, that list is shown in Part 2 of Schedule 3 to this Code of Practice. It is intended that the list will be added to the second list of indicative occupational exposure limit values in the next edition of this Code of Practice in 2011.

Schedule 3 to this Code of Practice provides a list of substances which are under review by the Health and Safety Authority in the period 2010 to 2011.

As part of the revision of the Code of Practice, a CAS Number Index has been added for all substances included in the Code of Practice and the Index is set out in Schedule 4.

Substances which have been assigned an indicative occupational exposure limit value (IOELV) under Commission Directives 2000/39/EC and 2006/15/EC (the first and second IOELV Directives) are indicated in the notes column in Schedule 1 to the Code of Practice.

Notice of the publication of this Code of Practice, and the withdrawal of the 2007 Code of Practice, was published in the *Iris Oifigiúil* on Friday April 30th 2010.

As regards the use of Codes of Practice in criminal proceedings, section 61 of the 2005 Act provides as follows -

“61.—(1) Where in proceedings for an offence under this Act relating to an alleged contravention of any requirement or prohibition imposed by or under a relevant statutory provision being a provision for which a code of

practice had been published or approved by the Authority under section 60 at the time of the alleged contravention, subsection (2) shall have effect with respect to that code of practice in relation to those proceedings.

- (2) (a) Where a code of practice referred to in subsection (1) appears to the court to give practical guidance as to the observance of the requirement or prohibition alleged to have been contravened, the code of practice shall be admissible in evidence.
- (b) Where it is proved that any act or omission of the defendant alleged to constitute the contravention—
- (i) is a failure to observe a code of practice referred to in subsection (1), or
  - (ii) is a compliance with that code of practice,
- then such failure or compliance is admissible in evidence.
- (3) A document bearing the seal of the Authority and purporting to be a code of practice or part of a code of practice published or approved of by the Authority under this section shall be admissible as evidence in any proceedings under this Act.”

## Periodic revision of the Code of Practice

A revision of the occupational exposure limit values listed in Schedule 1, to reflect current knowledge concerning the health hazards of the listed chemical agents, will be undertaken by the Health and Safety Authority on a biennial basis, where appropriate, in consultation with the statutory Technical and Scientific Advisory Committee. Schedule 3 to this Code of Practice provides a list of chemical agents which are under review by various international groups. This Schedule therefore serves to highlight the possibility of a change occurring to these substances, including for example the introduction of an occupational exposure limit value or a change to an existing occupational exposure limit value in 2011.

As the Code of Practice is updated biennially, specific attention should be paid to those substances listed in Schedule 3, during the announcement period. Comments concerning any of the limit values proposed may be made in writing to the Chemical Policy Services Section of the Health and Safety Authority at Hebron House, Hebron Road, Kilkenny or its headquarters, Metropolitan Building, James Joyce Street, Dublin 1, Locall: 1890 289 389 or e-mail [wcu@hsa.ie](mailto:wcu@hsa.ie).

Comments are also invited on the Authority's intention to incorporate the provisions of Commission Directive 2009/161/EU of December 17th 2009 establishing a third list of indicative occupational exposure limit values (OJ No. L338, 19.12.2009, p.87) into the next edition of this Code of Practice in 2011.

### **Robert Roe**

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Assistant Chief Executive Officer and Secretary  
to the Board



## 1. Introduction

Occupational exposure limit values (**OELVs**) provide a basis for ensuring that exposure to airborne contaminants in the workplace are controlled in such a way as to prevent adverse health effects. Existing information has been used to establish limit values for exposures which, for the majority of chemicals listed, even when repeated regularly throughout a working lifetime, are not expected to result in adverse effects on the health of exposed workers. Exceptions to this may be (1) certain risk groups such as employees known to be sensitised or (2) certain chemicals listed in the Code of Practice as carcinogenic, mutagenic or as chemicals causing respiratory sensitisation, where identification of a safe level of exposure is extremely difficult.

An OELV for a given chemical represents the maximum exposure to the chemical in workplace air, which is considered consistent with this objective. In practice, exposure levels should be maintained well below the OELV and should always be as low as reasonably achievable. This is particularly important for carcinogens, mutagens and substances causing sensitisation (occupational asthma or allergic contact dermatitis). **Schedule 1** to this Code of Practice stipulates the occupational exposure limit values for around 700 substances. Within this Schedule, carcinogens are identified by the notation "**C1 and C2**", mutagens by "**Mut 1 and Mut 2**", reproductive toxins by "**Repro 1 and Repro 2**" and sensitizers as "**Sen**".

"Occupational Exposure Limit Value", as defined in the Definitions/Glossary, is the term used in this Code of Practice to describe an exposure standard for a chemical in workplace air, with reference to either an **8-hour reference period** or a **15-minute reference period**. The exposure limit values are based on time-weighted average (**TWA**) concentrations of airborne substances. These terms are also defined in the Glossary. Terms used by other regulatory bodies throughout the world to describe exposure standards include Threshold Limit Value

(**TLV**), Occupational Exposure Standard (**OES**), Workplace Exposure Limit (**WEL**) and Short Term Exposure Limit (**STEL**). These terms may appear in Safety Data Sheets (SDSs) or other information on chemicals.

It should be noted that exposure to **radioactive material is excluded** from the scope of this Code of Practice. The Radiological Protection Institute of Ireland is the national organisation with regulatory, monitoring and advisory responsibilities in matters pertaining to such materials.

This Code of Practice, in conjunction with the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001), inter alia, transposes the provisions of Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work (O.J. No. L 131, 5.5.98), the provisions of Commission Directive 2006/15/EC establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC (O.J. No. L 38, 9.2.2006).

There is no direct link between the health hazard categories identified in the legislation on the classification, packaging and labelling of dangerous substances and preparations/mixtures (see Table 1) and the OELVs in this Code of Practice. In general, however, chemicals classified as very toxic, toxic, harmful, carcinogenic, mutagenic, or as respiratory sensitizers, are more likely to have an OELV assigned to them than chemicals which are not classified as hazardous for health, particularly if they have been classified as hazardous by inhalation or in contact with skin. Within **Schedule 1**, five groups of substances are identified as having the potential to cause particular and significant reactions following exposure. These groups may be identified by certain notations, as follows:-

- Substances, which have the capacity to penetrate the skin and be absorbed into the body, are likely to have the skin **(Sk)** notation.
- Chemicals classified as carcinogenic **(C1 and C2)** and mutagenic **(Mut1 and Mut2)** chemicals, sensitizers **(Sen)** and chemicals which are toxic for reproduction **(Repro1 and Repro2)** are specifically identified as such in the notes column of **Schedule I**, because of the particularly serious nature of these effects.

For these substances, in particular, where an OELV exists, exposure must be maintained well below that OELV, and should always be as low as reasonably achievable. In some cases no OELV is assigned to such substances because of the difficulty in identifying a safe level of exposure, and for these substances exposure levels should also be as low as reasonably achievable.

Classification, packaging and labelling legislation is a hazard-based system and the particular hazards of a chemical are identified by standardised test procedures. These hazards must be clearly identified on the labels of containers and in the associated Safety Data Sheet (SDS), along with advice on protective measures to be taken. If exposure to a hazardous chemical is prevented or minimised, e.g. by maintaining the exposure level below the OELV then the risk to health will also be prevented or minimised. OELVs are thus an important part of chemical risk assessments.

While this Code of Practice is based on the requirements of the Safety, Health and Welfare (Chemical Agents) Regulations 2001 and Directive 98/24/EC, it is worth noting other relevant chemical legislation such as REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals, Regulation (EC) No. 1907/2006) and Classification, Labelling and Packaging (CLP) Regulation ((EC) No. 1272/2008). REACH is based on the principle that industry shall ensure that chemicals placed on the European market do not adversely affect human

health and the environment. One requirement is that industry complete hazard assessments and put adequate controls in place. The hazard assessments comprise of the following steps:

- evaluation of non human and human information,
- classification and labelling, and
- the calculation of derived no effect levels (DNEL(s)).

Where the quantity of the material manufactured or imported is greater than 10 tonnes per annum, the manufacturers and importers are required to calculate DNEL(s) as part of the Chemical Safety Assessment (CSA) for chemical(s) used. The DNEL(s) will be published in the manufacturer's Chemical Safety Report and included in an extended Safety Data Sheet (SDS). REACH specifies that it may be necessary to identify different DNELs for each relevant human exposure scenario and possibly for certain vulnerable sub-populations and for different routes of exposure and different exposure durations.

An exposure limit value (IOEL, BOEL or OEL) can be used as a DNEL in limited cases where the scientific background for setting the exposure limit can be evaluated and the potential exposure route and duration are similar. If, however, the registrant of a substance has obtained new scientific information then the registrant should develop a DNEL and not apply the exposure limit. For further information see the European Chemical Agency (ECHA) guidance on hazard assessment at [www.echa.europa.eu](http://www.echa.europa.eu)

The requirements of the CLP Regulation repeals and over time replaces the classification, packing and labelling requirements of the current Directives 67/548/EEC and 1999/45/EC, leading to the adoption of the UN globally harmonised system of classification. Both systems are referenced in Table 1.



**TABLE 1**  
**Health Hazard Categories**

Hazard	Symbol	CLP Equivalent (Signal word)
Very Toxic	<b>T<sup>+</sup></b>	Acute Category 1 or 2 (Danger)
Toxic	<b>T</b>	Acute Category 2 or 3 (Danger)
Harmful	<b>Xn</b>	Acute Category 4 (Warning)
Irritant	<b>Xi</b>	Skin category 2 (Warning) / Eye category 1 (Danger) or 2 (Warning)
Corrosive	<b>C</b>	Skin category 1 (danger)
Sensitising*	<b>Xi (Skin); Xn (Respiratory)</b>	Skin Sensitizer Category 1 (Warning); Respiratory Sensitizer Category 1 (Danger)
Sensitising*	<b>Xi</b>	Skin Sensitizer Category 1 (Warning); Respiratory Sensitizer Category 1 (Danger)
Carcinogenic**	<b>T</b> Carcinogen category 1 <b>(C1)</b> , category 2 <b>(C2)</b>	Carcinogen Category 1 (Danger)
Mutagenic***	<b>T</b> Mutagen category 1 <b>(Mut 1)</b> , category 2 <b>(Mut 2)</b>	CLP Equivalent (Signal word)
Toxic for Reproduction****	<b>T</b> Reproductive Toxin category 1 <b>(Repro 1)</b> , category 2 <b>(Repro 2)</b>	Acute Category 1 or 2 (Danger)

\* May cause skin or respiratory sensitisation (allergy)

\*\* May cause cancer

\*\*\* May cause heritable genetic damage

\*\*\*\* May impair fertility or may cause harm to the unborn child



## 2. Definitions/Glossary

**“Chemical Agent”** as defined in the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001), means any chemical element or compound, on its own or admixed, as it occurs in the natural state or as produced, used or released, including release as waste, by any work activity, whether or not produced intentionally and whether or not placed on the market.

**“Hazardous Chemical Agent”**, as defined in S.I. No. 619 of 2001 means:

(i) any chemical agent which meets the criteria for classification as a dangerous substance according to the criteria in Annex VI to Directive 67/548/EEC, whether or not that substance is classified under that Directive, other than those substances which only meet the criteria for classification as dangerous for the environment;

(ii) any chemical agent which meets the criteria for classification as a dangerous preparation within the meaning of Directive 99/45/EC, whether or not that preparation is classified under that Directive, other than those preparations which only meet the criteria for classification as dangerous for the environment;

(iii) any chemical agent which, whilst not meeting the criteria for classification as dangerous in accordance with (i) and (ii), may, because of its physico-chemical, chemical or toxicological properties and the way it is used or is present in the workplace, present a risk to the safety and health of employees, including any chemical agent assigned an occupational exposure limit value in this Code of Practice, under the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001.

### Note for Information

“Hazardous substances and mixtures and specification of hazard classes” are defined further

in Article 3 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. These will replace the criteria in Directives 67/548/EEC and 1999/45/EC.

**“Occupational Exposure Limit Value”** (OELV) is defined in S.I. No. 619 of 2001 as meaning, unless otherwise specified, the limit of the time-weighted average of the concentration of a chemical agent in the air within the breathing zone of a worker in relation to a specified reference period, as approved by the Authority.

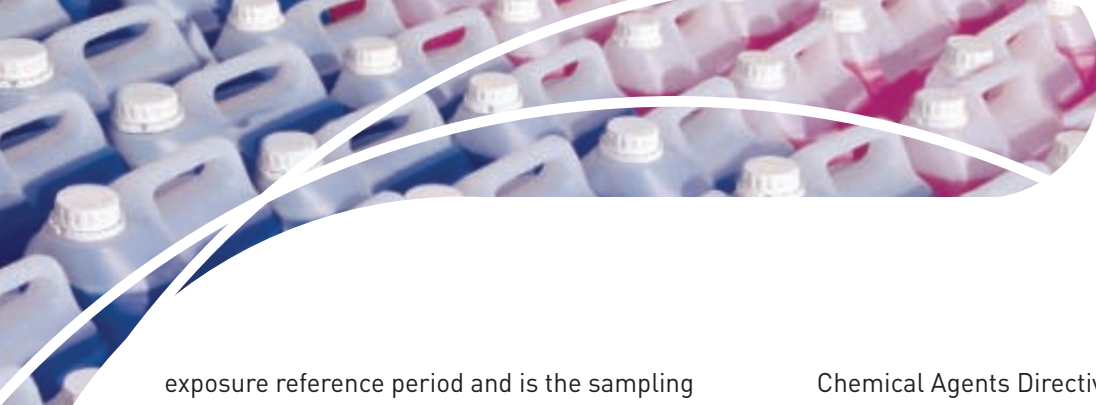
**For the purposes of this Code of Practice, “Occupational Exposure Limit Value” (OELV), as approved by the Health and Safety Authority,** means the maximum permissible concentration of a chemical agent in the air at the workplace to which workers may be exposed, in relation to an 8 hour or a 15 minute reference period, as set out in this Code. The concentration of the chemical agent in air is expressed as parts per million (ppm), milligrams per cubic metre (mg/m<sup>3</sup>), fibres per milliliter (fibres/ml) or fibres per cubic centimeter (fibres/cm<sup>3</sup>) as appropriate.

**“8 hour reference period”** relates to the procedure whereby the occupational exposures in any 24 hour period are treated as equivalent to a single uniform exposure for 8 hours (the 8 hour time-weighted average (TWA) exposure). The TWA may be expressed mathematically by:

$$(C_1 T_1 + C_2 T_2 + \dots + C_n T_n) / 8,$$

where C<sub>1</sub> .....C<sub>n</sub> are the occupational exposures and T<sub>1</sub> .... T<sub>n</sub> are the associated exposure times in hours in any 24 hour period.

**“15 minute reference period”** means the short term



exposure reference period and is the sampling period used for assessing compliance with the associated short term exposure limit (STEL).

**TLV** - Threshold Limit Value, defined as the time-weighted average concentration of airborne substances to which nearly all workers may be repeatedly exposed, without adverse effect. (U.S.A., American Conference of Governmental Industrial Hygienists (ACGIH) and European Union (EU)).

**TWA** - Time-Weighted Average, defined as the time weighted average concentration for a conventional 8 hour day/ 40 hour week. (U.S.A., American Conference of Governmental Industrial Hygienists (ACGIH) and European Union (EU)).

**STEL** - Short Term Exposure Limit, defined as the concentration to which workers can be exposed for short periods of time, usually 15 minutes, 4 times per day, without suffering adverse effects and are set to help prevent effects such as eye irritation which may occur following exposure for a few minutes. (Note: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit value should be used) (U.S.A., American Conference of Governmental Industrial Hygienists (ACGIH) and European Union (EU)).

**WEL** - are workplace occupational exposure limits (OELs) set under the UK Control of Substances Hazardous to Health Regulations 2002. WELs are concentrations of hazardous substances in the air, averaged over a specified period of time referred to as a time-weighted average (TWA). Two time periods are used: long term (8 hours) and short term (15 minutes). (EH40 Workplace Exposure Limits, Health and Safety Executive, UK).

**MAK** - Maximum Allowable Concentration (German standard).

**IOELV** - Indicative Occupational Exposure Limit Values are health based limits set under the

Chemical Agents Directive 98/24/EC. The European Commission is advised on limits by its Scientific Committee on Occupational Exposure Limits (SCOEL). SCOEL evaluates the scientific information available on hazardous substances and makes recommendations for the establishment of an IOELV. IOELVs are listed in Directives, which Member States are obliged to implement by introducing national limits for the substances.

**BOELV** - Binding Occupational Exposure Limit Values are transposed from the relevant EU Directives through a range of national legislation comprising the Safety, Health and Welfare at Work (Asbestos) Regulations 2006 (S.I. No. 386 of 2006), the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001) and the Safety, Health and Welfare at Work (Carcinogens) Regulations 2001 (S.I. No. 78 of 2001). BOELVs take account of socio-economic and technical feasibility factors as well as the factors considered when establishing IOELVs. For any chemical for which a BOELV is established at EU level, Member States must establish a corresponding BOELV, which can be stricter but cannot exceed the Community value.

**DNEL** - The Derived No-Effect Level is defined as the level of exposure above which humans should not be exposed (REACH, Regulation (EC) No. 1907/2006).

**Respirable Fraction** - Particles of inhalable aerosols that are inhaled and are not captured in the upper airways (nasopharyngeal and tracheobronchial regions) but penetrate to the pulmonary region containing the respiratory bronchioles, alveolar ducts and alveolar sacs are considered to comprise of the respirable fraction of the aerosol.

**Inhalable Fraction and Vapour (IFV)** - The Inhalable Fraction and Vapour note is used when a material exerts sufficient vapour pressure such that it may be present in both particle and vapour phases.

**C1** - Substances known to be carcinogenic for humans (Category 1 carcinogens), to which the Safety, Health and Welfare at Work (Carcinogens) Regulations 2001 (S.I. No. 78 of 2001) apply.

**C2** - Substances which should be regarded as if they are carcinogenic for humans (Category 2 carcinogens), to which the Safety, Health and Welfare at Work (Carcinogens) Regulations 2001 (S.I. No. 78 of 2001) apply.

**Mut 1** - Substances known to be mutagenic for humans (Category 1 mutagens), to which the Safety, Health and Welfare at Work (Carcinogens) Regulations 2001 (S.I. No. 78 of 2001) apply.

**Mut 2** - Substances which should be regarded as if they are mutagenic for humans (Category 2 mutagens), to which the Safety, Health and Welfare at Work (Carcinogens) Regulations 2001 (S.I. No. 78 of 2001) apply.

**Repro 1** - Substances known to impair reproduction and cause developmental toxicity in humans (Category 1 reproductive toxins) to which the European Communities (Classification, Packaging, Labelling and Notification of Dangerous Substances) Regulations 2003 (S.I. No. 116 of 2003) apply.

**Repro 2** - Substances which should be regarded as if they impair reproduction and cause developmental toxicity in humans (Category 2 reproductive toxins) to which the European Communities (Classification, Packaging, Labelling and Notification of Dangerous Substances) Regulations 2003 (S.I. No. 116 of 2003) apply.

**BLV** - Biological Limit Value, as defined in the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001), means the limit of the concentration in the appropriate medium of the relevant agent, its metabolite or an indicator of effect.

**Sk** - Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body.

**Asphx** - Gaseous chemical substances which may not produce significant physiological effects in the exposed employee, but when present in high concentrations will act as simple asphyxiants.

**Sen** - In the workplace respiratory or dermal exposures to sensitising agents may occur. Sensitizers may evoke respiratory or dermal reactions, e.g. asthma, rhinitis and allergic contact dermatitis. The notation does not distinguish between respiratory or dermal sensitisation. Chemical agents that are sensitizers present special problems in the workplace. Should an employee become sensitised, subsequent exposure may cause intense responses, even at low exposure concentrations well below the OELV. Exposure should be eliminated or significantly reduced through control measures such as engineering and process controls and use of PPE. The absence of a SEN note does not signify that the chemical agent lacks the ability to produce a sensitisation but may reflect the lack of, or inconclusiveness of, scientific evidence.



### 3. Calculations

#### 3.1 CONVERSION OF UNITS OF CONCENTRATION (ppm and mg/m<sup>3</sup>)

Concentrations of substances in workplace air can sometimes be expressed in different units. For dusts, fumes and aerosols the units are normally mg/m<sup>3</sup> (except for fibres for which fibres/millilitre or fibres/cm<sup>3</sup> is used). However, gases and vapours tend to be expressed in parts per million of volume (ppm) although the two different units are in common use (mg/m<sup>3</sup> and ppm) and the Occupational Exposure Limit Value will have a different value depending on which unit is chosen.

It is possible to convert from ppm to mg/m<sup>3</sup> and vice versa, but the conversion factor differs from substance to substance and depends on its molecular weight. A formula to allow exact conversions from mg/m<sup>3</sup> to ppm takes the form:

$$\text{ppm} = \frac{\text{mg/m}^3 \times \text{Molar Volume}}{\text{Molecular Weight}}$$

The Molar Volume varies with temperature, but at 25°C (the temperature usually used for OELVs) the formula becomes:

$$\text{ppm} = \frac{\text{mg/m}^3 \times 24.45}{\text{Molecular Weight}}$$

By way of example, 10 mg/m<sup>3</sup> of hydrogen sulphide (molecular weight 34) at 25°C is equivalent to

$$\frac{10 \times 24.45}{34} = 7.2 \text{ ppm}$$

Such conversions are usually rounded off to two significant figures for values below 100 and to three significant figures for values above 100.

#### 3.2 CALCULATIONS FOR MIXTURES

When two or more hazardous substances, which act upon the same target organ, are present, their combined effect, rather than that of either individually, should be taken into account. In the absence of information to the contrary, the effects of the different hazards should be considered as **additive**. That is, if the sum of the following fractions,  $C_1 / \text{OELV}_1 + C_2 / \text{OELV}_2 + C_3 / \text{OELV}_3 + \dots + C_n / \text{OELV}_n$  exceeds 1.0, then the occupational exposure limit of the mixture should be considered as being exceeded.  $C_1$  indicates the observed atmospheric concentration of substance 1, and  $\text{OELV}_1$ , its corresponding occupational exposure limit value.

##### Example - Mixtures/Additive Effect

Workplace air contains 400 ppm of acetone (OELV, 500 ppm), 150 ppm of methyl isopropyl ketone (OELV, 200 ppm) and 100 ppm of methyl ethyl ketone (OELV, 200 ppm).

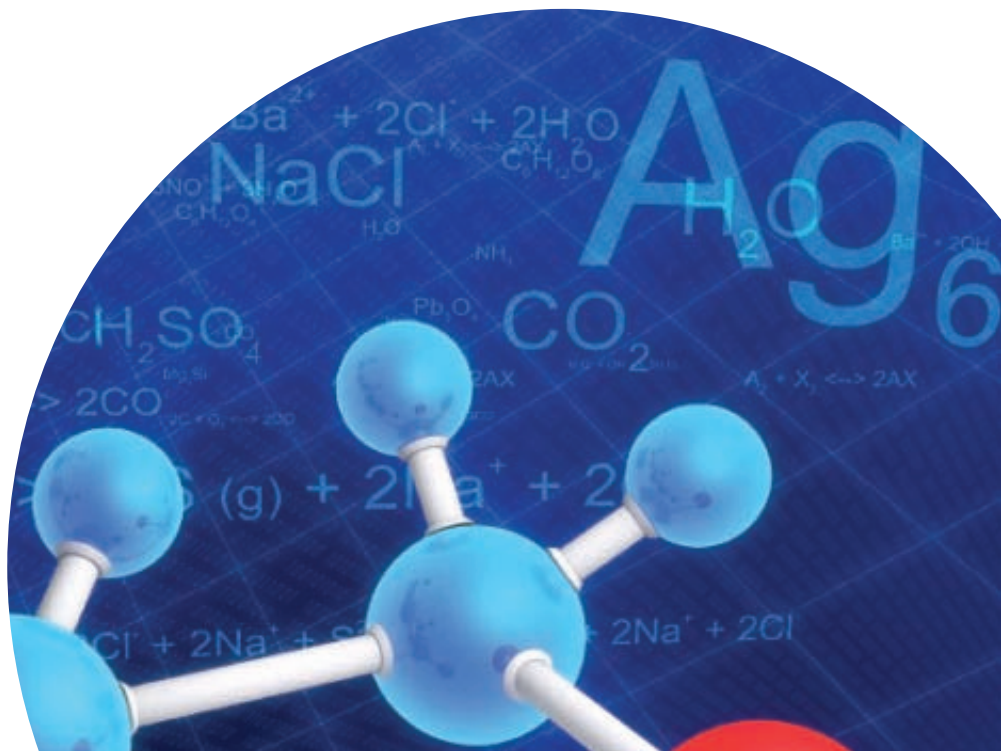
Atmospheric concentration of mixture = 400 + 150 + 100 = 650 ppm of mixture.

$$\begin{aligned} & C_1/\text{OEL}_1 + C_2/\text{OEL}_2 + C_3/\text{OEL}_3 \\ &= 400/500 + 150/200 + 100/200 \\ &= 0.8 + 0.75 + 0.5 \\ &= 2.05 \end{aligned}$$

As the sum exceeds 1.0, the combined Occupational Exposure Limit Value based on an additive effect is exceeded.

Exceptions to the above rule may be made when there is good reason to believe that the principal effects of the different harmful substances are not in fact additive but **independent**, as when purely local effects on different organs of the body are produced by the various components of the mixture. In such cases the occupational exposure limit value for the mixture is exceeded only when at least one member of the series ( $C_1/OELV_1$  or  $C_2/OELV_2$  etc.) itself has a value exceeding unity.

**Synergistic effects**, when substances combine to give a greater effect than expected from simple linear addition, may occur with some combinations of atmospheric contaminants; such cases at present must be determined individually. For example, carbon tetrachloride and alcohol together are more toxic to the liver than expected from the sum of the two individual toxic effects.





## 4. Further Information

1. "Guidelines to the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001", Health and Safety Authority.
2. "Short Guide to the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001", Health and Safety Authority.
3. "Risk Assessment of Chemical Hazards", Health and Safety Authority.
4. "Threshold Limit Values for Chemical Substances and Physical Agents, American Conference of Governmental Industrial Hygienists (ACGIH)".
5. "EH40 Workplace Exposure Limits", Health and Safety Executive, London.
6. "Patty's Industrial Hygiene and Toxicology", Volumes I-III.
7. Radiological Protection Institute of Ireland, 119, Clonskeagh Road, Dublin 14.



## Schedule 1

### List of Chemical Agents and Occupational Exposure Limit Values (OELVs)

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Acetaldehyde	200-836-8	75-07-0	25	45	50	90	-
Acetic acid	200-580-7	64-19-7	10	25	15	37	-
Acetic anhydride	203-564-8	108-24-7	0.5	2.5	2	10	-
Acetone	200-662-2	67-64-1	500	1210	-	-	IOELV
Acetonitrile	200-835-2	75-05-8	40	70	-	-	Sk, IOELV
Acetophenone	202-708-7	98-86-2	10	49	-	-	-
Acetylene	200-816-9	74-86-2	-	-	-	-	Asphx
Acetylene Dichloride	208-750-2	540-59-0	200	790	250	1000	-
Acetylene Tetrabromide, see 1,1,2,2- Tetrabromoethane							
o-Acetylsalicylic acid, ( <i>Aspirin</i> )		200-064-1	50-78-2	-	5	-	- -
Acrolein	203-453-4	107-02-8	0.1	0.25	0.3	0.8	-
Acrylaldehyde, See Acrolein							
Acrylamide	201-173-7	79-06-1	-	0.03	-	-	Sk, C2, Mut2
Acrylic acid	201-177-9	79-10-7	10	30	20	60	-
Acrylonitrile	203-466-5	107-13-1	2	4.5	-	-	Sk, C2
Adipic acid	204-673-3	124-04-9	-	5	-	-	-
Aldrin (ISO)	206-215-8	309-00-2	-	0.25	-	0.75	Sk
Aliphatic hydrocarbon gases							
Alkanes (C1-C4)							
Butane	203-448-7	106-97-8	1000				-
Ethane	200-814-8	74-84-0	1000				Asphx
Methane	200-812-7	74-82-8	1000				Asphx
Propane	200-827-9	74-98-6	1000				Asphx
Allyl alcohol	203-470-7	107-18-6	2	4.8	5	12.1	Sk, IOELV
Allyl chloride	203-457-6	107-05-1	1	3	2	6	-
Allyl 2,3-epoxypropyl ether	203-442-4	106-92-3	5	22	10	44	-
Allyl glycidyl ether (AGE), see Allyl 2,3-epoxypropyl ether							
Allyl propyl disulphide	218-550-7	2179-59-1	0.5				-
Aluminium alkyl compounds	-	-	-	2	-	-	-
Aluminium metal;	231-072-3	7429-90-5					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
welding fume			-	5	-	-	-
Aluminium oxides;	215-691-6	1344-28-1					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Aluminium salts, soluble	-	-	-	2	-	-	-
Aminodimethylbenzene, see Xyldine							
4-Aminodiphenyl	202-177-1	92-67-1	-	-	-	-	Sk, C1
2-Aminoethanol	205-483-3	141-43-5	1	2.5	3	7.6	Sk, IOELV
2-Aminopyridine	207-988-4	504-29-0	0.5	2	2	8	-
3-Amino-1,2,4 Triazole, ( <i>Amitrole</i> )	200-521-5	61-82-5	-	0.2	-	-	-
Ammonia, anhydrous	231-635-3	7664-41-7	20	14	50	36	IOELV
Ammonium chloride, fume	235-186-4	12125-02-9	-	10	-	20	-
Ammonium Perfluorooctanoate	223-320-4	3825-26-1	-	0.01	-	-	Sk
Ammonium sulphamidate	231-871-7	7773-06-0	-	10	-	20	-
n-Amyl acetate, see Pentyl acetate							
Sec-Amyl acetate, see 1-Methyl butyl acetate							



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Tert-Amyl acetate	211-047-3	625-16-1	50	270	100	540	IOELV
Aniline	200-539-3	62-53-3	1	3.8	-	-	Sk
o-Anisidine	201-963-1	90-04-0	0.1	0.5	-	-	Sk, C2
p-Anisidine	203-254-2	104-94-9	0.1	0.5	-	-	Sk
Antimony & compounds (as Sb)	231-146-5	7440-36-0	-	0.5	-	-	-
Araldite PT 810, see Triglycidyl isocyanurate, (TGIC)							
Argon	231-147-0	7440-37-1	-	-	-	-	Asphx
Arsenic & compounds except arsine (as As)	231-148-6	7440-38-2	-	0.01	-	-	C1
Arsine	232-066-3	7784-42-1	0.05	0.2	-	-	-
Asbestos, (all types of asbestos fibre, as listed in Directive 2003/18/EC and implemented by S.I. No. 386 Of 2006)							
Crocidolite		2001-28-4		0.1 fibres/cm <sup>3</sup> of air			BOELV,C1
Amosite		12172-73-5		0.1 fibres/cm <sup>3</sup> of air			BOELV,C1
Chrysotile		12001-29-5		0.1 fibres/cm <sup>3</sup> of air			BOELV,C1
Actinolite		77536-66-4		0.1 fibres/cm <sup>3</sup> of air			BOELV,C1
Anthophyllite		77536-67-5		0.1 fibres/cm <sup>3</sup> of air			BOELV,C1
Tremolite		77536-68-6		0.1 fibres/cm <sup>3</sup> of air			BOELV,C1
Asphalt (Bitumen), petroleum fumes, ( <i>inhalable fraction</i> )	232-490-9	8052-42-4	-	0.5	-	10	-
Aspirin, see o-Acetylsalicylic acid							
Atrazine (ISO)	217-617-8	1912-24-9	-	10	-	-	-
Azinphos-methyl (ISO), see Guthion							
Aziridine, see Ethylenimine							
Azodicarbonamide (C, C'-azodi(formamide))	204-650-8	123-77-3	-	1	-	3	Sen
Barium compounds, (soluble compounds as Ba)	231-149-1	7440-39-3	-	0.5	-	-	IOELV
Barium sulphate, respirable dust	231-784-4	7727-43-7	-	2	-	-	-
Benomyl (ISO)	241-775-7	17804-35-2	-	10	-	15	-
Benz[ $\alpha$ ]anthracene	200-280-6	56-55-3	-	-	-	-	C2
Benzene	200-753-7	71-43-2	1	3	-	-	BOELV, Sk, C1
Benzenethiol	203-635-3	108-98-5	0.5	2	-	-	Sk
Benzene-1,2,4-tricarboxylic acid 1,2-anhydride, see Trimellitic anhydride							
Benzenidene	202-199-1	92-87-5	-	-	-	-	Sk, C1
Benzo[ $\beta$ ]fluoranthene	205-911-9	205-99-2	-	-	-	-	C2
Benzo[ $\alpha$ ]pyrene	200-028-5	50-32-8	-	-	-	-	C2, Mut2, Repro2
p-Benzoquinone, see Quinone							
Benzoyl peroxide, see Dibenzoyl peroxide							
Benzyl butyl phthalate, see Butyl benzyl phthalate							
Benzyl chloride	202-853-6	100-44-7	0.5	2.6	1.5	7.9	C2
Beryllium and beryllium compounds (as Be)	231-150-7	7440-41-7	-	0.0002	-	-	C2
$\gamma$ -BHC (ISO), see -Hexachlorocyclohexane							
Biphenyl	202-163-5	92-52-4	0.2	1.5	0.6	4	-
BCME, see bis(Chloromethyl) ether							



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
2,2-Bis(p-chlorophenyl)-1,1,1-trichloroethane, see 1,1,1-Trichlorobis(chlorophenyl)ethane							
Bis(2,3-epoxypropyl)ether, see Diglycidyl ether (DGE)							
Bis(2-ethylhexyl) Phthalate, see Di-sec-octyl-phthalate							
2,2Bis(p-methoxyphenyl) -1,1,1-trichloroethane, see Methoxychlor[ISO]							
Bismuth telluride	215-135-2	1304-82-1	-	10	-	20	-
Bismuth telluride, selenium-doped	-	-	-	5	-	10	-
Borates, (tetra) sodium							
anhydrous	-	1330-43-4	-	1	-	-	-
decahydrate	-	1303-96-4	-	5	-	-	-
pentahydrate	-	12179-04-3	-	1	-	-	-
Bornan-2-one	200-945-0	76-22-2	2	12	3	18	-
Boron oxide	215-125-8	1303-86-2	-	10	-	20	-
Boron tribromide	233-657-9	10294-33-4	-	-	1	10	-
Boron trifluoride	231-569-5	7637-07-2	-	-	1	3	-
Bromacil (ISO)	206-245-1	314-40-9	1	10	2	20	-
Bromine	231-778-1	7726-95-6	0.1	0.7	-	-	IOELV
Bromine pentafluoride	232-157-8	7789-30-2	0.1	0.7	0.3	2	-
Bromochloromethane	200-826-3	74-97-5	200	1050			-
Bromoethane, see Ethyl bromide							
Bromoethylene, see Vinyl bromide							
Bromoform, see Tribromomethane							
Bromomethane	200-813-2	74-83-9	5	20	15	60	Sk
Bromotrifluoromethane, see Trifluorobromomethane							
Buta-1,3-diene	203-450-8	106-99-0	1	2.2	-	-	C1, Mut2
Butane (see aliphatic hydrocarbon gases)							
Butanethiol	203-705-3	109-79-5	0.5	1.8	-	-	-
Butan-1-ol	200-751-6	71-36-3	-	-	25	75	Sk
Butan-2-ol	201-158-5	78-92-2	100	300	150	450	-
Butan-2-one, see Methyl ethyl ketone (MEK)							
trans But-2-enal	204-647-1	123-73-9	2	6	6	18	-
2-Butoxyethanol (EGBE)	203-905-0	111-76-2	20	98	50	246	Sk, IOELV
2-(2-Butoxyethoxy)ethanol	203-961-6	112-34-5	10	67.5	15	101.2	IOELV
2-Butoxyethyl acetate (EGBEA)	203-933-3	112-07-2	20	133	50	333	Sk, IOELV
Butyl acetate	204-658-1	123-86-4	150	710	200	950	-
sec-Butyl acetate	203-300-1	105-46-4	200	950	250	1190	-
tert-Butyl acetate	208-760-7	540-88-5	200	950	250	1190	-
Butyl acrylate	205-480-7	141-32-2	2	11	10	53	IOELV
n-Butyl alcohol, see Butan-1-ol							
sec-Butyl alcohol, see Butan-2-ol							
tert-Butyl alcohol, see 2-Methyl propan-2-ol							
n-Butylamine	203-699-2	109-73-9	-	-	5	15	Sk
Butyl benzyl phthalate	201-622-7	85-68-7	-	5	-	-	-
n-Butyl chloroformate	209-750-5	592-34-7	1	5.6	-	-	-
tert-Butyl chromate		1189-85-1	-	0.1	-	0.1	-
Butyl-2,3-epoxypropyl ether(BGE)	219-376-4	2426-08-6	25	135	-	-	-



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			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Butyl glycidyl ether, see Butyl-2,3-epoxypropylether							
Butyl lactate	205-316-4	138-22-7	5	25	-	-	-
n-Butyl mercaptan, see Butanethiol							
2-sec- Butylphenol	201-933-8	89-72-5	5	30	-	-	Sk
p-tert Butyltoluene	202-675-9	98-51-1	1	6.1	-	-	-
Cadmium	231-152-8	7440-43-9	-	0.025	-	-	C2
Cadmium compounds, except cadmium oxide fume and cadmium sulphide pigments (as Cd)	-	7440-43-9	-	0.025	-	-	C2
Cadmium oxide fume (as Cd)	215-146-2	1306-19-0	-	0.025	-	0.05	C2
Cadmium sulphide and cadmium sulphide pigments, respirable dust (as Cd)	215-147-8	1306-23-6	-	0.03	-	-	-
Caesium hydroxide	244-344-1	21351-79-1	-	2	-	-	-
Calcium carbonate total inhalable dust respirable dust	215-279-6	1317-65-3	-	10 4	-	-	-
Calcium chromate (as Cr)	237-366-8	13765-19-0	-	0.001	-	-	C2
Calcium cyanamide	205-861-8	156-62-7	-	0.5	-	1	-
Calcium hydroxide	215-137-3	1305-62-0	-	5	-	-	-
Calcium oxide	215-138-9	1305-78-8	-	2	-	-	-
Calcium silicate total inhalable dust respirable dust	215-710-8	1344-95-2	-	10 4	-	-	-
Calcium sulphate	231-900-3	7778-18-9	-	10	-	-	-
Camphor, synthetic, see Bornan-2-one							
ε-Caprolactam	203-313-2	105-60-2	-	10	-	40	IOELV
Captafol (ISO)	219-363-3	2425-06-1	-	0.1	-	-	Sk, C2
Captan (ISO)	205-087-0	133-06-2	-	5	-	15	-
Carbaryl (ISO)	200-555-0	63-25-2	-	5	-	10	-
Carbofuran (ISO)	216-353-0	1563-66-2	-	0.1	-	-	-
Carbon black	215-609-9	1333-86-4	-	3.5	-	7	-
Carbon dioxide	204-696-9	124-38-9	5000	9000	-	-	IOELV
Carbon disulphide	200-843-6	75-15-0	10	30	-	-	Sk,
Carbon monoxide	211-128-3	630-08-0	20	23	100	115	Repro1
Carbon tetrabromide	209-189-6	558-13-4	0.1	1.4	0.3	4	-
Carbon tetrachloride	200-262-8	56-23-5	2	12.6	-	-	Sk
Carbonyl chloride, see Phosgene							
Carbonyl fluoride	206-534-2	353-50-4	2	5.4	5	13	-
Catechol	204-427-5	120-80-9	5	20	-	-	-
Cellulose total inhalable dust respirable dust	232-674-9	9004-34-6	- -	10 4	- -	20 -	- -
Cement(Portland) total inhalable dust respirable dust	266-043-4	65997-15-1	- -	10 4	- -	- -	- -
Chlordane (ISO)	200-349-0	57-74-9	-	0.5	-	2	Sk
Chlorinated biphenyls (42% chlorine)	215-648-1	1336-36-3	-	0.1	-	-	Sk
(54% chlorine)		53469-21-9	-	0.1	-	-	
		11097-69-1	-	0.1	-	-	
Chlorine	231-959-5	7782-50-5	-	-	0.5	1.5	IOELV
Chlorine dioxide	233-162-8	10049-04-4	0.1	0.3	0.3	0.9	-
Chlorine trifluoride	232-230-4	7790-91-2	-	-	0.1	0.4	-
Chloroacetaldehyde	203-472-8	107-20-0	-	-	1	3	-

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Chloroacetone	201-161-1	78-95-5	1	3.8	1	3.8	Sk
2-Chloroacetophenone	208-531-1	532-27-4	0.05	0.3	-	-	-
Chloroacetyl chloride	201-171-6	79-04-9	0.05	0.2	-	-	-
Chlorobenzene (as monochlorobenzene)	203-628-5	108-90-7	5	23	15	70	IOELV
o-Chlorobenzylidene malonitrile	220-278-9	2698-41-1	0.05	0.39	0.05	0.39	Sk
Chlorobromomethane, see Bromochloromethane							
2-Chlorobuta-1,3-diene, see β-Chloroprene							
Chlorodifluoromethane, see Difluorochloromethane							
1-Chloro-2,3-epoxypropane, see Epichlorohydrin							
Chloroethane, see Ethyl chloride							
2-Chloroethanol, see Ethylene chlorohydrin							
Chloroethylene, see Vinyl chloride							
Chloroform	200-663-8	67-66-3	2	9.8	-	-	Sk, IOELV
Chloromethane	200-817-4	74-87-3	50	105	100	210	-
Bis(Chloromethyl) ether	208-832-8	542-88-1	0.001	0.005	-	-	C1
Chloromethyl methyl ether	203-480-1	107-30-2	-	-	-	-	C1
1-Chloro-4-nitrobenzene	202-809-6	100-00-5	-	1	-	2	Sk
1-Chloro-1-nitropropane	209-990-0	600-25-9	2	10	-	-	-
Chloropentafluoroethane	200-938-2	76-15-3	1000	6320	-	-	-
Chloropicrin	200-930-9	76-06-2	0.1	0.7	0.3	2	-
β-Chloroprene	204-818-0	126-99-8	10	36	-	-	Sk
3-Chloropropene, see Allyl chloride							
o-Chlorostyrene	218-026-8	2039-87-4	50	283	75	425	-
Chlorosulphonic acid	232-234-6	7790-94-5	-	1	-	-	-
α-Chlorotoluene, see Benzyl chloride							
2-Chlorotoluene	202-424-3	95-49-8	50	250	-	-	-
2-Chloro-6-(trichloromethyl) pyridine, see Nitrapyrin							
Chlorpyrifos (ISO)	220-864-4	2921-88-2	-	0.2	-	0.6	Sk
Chromium metal	231-157-5	7440-47-3	-	2	-	-	IOELV
Chromium (II) compounds (as Cr)	-	-	-	2	-	-	IOELV
Chromium (III) compounds (as Cr)	-	-	-	2	-	-	IOELV
Chromium (VI) compounds (as Cr)							
Water Soluble				0.05			
Insoluble				0.01			
Chromyl Chloride	239-056-8	14977-61-8	0.025	0.16	-	-	C2, Mut2
Coal dust, respirable dust	-	-	1.6				
Anthracite			0.4				
Bituminous			0.9				
Coal tar pitch volatiles, (as cyclohexane solubles)	266-028-2	65996-93-2	-	0.14	-	-	-
Cobalt & cobalt compounds (as Co)	231-158-0	7440-48-4	-	0.1	-	-	Sen
Copper (as Cu)	231-159-6	7440-50-8					
Fume			-	0.2	-	-	-
Dusts and mists (as Cu)			-	1	-	2	-
Cotton dust (raw or waste cotton)	-	-	-	2.5	-	-	-



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Cresols, all isomers	215-293-2	1319-77-3	5	22	-	-	Sk
Cristobalite, respirable dust, (see Silica, Crystalline)	238-455-4	14464-46-1		0.1	-	-	-
Crotonaldehyde, see trans But-2-enal	224-030-0	417-30-0	2	6	6	18	-
Crufomate	206-083-1	299-86-5	-	5	-	-	-
Cryofluorane, see 1,2-Dichlorotetrafluoroethane							
Cumene, see Isopropylbenzene							
Cyanamide	206-992-3	420-04-2	0.58	1	-	-	Sk, IOELV
Cyanides, except hydrogen cyanide, cyanogen and cyanogen chloride, (as -CN)	-	57-12-5	-	5	-	-	Sk
Cyanogen	207-306-5	460-19-5	10	20	-	-	-
Cyanogen chloride	208-052-8	506-77-4	-	-	0.3	0.6	-
Cyclohexane	203-806-2	110-82-7	200	700	-	-	IOELV
Cyclohexanol	203-630-6	108-93-0	50	200	-	-	-
Cyclohexanone	203-631-1	108-94-1	10	40.8	20	81.6	Sk, IOELV
Cyclohexene	203-807-8	110-83-8	300	1015	-	-	-
Cyclohexylamine	203-629-0	108-91-8	10	40	-	-	Sk
Cyclonite, see Hexahydro-1,3,5-trinitro-1,3,5 triazine							
Cyclopentadiene	208-835-4	542-92-7	75	203	-	-	-
Cyclopentane	206-016-6	287-92-3	600	1720	-	-	-
Cyhexatin (ISO), see Tricyclohexyltin hydroxide							
2,4-D (ISO ), see 2,4-Dichlorophenoxyacetic acid							
DDM, see 4-4'							
Diaminodiphenylmethane							
DDT, see 1,1,1-Trichlorobis (chlorophenyl) ethane							
DDVP, see Dichlorvos (ISO)							
Decaborane	241-711-8	17702-41-9	0.05	0.25	0.15	0.75	Sk
Demeton		8065-48-3	0.01	0.11			Sk
2,4-DES, see 2-(2,4-Dichlorophenoxy)ethyl hydrogen sulphate							
Derris, commercial, see Rotenone							
Diacetone alcohol	204-626-7	123-42-2	50	240	75	360	-
Dialkyl 79 phthalate	-	-	-	5	-	-	-
Diallyl phthalate	205-016-3	131-17-9	-	5	-	-	-
2,2-Diaminodiethylamine, see Diethylene triamine							
4,4-Diaminodiphenyl- methane (DADPM)	202-974-4	101-77-9	0.01	0.08	-	-	Sk C2
1,2-Diaminoethane, see Ethylenediamine							
Diammonium peroxodisulphate (measured as [S <sup>2</sup> O <sup>8</sup> ]) See Persulphate salts							
Diatomaceous earth, natural, respirable dust	272-489-0	68855-54-9	-	1.2	-	-	-
Diazinon (ISO)	206-373-8	333-41-5	-	0.1	-	0.3	Sk
Diazomethane	206-382-7	334-88-3	0.2	0.4	-	-	C2
Dibenzoyl peroxide	202-327-6	94-36-0	-	5	-	-	-

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Dibismuth tritelluride, see Bismuth telluride							
Dibismuth tritelluride, selenium doped, see Bismuth telluride selenium doped							
Diborane	242-940-6	19287-45-7	0.1	0.1	-	-	-
Diboron trioxide, see Boron oxide							
Dibrom, see 1,2 Dibromo-2, 2 dichloro ethyl dimethyl phosphate (Naled)							
1,2 Dibromo-2,2 dichloro ethyl dimethyl phosphate	206-098-3	300-76-5	-	3	-	6	-
Dibromodifluoromethane, see Difluorodibromomethane							
1,2 Dibromoethane, see Ethylene dibromide							
2-N-Dibutylaminoethanol	203-057-1	102-81-8	2	14	-	-	Sk
Dibutyl hydrogen phosphate	203-509-8	107-66-4	1	5	2	10	-
Dibutyl phenyl phosphate	219-772-7	2528-36-1	0.3	3.5	-	-	Sk
Di-n-butyl phosphate, see Dibutyl hydrogen phosphate							
Dibutyl phthalate	201-557-4	84-74-2	-	5	-	10	Repro2
6,6'-di-tert-butyl-4,4'-thio-di-m-cresol	202-525-2	96-69-5	-	10	-	20	-
Dichloroacetylene		7572-29-4	-	-	0.1	0.4	-
1,2 Dichlorobenzene	202-425-9	95-50-1	20	122	50	306	Sk, IOELV
1,4-Dichlorobenzene	203-400-5	106-46-7	20	122	50	306	IOELV
3,3-Dichlorobenzidine	202-109-0	91-94-1	-	-	-	-	C2
1,4-Dichloro-2-butene	212-121-8	764-41-0	0.005	0.025	-	-	Sk, C2
Dichlorodifluoromethane	200-893-9	75-71-8	1000	4950	1250	6200	-
1,3-Dichloro-5,5-dimethyl-hydantoin	204-258-7	118-52-5	-	0.2	-	0.4	-
Dichlorodiphenyltrichloroethane, see 1,1,1'-Trichlorobis (chlorophenyl) ethane							
1,1-Dichloroethane	200-863-5	75-34-3	100	412	-	-	Sk, IOELV
1,2-Dichloroethane	203-458-1	107-06-2	5	20	10	40	Sk, C2
1,1-Dichloroethylene	200-864-0	75-35-4	5	20	-	-	-
1,2-Dichloroethylene (cis:trans isomers 60:40), see Acetylene dichloride							
Dichloroethyl ether	203-870-1	111-44-4	5	29	10	58	Sk
Dichlorofluoromethane	200-869-8	75-43-4	10	40	-	-	-
Dichloromethane	200-838-9	75-09-2	50	174	150	550	Sk
2,2'-Dichloro-4, 4' methylene-dianiline (MBOCA), see 4,4' Methylene bis-[2-chloroaniline]							
1,1-Dichloro-1-nitroethane	209-854-0	594-72-9	2	12	-	-	-
2,4-Dichlorophenoxyacetic acid [2,4-D (ISO)]	202-361-1	94-75-7	-	10	-	20	-
2-(2,4-dichlorophenoxy)ethyl hydrogen sulphate and sodium 2-(2,4dichlorophenoxy) ethyl sulphate	205-259-5	149-26-8	-	10	-	20	-
1,3-Dichloropropene, cis and trans isomers	208-826-5	542-75-6	1	5	10	50	Sk



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Dichloropropionic acid	200-923-0	75-99-0	1	5.8	-	-	-
1,2-Dichlorotetrafluoroethane	200-937-7	76-14-2	1000	7000	1250	8750	-
Dichlorvos (ISO)	200-547-7	62-73-7	0.1	1	0.3	3	Sk
Dicrotophos	205-494-3	141-66-2	-	0.25	-	-	Sk
Dicyclohexyl phthalate	201-545-9	84-61-7	-	5	-	-	-
Dicyclopentadiene	201-052-9	77-73-6	5	30	-	-	-
Dicyclopentadienyl iron, see Ferrocene							
Dieldrin (ISO)	200-484-5	60-57-1	-	0.25	-	0.75	Sk
Diesel exhaust (particulate) (<0.1µm)	-	-	-	0.15	-	-	-
Diesel fuel/kerosene	-	-	-	100	-	-	-
Diethanolamine	203-868-0	111-42-2	3	15	-	-	-
Diethylamine	203-716-3	109-89-7	5	15	10	30	IOELV
2-Diethylaminoethanol	202-845-2	100-37-8	10	50	-	-	Sk
Diethylene glycol	203-872-2	111-46-6	23	100	-	-	-
Diethylene triamine	203-865-4	111-40-0	1	4	-	-	Sk
Diethyl ether, see Ether							
Di-(2-ethylhexyl) phthalate, see Di-sec-octyl-phthalate							
Diethyl ketone, see Pentan-3-one							
Diethyl phthalate	201-550-6	-	-	5	-	10	-
Diethyl sulphate	200-589-6	64-67-5	0.05	-	-	-	Sk, C2, Mut2
Difluorochloromethane	200-871-9	75-45-6	1000	3600	-	-	IOELV
Difluorodibromomethane	200-885-5	75-61-6	100	860	150	1290	-
Difluorodichloromethane, see Dichlorodifluoromethane							
Diglycidyl ether (DGE)	218-802-6	2238-07-5	0.1	0.6	-	-	-
Dihydrogen selenide (as Se)	231-978-9	7783-07-5	0.02	0.07	0.05	0.17	IOELV
m-Dihydroxybenzene, see Resorcinol							
o-Dihydroxybenzene, see Catechol							
p-Dihydroxybenzene, see Hydroquinone							
1,2-Dihydroxyethane, see 1,2-Ethane diol							
Diisobutyl ketone	203-620-1	108-83-8	25	150	-	-	-
Diisobutyl phthalate	201-553-2	84-69-5	-	5	-	-	-
Diisodecyl phthalate	247-977-1	26761-40-0	-	5	-	-	-
Diisononyl phthalate	249-079-5	28553-12-0	-	5	-	-	-
Diisooctyl phthalate	248-523-5	27554-26-3	-	5	-	-	-
Diisopropylamine	203-558-5	108-18-9	5	20	-	-	Sk
Diisopropyl ether, see Isopropyl ether							
Di-linear 79 phthalate	-	-	-	5	-	-	-
Dimethoxymethane, see Methylal							
N,N'-Dimethylacetamide	204-826-4	127-19-5	10	36	20	72	Repro2, Sk, IOELV
Dimethylamine	204-697-4	124-40-3	2	3.8	5	9.4	IOELV
N,N-Dimethylaniline	204-493-5	121-69-7	5	25	10	50	Sk
1,3-Dimethylbutyl acetate	203-621-7	108-84-9	50	300	100	600	-
Dimethyl carbamoyl chloride	201-208-6	79-44-7	-	-	-	-	C2
Dimethyl disulphide	210-871-0	624-92-0	5	-	-	-	-
Dimethyl ether	204-065-8	115-10-6	1000	1920	-	-	IOELV
N,N-Dimethylethylamine	209-940-8	598-56-1	10	30	15	45	-
Dimethylformamide	200-679-5	68-12-2	10	30	20	60	Sk, Repro2,

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
2,6-Dimethylheptan-4-one, see Di-isobutyl ketone							
Dimethylhydrazine	200-316-0	57-14-7	0.5	1.2	-	-	C2
Dimethyl phthalate	205-011-6	131-11-3	-	5	-	10	-
Dimethyl sulphate	201-058-1	77-78-1	0.1	0.5	0.1	0.5	Sk, C2
Dimethyl sulphide	200-846-2	75-18-3	20	-	-	-	-
Dimethylethoxysilane	238-921-7	14857-34-2	0.5	-	1.5	-	-
Dinitolmide	205-706-4	148-01-6	-	5	-	-	-
Dinitrobenzene, all isomers	246-673-6	25154-54-5	0.15	1	0.5	3	Sk
Dinitro-o-cresol	208-601-1	534-52-1	-	0.2	-	0.6	Sk
Dinitrotoluene	246-836-1	25321-14-6	-	0.2	-	5	C2, Sk
Dinonyl phthalate	201-560-0	84-76-4	-	5	-	-	-
1,4-Dioxane, tech. Grade	204-661-8	123-91-1	20	73	-	-	Sk,
Dioxathion (ISO)	201-107-7	78-34-2	-	0.2	-	-	Sk
1,3-Dioxolane	211-463-5	646-06-0	20	-	-	-	-
Diphenyl, see Biphenyl							
Diphenylamine	204-539-4	122-39-4	-	10	-	20	-
Diphenyl ether (vapour)	202-981-2	101-84-8	1	7	-	-	-
Diphosphorus pentoxide	215-236-1	1314-56-3	-	1	-	-	IOELV
Diphosphorus pentasulphide, see Phosphorus pentasulphide							
Dipotassium peroxodisulphate (measured as [S <sup>2O8</sup> ]); see Persulphate salts, potassium							
Dipropylene glycol methyl ether, see [2-Methoxymethyl ethoxy]-1-propanol							
Dipropyl ketone	204-608-9	123-19-3	50	233	-	-	-
Diquat dibromide(ISO)	201-579-4	85-00-7	-	0.5	-	1	-
Di-sec-octyl phthalate	204-211-0	117-81-7	-	5	-	10	Repro 2
Disodium disulphite	231-673-0	7681-57-4	-	5	-	-	-
Disodium peroxodisulphate (measured as S <sup>2O8</sup> ); see Persulphate salts, sodium							
Disodium tetraborate, anhydrous, decahydrate & pentahydrate, see Borates (tetra) sodium							
Disulfoton (ISO)	206-054-3	298-04-4	-	0.1	-	0.3	-
Disulphur dichloride, see Sulphur monochloride							
Disulphur decafluoride	227-204-4	5714-22-7	0.025	0.25	0.075	0.75	-
2,6-Ditertiary-butyl-para- cresol	204-881-4	128-37-0	-	10	-	-	-
Diuron (ISO)	206-354-4	330-54-1	-	10	-	-	-
Divanadium pentaoxide (as V), total inhalable fraction	215-239-8	1314-62-1	-	0.05	-	-	-
Divinylbenzene	203-595-7	108-57-6	10	50	-	-	-
DMDT, see Methoxychlor (ISO)							
Dodecyl mercaptan	203-984-1	112-55-0	0.1	-	-	-	-
Dusts non-specific total inhalable	-	-	-	10	-	-	-
respirable			-	4	-	-	-
Emery total inhalable dust	-	1302-74-5	-	10	-	-	-
respirable dust			-	4	-	-	-
Endosulfan (ISO)	204-079-4	115-29-7	-	0.1	-	0.3	Sk
Endrin (ISO)	200-775-7	72-20-8	-	0.1	-	0.3	Sk



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Enflurane	237-553-4	13838-16-9	50	380	-	-	-
Epichlorohydrin	203-439-8	106-89-8	0.5	2	1.5	6	Sk, C2
1,2 Epoxy-4-epoxyethylcyclohexane, see Vinylcyclohexene dioxide							
2,3-Epoxypropyl isopropyl ether, see Isopropyl glycidyl ether							
Ethane (see aliphatic hydrocarbon gases)							
Ethane-1,2-diol, particulate vapour	203-473-3	107-21-1	-	10	-	-	Sk IOELV
Ethanthiol	200-837-3	75-08-1	0.5	1	2	3	-
Ethanol	200-578-6	64-17-5	1000	1900	-	-	-
Ethanolamine, see 2-Amino ethanol							
Ether	200-467-2	60-29-7	100	308	200	616	IOELV
2-Ethoxyethanol	203-804-1	110-80-5	5	18	-	-	Sk, Repro2,
2-Ethoxyethyl acetate	203-839-2	111-15-9	10	54	-	-	Sk, Repro2,
Ethyl acetate	205-500-4	141-78-6	200	-	400	-	-
Ethyl acrylate	205-438-8	140-88-5	5	20	15	60	Sk,
Ethyl alcohol, see Ethanol							
Ethylamine	200-834-7	75-04-7	5	9.4	-	-	IOELV
Ethyl amyl ketone, see 5-Methylheptan-3-one							
Ethylbenzene	202-849-4	100-41-4	100	442	200	884	Sk, IOELV
Ethyl bromide	200-825-8	74-96-4	5	22	-	-	Sk
Ethyl butyl ketone, see Heptan-3-one							
Ethyl chloride	200-830-5	75-00-3	100	268	-	-	IOELV
Ethyl chloroformate	208-778-5	541-41-3	1	4.4	-	-	-
Ethyl cyanoacrylate	230-391-5	7085-85-0	0.2	-	-	-	-
Ethylene	200-815-3	74-85-1	200	-	-	-	Asphx.
Ethylene chlorohydrin	203-459-7	107-07-3	-	-	1	3	Sk
Ethylenediamine	203-468-6	107-15-3	10	25	-	-	Sen
Ethylene dibromide	203-444-5	106-93-4	0.5	4	-	-	Sk, C2
Ethylene dichloride, see 1,2-Dichloroethane							
Ethylene dinitrate, see Ethylene glycol dinitrate							
Ethylene glycol, particulate & vapour, see Ethane-1,2-diol							
Ethylene glycol dinitrate	211-063-0	628-96-6	0.2	1.3	0.2	1.3	Sk
Ethylene glycol monobutyl ether, see 2-Butoxyethanol							
Ethylene glycol monoethyl ether acetate, see 2-Ethoxyethyl acetate							
Ethylene glycol monoethyl ether, see 2-Ethoxyethanol							
Ethylene glycol monomethyl ether acetate, see 2-Methoxyethyl acetate							
Ethylene glycol monomethyl ether, see 2-Methoxyethanol							
Ethylenimine	205-793-9	151-56-4	0.5	1	-	-	Sk, C2, Mut2
Ethylene oxide	200-849-9	75-21-8	5	10	-	-	C2, Mut2



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Ethyl ether, see Ether							
Ethyl formate	203-721-0	109-94-4	100	300	150	450	-
Ethyl hexanoic acid	205-743-6	149-57-5	-	4	-	-	-
2-Ethylhexyl chloroformate	246-278-9	24468-13-1	1	7.9	-	-	-
Ethylidene dichloride, see 1,1-Dichloroethane							
Ethyl mercaptan, see Ethanethiol							
4-Ethylmorpholine	202-885-0	100-74-3	5	23	20	95	Sk
Ethyl silicate	201-083-8	78-10-4	10	85	30	255	-
Fenchlorphos (ISO), see Ronnel							
Ferbam (ISO)	238-484-2	14484-64-1	-	10	-	20	-
Ferrocene	203-039-3	102-54-5	-	10	-	20	-
Ferrovandium Dust	-	12604-58-9	-	1	-	3	-
Flour dust	-	-	-	1	-	-	Sen
Fluoride (as F)	-	16984-48-8	-	2.5	-	-	-
Fluorides, inorganic	-	-	-	2.5	-	-	IOELV
Fluorine	231-954-8	7782-41-4	1	1.58	2	3.16	IOELV
Fluorodichloromethane, see Dichlorofluoromethane							
Fluorotrichloromethane, see Trichlorofluoromethane							
Formaldehyde	200-001-8	50-00-0	2	2.5	2	2.5	
Formamide	200-842-0	75-12-7	20	30	30	45	Repro2
Formic acid	200-579-1	64-18-6	5	9	-	-	IOELV
2-Furaldehyde (Furfural)	202-627-7	98-01-1	2	8	5	20	Sk
Furfuryl alcohol	202-626-1	98-00-0	5	20	15	60	Sk
Germane	231-961-6	7782-65-2	0.2	0.6	0.6	1.8	-
Germanium tetrahydride, see Germane							
Glutaraldehyde	203-856-5	111-30-8	-	-	0.05	0.2	Sen
Glycerol, mist	200-289-5	56-81-5	-	10	-	-	-
Glycerol trinitrate	200-240-8	55-63-0	0.2	2	0.2	2	Sk
Glycidol	209-128-3	556-52-5	2	6	-	-	C2, Repro2
Glycol mono ethyl ether, see 2-ethoxyethanol							
Grain dust	-	-	-	10	-	-	Sen
Graphite	231-153-3	7440-44-0					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Guthion	201-676-1	86-50-0	-	0.2	-	0.6	Sk
Gypsum		10101-41-4					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Halothane	205-796-5	151-67-7	10	80	-	-	-
γ-HCH (ISO), see γ Hexachlorocyclohexane							
Helium	231-168-5	7440-59-7	-	-	-	-	Asphx
Hafnium	231-166-4	7440-58-6	-	0.5	-	1.5	-
Heptachlor (ISO)	200-962-3	76-44-8	-	0.5	-	2.0	Sk
n-Heptane	205-563-8	142-82-5	500	2085	-	-	IOELV
Heptan-2-one	203-767-1	110-43-0	50	238	100	475	Sk, IOELV
Heptan-3-one	203-388-1	106-35-4	20	95	-	-	IOELV
Hexachlorobutadiene	201-765-5	87-68-3	0.02	0.21	-	-	Sk
γ-Hexachlorocyclohexane	210-168-9	608-73-1	-	0.5	-	1.5	Sk
Hexachlorocyclopentadiene	201-029-3	77-47-4	0.1	0.11	-	-	-



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Hexachloroethane vapour	200-666-4	67-72-1	5	50	-	-	-
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Hexachloronaphthalene	215-641-3	1335-87-1	-	0.2	-	-	Sk
Hexafluoroacetone	211-676-3	684-16-2	0.1	0.68	-	-	Sk
Hexahydrophthalic anhydride	201-604-9	85-42-7	-	-	-	0.005	Sen
All isomers (Inhalable)	236-086-3 238-009-9	13149-00-3 14166-21-3					
Hexahydro-1,3,5-trinitro-1,3,5-triazine	204-500-1	121-82-4	-	1.5	-	3	Sk
Hexamethylene diisocyanate (as -NCO)	212-485-8	822-06-0	-	0.02	-	0.07	Sen
Hexane, all isomers except n-hexane	-	-	500	1800	1000	3600	-
n-Hexane	203-777-6	110-54-3	20	72	-	-	IOELV
1,6 Hexanediamine	204-679-6	124-09-4	0.5	2.3	-	-	-
1,6 Hexanolactam, dust & vapour: See ε-Caprolactam)							
Hexan-2-one	209-731-1	591-78-6	5	20	-	-	Sk
Hexone, see Methyl isobutyl ketone							
Hexylene glycol	203-489-0	107-41-5	25	125	25	125	-
Hydrazine	206-114-9	302-01-2	0.01	0.01	-	-	Sk, C2
Hydrazoic acid (as vapour)	231-965-8	7782-79-8	-	-	0.1	-	-
Hydrogen	215-605-7	1333-74-0	-	-	-	-	Asphx.
Hydrogenated terphenyls	262-967-7	61788-32-7	0.5	4.9	-	-	-
Hydrogen bromide	233-113-0	10035-10-6	-	-	2	6.6	IOELV
Hydrogen chloride	231-595-7	7647-01-0	5	8	10	15	IOELV
Hydrogen cyanide	200-821-6	74-90-8	-	-	10	10	Sk
Hydrogen fluoride (as F)	231-634-8	7664-39-3	1.8	1.5	3	2.5	Sk, IOELV
Hydrogen peroxide	231-765-0	7722-84-1	1	1.5	2	3	-
Hydrogen selenide (as Se), see dihydrogen selenide							
Hydrogen sulphide	231-977-3	7783-06-4	5	7	10	14	
Hydroquinone	204-617-8	123-31-9		0.5		-	-
4-Hydroxy-4-methyl-pentan-2-one, see Diacetone alcohol							
2-Hydroxypropyl acrylate	213-663-8	999-61-1	0.5	3	-	-	Sk
2,2'-Iminodiethanol, see Diethanol amine							
2,2'-Iminodi (ethylamine), see Diethylene triamine							
Indene	202-393-6	95-13-6	10	45	15	70	-
Indium & Compounds (as In)	231-180-0	7440-74-6	-	0.1	-	0.3	-
INN, see 1,2-Dichlorotetrafluoroethane							
Iodine	231-442-4	7553-56-2	-	-	0.1	1	-
Iodoform	200-874-5	75-47-8	0.6	10	1	20	-
Iodomethane, see methyl iodide							
Iron oxide, fume (as Fe)	215-168-2	1309-37-1	-	5	-	10	-
Iron pentacarbonyl, see Pentacarbonyl iron (as Fe)							
Iron salts (as Fe)	-	-	-	1	-	2	-
Isoamyl acetate, see isopentyl acetate							
Isoamyl alcohol	204-633-5	123-51-3	100	360	125	450	-

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Isoamyl methyl ketone	203-737-8	110-12-3	20	95	-	-	Sk, IOELV
Isobutyl acetate	203-745-1	110-19-0	150	700	187	875	-
Isobutyl alcohol	201-148-0	78-83-1	50	150	75	225	-
Isobutyl methyl ketone, see methyl isobutyl ketone							
Isocyanates (all, as -NCO)	-	-	-	0.02	-	0.07	Sen
Isoflurane	247-897-7	26675-46-7	50	380	-	-	-
Isooctyl alcohol (mixed isomers)	248-133-5	26952-21-6	50	270	-	-	-
Isopentyl acetate	204-662-3	123-92-2	50	260	100	520	IOELV
Isophorone, see 3,5,5-trimethyl cyclohex-2-enone							
Isophorone diisocyanate (IPDI) (as -NCO)	223-861-6	4098-71-9	-	0.02	-	0.07	Sen
Isopropoxyethanol	203-685-6	109-59-1	25	106	-	-	Sk
Isopropyl acetate	203-561-1	108-21-4	100	-	200	-	-
Isopropyl alcohol	200-661-7	67-63-0	200	-	400	-	Sk
Isopropylamine	200-860-9	75-31-0	5	12	10	24	-
n-Isopropylaniline	212-196-7	768-52-5	2	11	-	-	Sk
Isopropyl benzene	202-704-5	98-82-8	20	100	50	250	Sk, IOELV
Isopropyl chloroformate	203-563-2	108-23-6	1	5	-	-	-
Isopropyl ether	203-560-6	108-20-3	250	1050	310	1320	-
Isopropyl glycidyl ether (IGE)	223-672-9	4016-14-2	50	240	75	360	-
Kaolin, respirable dust		1332-58-7	-	2	-	-	-
Ketene	207-336-9	463-51-4	0.5	0.9	1.5	3	-
Lead (CAS No.:7439-92-1) and its compounds (except tetraethyl lead); [see Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No.619 of 2001)]	-	-	-	0.15	-	-	Repro1, BOELV
Limestone, see Calcium carbonate							
Lindane, see $\gamma$ hexachlorocyclohexane							
Liquefied petroleum gas (LPG)	270-704-2	68476-85-7	1000	1800	1250	2250	-
Lithium hydride	231-484-3	7580-67-8	-	0.025	-	-	-
Lithium hydroxide	215-183-4	1310-65-2	-	-	-	1	-
Magnesite	208-915-9	546-93-0	-	-	-	-	-
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Magnesium oxide	215-171-9	1309-48-4	-	-	-	-	-
respirable dust			-	4	-	-	-
fume			-	5	-	10	-
total inhalable dust			-	10	-	-	-
Malathion (ISO)	204-497-7	121-75-5	-	10	-	-	Sk
Maleic anhydride	203-571-6	108-31-6	0.1	-	-	-	Sen
Manganese, fume (as Mn)	231-105-1	7439-96-5	-	1	-	3	-
Manganese and compounds (as Mn)	231-105-1	7439-96-5	-	0.2	-	-	-
Manganese cyclopentadienyl tricarbonyl	235-142-4	12079-65-1	-	0.1	-	0.3	Sk
Manganese tetraoxide, see Trimanganese tetraoxide							



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Machinemade mineral fibre (excluding refractory ceramic fibres) (MMMMF)	-	-	1 fibres per milli litre of air	5	-	-	-
Marble, see Calcium carbonate							
MbOCA, See 4,4'-Methylenebis-(2-chloroaniline)							
MDA, see 4-4' - methylenedianiline							
MDI, see 4-4' -methylene-diphenyl diisocyanate							
Mequinol, see 4-methoxyphenol							
Mercaptoacetic acid	200-677-4	68-11-1	1	5	-	-	-
Mercury alkyls [as Hg]	-	-	-	0.01	-	0.03	Sk
Mercury & divalent inorganic mercury compounds	-	7439-97-6	-	0.025	-	-	-
Mesitylene (also 1,3,5 trimethylbenzene)	203-604-4	108-67-8	20	100	-	-	IOELV
Mesityl oxide	205-502-5	141-79-7	15	60	25	100	-
Methacrylic acid	201-204-4	79-41-4	20	70	40	140	-
Methacrylonitrile	204-817-5	126-98-7	1	2.8	-	-	Sk
Methane (see aliphatic hydrocarbon gases)							
Methanethiol	200-822-1	74-93-1	0.5	1	-	-	-
Methanol	200-659-6	67-56-1	200	260	-	-	Sk, IOELV
Methomyl (ISO)	240-815-0	16752-77-5	-	2.5	-	-	Sk
Methoxychlor (ISO)	200-779-9	72-43-5	-	10	-	-	-
2-Methoxyethanol	203-713-7	109-86-4	5	16	-	-	Sk, Repro 2,
2-[2-Methoxyethoxy]ethanol	203-906-6	111-77-3	10	50.1	-	-	Sk, IOELV
2-Methoxyethyl acetate	203-772-9	110-49-6	5	24	-	-	Sk, Repro 2,
2-Methoxy-1-methylethylacetate	203-603-9	108-65-6	50	275	100	550	Sk, IOELV
[2-Methoxymethylethoxy]-l-propanol	252-104-2	34590-94-8	50	308	-	-	Sk, IOELV
4-Methoxyphenol	205-769-8	150-76-5	-	5	-	-	-
1-Methoxypropan-2-ol, see Propylene glycol monomethyl ether							
Methyl acetate	201-185-2	79-20-9	200	610	250	760	-
Methyl acetylene	200-828-4	74-99-7	1000	1610	-	-	-
Methyl acrylate	202-500-6	96-33-3	2	7	-	-	Sk,
Methylacrylonitrile, see methacrylonitrile							
Methylal	203-714-2	109-87-5	1000	3100	1250	3880	
Methyl alcohol, see Methanol							
Methylamine	200-820-0	74-89-5	10	12	-	-	-
Methyl-n-amyl-ketone, see Heptan-2-one							
N-Methylaniline	202-870-9	100-61-8	0.5	2	-	-	Sk
Methyl bromide, See Bromomethane							
3-Methylbutan-1-ol, see Isoamyl alcohol							
1-Methyl butyl acetate	210-946-8	626-38-0	50	270	100	540	IOELV
Methyl chloride, See Chloromethane							
Methyl chloroform, see 1,1,1-trichloroethane							

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Methyl 2-cyanoacrylate	205-275-2	137-05-3	0.2	1	0.3	1.4	-
Methylcyclohexane	203-624-3	108-87-2	400	1600	500	2000	-
Methylcyclohexanol	247-152-6	25639-42-3	50	235	75	350	-
2-Methylcyclohexanone	209-513-6	583-60-8	50	230	75	345	Sk
Methylcyclopentadienyl manganese, tricarbonyl (as Mn), see Tricarbonyl (methylcyclopentadienyl) manganese							
2-Methyl-4, 6-dinitrophenol, see Dinitro-o-cresol							
4,4'-Methylenebis-(2-chloroaniline)	202-918-9	101-14-4	-	0.005	-	-	Sk, C2
Methylene chloride, see Dichloromethane							
4,4'-Methylene-diphenyl diisocyanate (as -NCO)	202-966-0	101-68-8	-	0.02	-	0.07	Sen
4,4'-Methylenedianiline, see 4, 4' Diaminodiphenylmethane (DADPM)							
Methyl ethyl ketone (MEK)	201-159-0	78-93-3	200	600	300	900	Sk, IOELV
Methyl ethyl ketone peroxides (MEKP)	215-661-2	1338-23-4	-	-	0.2	1.5	-
Methyl ethyl ketoxime	202-496-6	96-29-7	3	10	10	33	-
Methyl formate	203-481-7	107-31-3	100	250	150	375	Sk
5-Methylheptan-3-one	208-793-7	541-85-5	10	53	20	107	IOELV
5-Methylhexan-2-one, see Isoamyl methyl ketone							
Methylhydrazine	200-471-4	60-34-4	0.2	0.38	-	-	Sk, C2
Methyl iodide	200-819-5	74-88-4	2	11	5	28	Sk
Methyl isoamyl ketone, see Isoamyl methyl ketone							
Methyl isobutyl carbinol	203-551-7	108-11-2	25	100	40	160	Sk
Methyl isobutyl ketone (MIBK)	203-550-1	108-10-1	20	83	50	208	Sk, IOELV
Methyl isocyanate (as -NCO)	210-866-3	624-83-9	-	0.02	-	0.07	Sen
Methyl isopropyl ketone	209-264-3	563-80-4	200	705	-	-	-
Methyl mercaptan, see Methanethiol							
Methyl methacrylate	201-297-1	80-62-6	50	-	100	-	
Methyl parathion, see Parathion-methyl (ISO)							
2-Methylpentane-2,4-diol, see Hexylene glycol							
4-Methylpentan-2-ol, see Methyl isobutyl carbinol							
4-Methylpentan-2-one, see Methyl isobutyl ketone							
4-Methylpent-3-en-2-one, see Mesityl oxide							
4-Methyl-m-phenylene diisocyanate (as -NCO)	-	-	-	0.02	-	0.07	Sen
2-Methylpropan-1-ol, see Iso-butyl alcohol							
2-Methylpropan-2-ol	200-889-7	75-65-0	100	300	150	450	-
Methyl propyl ketone, see Pentan-2-one							



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
1-Methyl-2-pyrrolidone	212-828-1	872-50-4	25	101	-	-	Sk,
Methyl silicate	211-656-4	681-84-5	1	6	5	30	-
α- Methylstyrene, see 2-Phenylpropene							
Methylstyrene, all isomers	246-562-2	25013-15-4	100	490	150	735	-
N-Methyl-N, 2,4,6-tetranitro-aniline, see Tetryl							
Methyl vinyl ketone	201-160-0	78-94-4	0.2	-	-	-	Sk, Sen
Metribuzin	244-209-7	21087-64-9		5	-	-	-
Mevinphos (ISO)	232-095-1	7786-34-7	0.01	0.1	0.03	0.3	Sk
Mica	-	12001-26-2					
total inhalable dust			-	10	-	-	-
respirable dust			-	0.8	-	-	-
Mineral oil	-	-	-	-	-	-	-
Used in Metal working (Inhalable)			0.2				
Pure, Highly & Severely Refined (Inhalable)			5				
Mineral wool	-	-	2 fibres per millilitre of air	5	-	-	-
Molybdenum compounds (as Mo), soluble compounds	231-107-2	7439-98-7	-	0.5 (R)	-	-	-
insoluble compounds			-	10 (I)	-	-	-
Monochloroacetic acid	201-178-4	79-11-8	0.3	1	-	-	Sk
Monocrotophos	230-042-7	6923-22-4	-	0.25	-	-	Sk
Morpholine	203-815-1	110-91-8	10	36	20	72	Sk, IOELV
Naled (ISO), see 1,2 dibromo-2, 2 dichloro ethyl dimethyl phosphate							
Naphtha (rubber solvent)	232-443-2	8030-30-6	400	1590	-	-	C2
Naphthalene	202-049-5	91-20-3	10	50	15	75	-
β-Naphthylamine	202-080-4	91-59-8	-	-	-	-	C1
1,5-Naphthylene diisocyanate (as -NCO)	221-641-4	3173-72-6	-	0.02	-	0.07	Sen
Neon	231-110-9	7440-01-9	-	-	-	-	Asphx.
Nickel	231-111-4	7440-02-0	-	0.5	-	-	-
Nickel carbonyl	236-669-2	13463-39-3	0.05	0.12	0.1	0.24	Repro2
Nickel, inorganic compounds (as Ni)	-	-					
soluble compounds			-	0.1	-	-	-
insoluble compounds			-	0.5	-	-	-
Nickel, organic compounds (as Ni)	-	-	-	1	-	3	-
Nicotine	200-193-3	54-11-5	-	0.5	-	-	Sk, IOELV
Nitrapyrin	217-682-2	1929-82-4	-	10	-	20	-
Nitric acid	231-714-2	7697-37-2	-	-	1	2.6	IOELV
Nitric oxide	233-271-0	10102-43-9	25	30	35	45	-
4-Nitroaniline	202-810-1	100-01-6	-	6	-	-	Sk
Nitrobenzene	202-716-0	98-95-3	0.2	1	-	-	Sk, IOELV
4-Nitrodiphenyl	202-204-7	92-93-3	-	-	-	-	Sk, C2
Nitroethane	201-188-9	79-24-3	100	310	-	-	-
Nitrogen	231-783-9	7727-37-9	-	-	-	-	Asphx
Nitrogen dioxide	233-272-6	10102-44-0	3	5	5	9	-
Nitrogen monoxide, See nitric oxide							
Nitrogen trifluoride	232-007-1	7783-54-2	10	30	15	45	-

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Nitroglycerine, see Glycerol trinitrate							
Nitromethane	200-876-6	75-52-5	100	250	150	375	-
1-Nitropropane	203-544-9	108-03-2	25	90	-	-	-
2-Nitropropane	201-209-1	79-46-9	5	18	-	-	C2
2-Nitrotoluene	201-853-3	88-72-2	5	30	10	60	Sk
3-Nitrotoluene	202-728-6	99-08-1					
4-Nitrotoluene	202-808-0	99-99-0					
Nitrous oxide	233-032-0	10024-97-2	100	180	-	-	-
Nonane, all isomers	203-913-4	111-84-2	200	1050	-	-	-
Octachloronaphthalene	218-778-7	2234-13-1	-	0.1	-	0.3	Sk
n-Octane	203-892-1	111-65-9	300	1450	375	1800	-
Orthophosphoric acid	231-633-2	7664-38-2	-	1	-	2	IOELV
Osmium tetroxide (as Os)	244-058-7	20816-12-0	.0002	0.002	0.0006	0.006	-
Oxalic acid	205-634-3	144-62-7	-	1	-	-	IOELV
Oxalonnitrile, see Cyanogen							
2,2'-Oxydiethanol, see Diethylene glycol							
Oxygen difluoride	231-996-7	7783-41-7	0.05	0.11	0.05	0.11	-
Ozone	233-069-2	10028-15-6					
Heavy work			0.05				
Moderate work			0.08				
Light work			0.10				
Heavy, moderate or light workloads (≤2 hrs)			0.20				
Paracetamol, total inhalable dust	203-157-5	103-90-2	-	10	-	-	-
Paraffin wax, fume	232-315-6	8002-74-2	-	2	-	6	-
Paraquat dichloride (ISO) respirable dust	217-615-7	1910-42-5	-	0.08	-	-	-
Parathion (ISO)	200-271-7	56-38-2	-	0.1	-	0.3	Sk
Parathion-methyl (ISO)	206-050-1	298-00-0	-	0.2	-	0.6	Sk
Pentaborane	243-194-4	19624-22-7	0.005	0.01	0.015	0.039	-
Pentachloronaphthalene	215-320-8	1321-64-8	-	0.5	-	-	Sk
Pentachloronitrobenzene	201-435-0	82-68-8	-	0.5	-	-	-
Pentacarbonyl iron (as Fe)	236-670-8	13463-40-6	0.01	0.08	-	-	-
Pentachlorophenol	201-778-6	87-86-5	-	0.5	-	1.5	Sk
Pentaerythritol total inhalable dust	204-104-9	115-77-5	-	10	-	20	-
respirable dust			-	4	-	-	-
n-Pentane	203-692-4	109-66-0	1000	3000	750	2250	IOELV
iso-Pentane	201-142-8	78-78-4					
neo-Pentane	207-343-7	463-82-1					
Pentan-2-one	203-528-1	107-87-9	200	700	250	875	-
Pentan-3-one	202-490-3	96-22-0	200	700	250	875	-
Pentyl acetate	211-047-3	628-63-7	50	270	100	540	IOELV
3-Pentylacetate	211-047-3	620-11-1	50	270	100	540	IOELV
Perchloroethylene, see Tetrachloroethylene							
Perchloromethyl mercaptan	209-840-4	594-42-3	0.1	0.76	-	-	-
Perchloryl fluoride	231-526-0	7616-94-6	3	14	6	28	-
Perfluoroisobutylene		382-21-8	0.01	0.082	0.01	0.082	-
Persulphate salts, inorganic;			-		-		-
Ammonium persulphate	231-786-5	7727-54-0		0.1			Sen
Potassium persulphate	231-781-8	7727-21-1		0.1			Sen
Sodium persulphate	231-892-1	7775-27-1		0.1			Sen



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Phenacyl chloride, see 2-Chloroacetophenone							
Phenol	203-632-7	108-95-2	2	8	-	-	Sk, IOELV
p-Phenylenediamine	203-404-7	106-50-3	-	0.1	-	-	Sk
Phenyl-2,3-epoxypropyl ether	204-557-2	122-60-1	1	6	-	-	C2
Phenylethylene, see Styrene							
Phenyl glycidyl ether, see Phenyl-2,3-epoxypropyl ether							
Phenylhydrazine	202-873-5	100-63-0	0.1	0.44	-	-	C2, Sk
Phenyl mercaptan, see Benzenethiol							
2-Phenylpropene	202-705-0	98-83-9	50	246	100	492	IOELV
Phorate (ISO)	206-052-2	298-02-2	-	0.05	-	0.2	Sk
Phosdrin, see Mevinphos (ISO)							
Phosgene	200-870-3	75-44-5	0.02	0.08	0.1	0.4	IOELV
Phosphine	232-260-8	7803-51-2	0.1	0.14	0.2	0.28	IOELV
Phosphoric acid, see Orthophosphoric acid							
Phosphorus, yellow	231-768-7	7723-14-0	-	0.1	-	0.3	-
Phosphorus, pentachloride	233-060-3	10026-13-8	-	1	-	-	IOELV
Phosphorus pentasulphide	215-242-4	1314-80-3	-	1	-	-	IOELV
Phosphorus trichloride	231-749-3	7719-12-2	0.2	1.5	0.5	3	-
Phosphoryl trichloride	233-046-7	10025-87-3	0.2	1.2	0.6	3.6	-
Phthalic anhydride	201-607-5	85-44-9	-	4	-	12	Sen
Picloram (ISO)	217-636-1	1918-02-1	-	10	-	20	-
Picric acid	201-865-9	88-89-1	-	0.1	-	0.3	Sk, IOELV
Piperazine	203-808-3	110-85-0	-	0.1	-	0.3	Sen, IOELV
Piperazine dihydrochloride	205-551-2	142-64-3	-	0.1	-	0.3	-
Piperidine	203-813-0	110-89-4	1	3.5	-	-	Sk
Plaster of Paris	-	26499-65-0					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Platinum metal	231-116-1	7440-06-4	-	1	-	-	IOELV
Platinum salts, soluble (as Pt)	231-116-1	7440-06-4	-	0.002	-	-	Sen
Polychlorinated biphenyls (PCBs), see Chlorinated biphenyls							
Polyvinyl chloride (PVC)	-	9002-86-2					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Portland Cement	266-043-4	65997-15-1					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Potassium hydroxide	215-181-3	1310-58-3	-	-	-	2	
Propane (see aliphatic hydrocarbon gases)							
Propane-1,2-diol	200-338-0	57-55-6					
total (vapour and particulates)			150	470	-	-	-
particulates			-	10	-	-	-
1,3-Propane sultone	214-317-9	1120-71-4	-	-	-	-	C2
n-Propanol	200-746-9	71-23-8	100	-	-	-	Sk
Propan-1-ol see n-Propanol							
Propan-2-ol, see Isopropyl alcohol							
Propargyl alcohol, see Prop-2-yn-1-ol							
Propiolactone	200-340-1	57-57-8	0.5	1.5	-	-	C2



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Propionic acid	201-176-3	79-09-4	10	31	20	62	IOELV
Propoxur (ISO)	204-043-8	114-26-1	-	0.5	-	2	-
n-Propyl acetate	203-686-1	109-60-4	200	840	250	1050	-
n-Propyl alcohol, see n-Propanol							
Propylene	204-062-1	115-07-1	500	-	-	-	Asphx.
Propylene dinitrate (PGDN)	229-180-0	6423-43-4	0.2	1.4	0.2	1.4	Sk
Propylene dichloride	201-152-2	78-87-5	75	347	110	508	-
Propylene glycol, see propane-1,2-diol							
Propylene glycol dinitrate, see propylene dinitrate							
Propylene glycol monomethyl ether	203-539-1	107-98-2	100	375	150	568	IOELV
Propylene oxide	200-879-2	75-56-9	5	12	-	-	C2, Mut2
n-Propyl nitrate	210-985-0	627-13-4	25	107	40	172	-
2-Propyn-1-ol	203-471-2	107-19-7	1	2	3	6	Sk
Pulverised fuel ash total inhalable dust respirable	-	-	-	10 4	-	-	-
Pyrethrins (ISO)	232-319-8	8003-34-7	-	1	-	-	IOELV
Pyrethrum, see pyrethrins							
Pyridine	203-809-9	110-86-1	5	15	10	30	IOELV
2-Pyridylamine, see 2-Amino pyridine							
Pyrocatechol, see Catechol							
Quartz, respirable dust, (see Silica, crystalline)	238-878-4	14808-60-7	-	0.1	-	-	-
Quinone	203-405-2	106-51-4	0.1	0.4	0.3	1.2	-
RDX, see hexahydro-1,3,5-trinitro-1,3,5-triazine							
Refractory Ceramic Fibres (RCFs)	-	-	-	5	-	-	C2
Resorcinol	203-585-2	108-46-3	10	45	-	-	Sk, IOELV
Rhodium (as Rh), metal fume and dust soluble salts	231-125-0	7440-16-6	-	0.1 0.001	-	0.3 0.003	-
Ronnel	206-082-6	299-84-3	-	10	-	-	-
Rosin core solder pyrolysis products (as airborne total resin acid)	-	-	-	0.05	-	0.15	Sen
Rotenone (ISO)	201-501-9	83-79-4	-	5	-	10	-
Rouge total inhalable dust respirable dust	215-168-2	1309-37-1	-	10 4	-	-	-
Rubber fume process dust			-	0.6 6	-	-	-
Rubber solvent (naphtha), see Naphtha (rubber solvent)							
Selenium and compounds, except hydrogen selenide(as Se)	231-957-4	7782-49-2	-	0.1	-	-	-
Selenium hexafluoride		7783-79-1	0.05	0.16	-	-	-
Sesone, see Sodium 2-(2,4-dichlorophenoxy) ethyl sulphate							
Silane	232-263-4	7803-62-5	0.5	0.7	1	1.5	-
Silica, amorphous total inhalable dust respirable dust	-	-	-	6 2.4	-	-	-



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Silica, crystalline, respirable dust, (See Cristobalite, Quartz, Tridymite, Tripoli)	-	-		0.1	-	-	-
Silica, fused respirable dust		60676-86-0		0.08	-	-	-
Silicon Si	231-130-8	7440-21-3					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Silicon carbide	206-991-8	409-21-2					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Silicon tetrahydride, see Silane							
Silver (metallic)	231-131-3	7440-22-4	-	0.1	-	-	IOELV
Silver (soluble compounds as Ag)	231-131-3	-	-	0.01	-	-	IOELV
Soapstone							
total dust		-	-	6	-	-	-
respirable dust		-	-	2.25	-	-	-
Sodium azide (as NaN <sub>3</sub> )	247-852-1	26628-22-8	-	0.1	-	0.3	Sk, IOELV
Sodium bisulfite	231-548-0	7631-90-5	-	5	-	-	-
Sodium 2-(2,4- dichlorphenoxy) ethyl sulphate	205-259-5	136-78-7	-	10	-	20	-
Sodium fluoroacetate	200-548-2	62-74-8	-	0.05	-	0.15	Sk
Sodium hydrogensulphite, see Sodium bisulfite							
Sodium hydroxide	215-185-5	1310-73-2	-	-	-	2	-
Sodium metabisulphite, see Disodium disulphite							
Starch	232-679-6	9005-25-8					
total inhalable dust			-	10	-	-	-
respirable dust			-	4	-	-	-
Stearates (except lead stearate)	-	-	-	10	-	-	-
Stibine	-	7803-52-3	0.1	0.5	0.3	1.5	-
Stoddard solvent	232-489-3	8052-41-3	100	573	-	-	-
Strontium chromate	232-142-6	7789-06-2	-	0.0005	-	-	C2
Strychnine	200-319-7	57-24-9	-	0.15	-	0.45	-
Styrene	202-851-5	100-42-5	20	85	40	170	-
Subtilisins (proteolytic enzymes as 100% pure crystalline enzyme)	232-752-2	9014-01-1	-	0.00006	-	0.00006	Sen
Sucrose	200-334-9	57-50-1	-	10	-	20	-
Sulphotep (TEDP)(ISO), see 0,0,0',0'-Tetraethyl dithiopyrophosphate(ISO)							
Sulphur dioxide	231-195-2	7446-09-5	2	5	5	13	-
Sulphur hexafluoride	219-854-2	2551-62-4	1000	6000	1250	7500	-
Sulphuric acid	231-639-5	7664-93-9	-	1	-	-	-
Sulphur monochloride	233-036-2	10025-67-9	-	-	1	6	-
Sulphur pentafluoride, see Disulphur decafluoride							
Sulphur tetrafluoride	232-013-4	7783-60-0	0.1	0.4	0.3	1	-
Sulphuryl difluoride	220-281-5	2699-79-8	5	20	10	40	-
Sulprofus	252-545-0	35400-43-2	-	1	-	-	-
2,4,5-T (ISO)2,4,5- Trichloro-phenoxyacetic acid)	202-273-3	93-76-5	-	10	-	20	-
TDI, see Toluene diisocyanate							
TEDP(ISO), see 0,0,0',0'-Tetraethyl dithiopyrophosphate							

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
TEPP (ISO), see 0,0,0',0'-Tetraethyl pyrophosphate							
TNT, see 2,4,6- trinitrotoluene							
Talc	238-877-9	14807-96-6					
total inhalable dust			-	10	-	-	-
respirable dust			-	0.8	-	-	-
Tantalum	231-135-5	7440-25-7	-	5	-	10	-
Tellurium & compounds, except hydrogen telluride, (as Te)							
	236-813-4	13494-80-9	-	0.1	-	-	-
Temephos	222-191-1	3383-96-8	-	10	-	-	-
Terephthalic acid	202-830-0	100-21-0	-	10	-	-	-
Terphenyls, all isomers	247-477-3	26140-60-3	-	-	0.5	5	-
1,1,2,2-Tetrabromoethane	201-191-5	79-27-6	0.5	7	-	-	Sk
Tetrabromomethane, see Carbon tetrabromide							
Tetracarbonylnickel(as Ni), see nickel carbonyl							
1,1,1,2-Tetrachloro-2,2-difluoroethane	200-934-0	76-11-9	100	834	100	834	-
1,1,2,2-Tetrachloro-1,2-difluoroethane	200-935-6	76-12-0	100	834	100	834	-
1,1,2,2, Tetrachloroethane	201-197-8	79-34-5	1	6.9	-	-	Sk
Tetrachloroethylene	204-825-9	127-18-4	25	170	150	1000	-
Tetrachloromethane, see carbon tetrachloride							
Tetrachloronaphthalenes, all isomers	215-642-9	1335-88-2	-	2	-	4	-
0,0,0',0'- Tetraethyl dithio-pyrophosphate(ISO)	222-995-2	3689-24-5	-	0.1	-	-	Sk, IOELV
0,0,0',0'-Tetraethyl pyrophosphate (ISO)	203-495-3	107-49-3	0.004	0.05	0.01	0.2	Sk
Tetraethyl lead	201-075-4	78-00-2	-	0.10	-	-	Sk, Repro1
Tetraethyl orthosilicate, see Ethyl silicate							
Tetrafluorodichloroethane, see 1,2-Dichlorotetrafluoro-ethane							
Tetrahydrofuran	203-726-8	109-99-9	50	150	100	300	Sk, IOELV
Tetramethyl lead	200-897-0	75-74-1	-	0.15	-	-	Sk
Tetramethyl orthosilicate, see Methyl silicate							
Tetramethyl succinonitrile		3333-52-6	0.5	3	2	9	Sk
Tetranitromethane	208-094-7	509-14-8	0.005	0.040	-	-	-
Tetrasodium pyrophosphate	231-767-1	7722-88-5	-	5	-	-	-
Tetryl	207-531-9	479-45-8	-	1.5	-	3	Sk
Thallium, soluble compounds (as Tl)	231-138-1	7440-28-0	-	0.1	-	-	Sk
4,4'-Thiobis (6-tert- butyl-m-cresol), see 6,6'-di-tert-butyl -4,4'-thio-di-m-cresol							
Thioglycollic acid, see Mercapto acetic acid							
Thionyl chloride	231-748-8	7719-09-7	-	-	1	5	-
Thiram (ISO)	205-286-2	137-26-8	-	5	-	10	-



Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
Tin, as Sn	231-141-8	7440-31-5 & others	-		-		IOELV
Metal				2			
Oxide & inorganic compounds, except tin hydride				2			
Organic compounds				0.1		0.2	
Titanium dioxide	236-675-5	13463-67-7	-	10	-	-	-
total inhalable dust			-	4	-	-	-
respirable dust							
o-Tolidine	204-358-0	119-93-7	-	-	-	-	Sk C2
Toluene	203-625-9	108-88-3	50	192	100	384	Sk, IOELV
Toluene-2,4- or 2,6- diisocyanate (as -NCO)	209-544-5	584-84-9 91-08-7	-	0.001	-	0.003	Sen
p-Toluenesulphonyl chloride	202-684-8	98-59-9	-	-	-	5	-
o-Toluidine	202-429-0	95-53-4	0.2	0.9	-	-	Sk C2
m-Toluidine	203-583-1	108-44-1	0.2	0.9	-	-	Sk
p-Toluidine	203-403-1	106-49-0	0.2	0.9	-	-	Sk
1,4,7-Tri-(aza)-heptane, see Diethylene triamine							
Tribromomethane	200-854-6	75-25-2	0.5	5	-	-	Sk
Tributyl phosphate, all isomers	204-800-2	126-73-8	-	5	-	5	-
Tricarbonyl (etacyclopenta- dienyl) manganese (as Mn), see Manganese cyclopentadienyl tricarbonyl							
Tricarbonyl (methylcyclopentadienyl) manganese (as Mn),	235-166-5	12108-13-3	-	0.2	-	0.6	Sk
Trichloroacetic acid	200-927-2	76-03-9	1	5	-	-	-
1,2,4-Trichlorobenzene	204-428-0	120-82-1	2	15.1	5	37.8	Sk, IOELV
1,1,1-Trichlorobis (chlorophenyl) ethane	200-024-3	50-29-3	-	1	-	3	-
1,1,1-Trichloroethane	200-756-3	71-55-6	100	555	200	1110	IOELV
1,1,2-Trichloroethane	201-166-9	79-00-5	10	45	20	90	Sk
Trichloroethylene	201-167-4	79-01-6	10		25		Sk, C2
Trichlorofluoromethane	200-892-3	75-69-4	1000	5600	1250	7000	-
Trichloromethane, see Chloroform							
Trichloronaphthalene	215-321-3	1321-65-9	-	5	-	-	Sk
Trichloronitromethane, see Chloropicrin							
2,4,5-Trichlorophenoxyacetic acid ([2,4,5-T(ISO)])	202-273-3	93-76-5	-	10	-	20	-
1,2,3-Trichloropropane	202-486-1	96-18-4	50	300	75	450	-
1,1,2-Trichlorotri-fluoroethane	200-936-1	76-13-1	1000	7600	1250	9500	-
Tri-o-cresyl phosphate, see Tri-o-tolyl phosphate							
Tricyclohexyltin hydroxide	236-049-1	13121-70-5	-	5	-	10	-
Tridymite, respirable dust (see Silica, Crystalline)							
	239-487-1	15468-32-3	-	0.1	-	-	-
Triethanolamine	203-049-8	102-71-6	-	5	-	-	-
Triethylamine	204-469-4	121-44-8	2	8.4	3	12.6	Sk, IOELV
Trifluorobromomethane	200-887-6	75-63-8	1000	6100	1200	7300	-
Triglycidyl isocyanurate, TGIC	219-514-3	2451-62-9	-	0.05	-	-	Mut2
Trimanganese tetraoxide	215-266-5	1317-35-7	-	0.5	-	-	-
Trimellitic anhydride	209-008-0	552-30-7	-	0.04	-	0.12	Sen
Trimethylamine	200-875-0	75-50-3	10	24	15	36	-

Substance	EINECS No.	CAS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)		
			ppm	mg/ m <sup>3</sup>	ppm	mg/ m <sup>3</sup>	Notes
1,2,3 – Trimethylbenzene	208-394-8	526-73-8	20	100	-	-	Sk, IOELV
1,2,4 – Trimethylbenzene	202-436-9	95-63-6	20	100	-	-	IOELV
Trimethylbenzenes, all isomers or mixtures	247-099-9	25551-13-7	20	100	-	-	Sk, IOELV
3,5,5-Trimethylcyclohex-2-enone	201-126-0	78-59-1	-	-	5	25	-
Trimethyl phosphite	204-471-5	121-45-9	2	10	-	-	-
2,4,6-Trinitrophenol, see Picric acid							
2,4,6-Trinitrotoluene	204-289-6	118-96-7	-	0.5	-	-	Sk
Triorthocresyl phosphate, see Tri-o-tolyl phosphate,							
Triphenylamine	210-035-5	603-34-9	-	5	-	-	-
Triphenyl phosphate	204-112-2	115-86-6	-	3	-	6	-
Tripoli, respirable dust (see Silica, Crystalline)		1317-95-9	-	0.1	-	-	-
Tri-o-tolyl phosphate	201-103-5	78-30-8	-	0.1	-	0.3	-
Tungsten & compounds (as W), soluble	231-143-9	7440-33-7	-	1	-	3	-
insoluble			-	5	-	10	-
Turpentine	232-350-7	8006-64-2	100	560	150	840	-
Uranium compounds, natural, soluble, (as U)	231-170-6	7440-61-1	-	0.2	-	0.6	-
n-Valeraldehyde	203-784-4	110-62-3	50	176	-	-	-
Vanadium pentoxide, see Divanadium pentaoxide							
Vinyl acetate	203-545-4	108-05-4	10	30	20	60	-
Vinyl benzene, see styrene							
Vinyl bromide	209-800-6	593-60-2	0.5	2.2	-	-	C2
Vinyl chloride(VCM)	200-831-0	75-01-4	3	7.77	-	-	C1, BOELV
4-Vinylcyclohexene	202-848-9	100-40-3	0.1	0.4	-	-	-
4-Vinylcyclohexene dioxide	203-437-7	106-87-6	0.1	0.6	-	-	-
Vinyl fluoride	200-832-6	75-02-5	1	-	-	-	-
Vinylidene chloride, see 1,1-Dichloroethylene							
Vinylidene fluoride	200-867-7	75-38-7	500	-	-	-	-
Vinyl pyrrolidone	201-800-4	88-12-0	-	0.05	-	-	-
Vinyl toluene, all isomers, see Methylstyrene							
VM and P Naptha	232-453-7	8032-32-4	300	1370	-	-	C2
Warfarin (ISO)	201-377-6	81-81-2	-	0.1	-	0.3	Repro1
Welding fume	-	-	-	5	-	-	-
White spirit, see Stoddard solvent							
Wood dust, (soft wood)	-	-	-	5	-	-	Sen
Wood dust, (hard wood)	-	-	-	5	-	-	Sen, BOELV
Xylene, mixed isomers	215-535-7	1330-20-7	50	221	100	442	Sk, IOELV
Xylene, o-isomer	202-422-2	95-47-6	50	221	100	442	Sk, IOELV
Xylene m-isomer	203-576-3	108-38-3	50	221	100	442	Sk, IOELV
Xylene p-isomer	203-396-5	106-42-3	50	221	100	442	Sk, IOELV
Xylidine, all isomers	215-091-4	1300-73-8	2	10	10	50	Sk
Yttrium	231-174-8	7440-65-5	-	1	-	3	-
Zinc chloride, fume	231-592-0	7646-85-7	-	1	-	2	-
Zinc chromates	236-878-9	13530-65-9	-	0.01	-	-	C1
Zinc distearate	209-151-9	557-05-1	-	-	-	-	-
total inhalable dust			-	10	-	20	-
respirable dustt			-	4	-	-	-
Zinc oxide, fume	215-222-5	1314-13-2	-	5	-	10	-
Zirconium compounds (as Zr)	231-176-9	7440-67-7	-	5	-	10	-

## Schedule 2

### List of Chemical Agents and Occupational Exposure Limit Values

#### Part 1

List of chemical agents for which the Occupational Exposure Limit Value (OELV) has changed compared to the 2007 Code of Practice (and which are now included in Schedule 1 to the 2010 Code of Practice)

Substance	EINECS No.	CAS No.	2007-OELV (8 Hour reference period except where STEL indicated)	2010-OELV (8 Hour reference period except where STEL indicated) Proposal
Aliphatic hydrocarbon gases Alkanes (C1-C4)				
Ethane	200-814-8	74-84-0	No OELV (Asphx.)	1000
Butane	203-448-7	106-97-8	600 (STEL 750)	1000
Methane	200-812-7	74-82-8	No OELV (Asphx.)	1000
Propane	200-827-9	74-98-6	No OELV (Asphx.)	1000
Allyl propyl disulfide	218-550-7	2179-59-1	2 (STEL3)	0.5 (No STEL)
Arsenic and compounds except arsine (as As)	231-148-6	7440-38-2	0.1mg/m <sup>3</sup> (C1)	0.01mg/m <sup>3</sup> (C1)
Beryllium and compounds, as Be	231-150-7	7440-41-7	0.002mg/m <sup>3</sup> (C2)	0.0002mg/m <sup>3</sup> (C2)
Bromochloromethane (Chlorobromomethane)	200-826-3	74-97-5	200 (STEL 250)	200 (No STEL)
Chromium VI compounds (as Cr)	-	-	0.05mg/m <sup>3</sup>	Water Sol= 0.05mg/m <sup>3</sup> Insoluble= 0.01mg/m <sup>3</sup>
Dodecyl mercaptan	203-984-1	112-55-0	No OELV	0.1
Ethylene	200-815-3	74-85-1	No OELV (Asphx.)	200
Flour Dust	-	-	0.5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Hexahydrophthalic anhydride All isomers (Inhalable)	201-604-9 236-086-3 238-009-9	85-42-7 13149-00-3 14166-21-3	No OELV	STEL 0.005mg/m <sup>3</sup> (IFV)
Maleic anhydride	203-571-6	108-31-6	0.25 (Sen)	0.1 (Sen)
Mineral Oil	-	-	5 (STEL 10) mg/m <sup>3</sup>	
Mineral oil used in metal working				0.2mg/m <sup>3</sup> (I)
Mineral oil, pure, highly & severely refined				5mg/m <sup>3</sup> (I)
Molybdenum and compounds (as Mo)	231-107-2	7439-98-7	-	0.5 mg/m <sup>3</sup> (R)
(as soluble cmpds)			5 (STEL 10)mg/m <sup>3</sup>	10 mg/m <sup>3</sup> (I)
(as insoluble cmpds)			10(STEL 20)mg/m <sup>3</sup>	3 mg/m <sup>3</sup> (R)
MMMF (Machine-made mineral fibre)	-	-	5mg/m <sup>3</sup>	5mg/m <sup>3</sup> (Wording Change)
n-Propanol	200-746-9	71-23-8	200 (STEL 250)	100 (Remove STEL)
Propylene	204-062-1	115-07-1	No OELV	500
Refractory Ceramic fibres (RCFs)	-	-	None	5mg/m <sup>3</sup>
Tin, as Sn	231-141-8	7440-31-5 & others		
Metal			Org=0.1(STEL 0.2) mg/m <sup>3</sup>	2(Remove STEL) mg/m <sup>3</sup>
Oxide & inorganic compounds, except tin hydride			Inorg=2 (STEL 4) mg/m <sup>3</sup>	2(Remove STEL) mg/m <sup>3</sup>
Organic compounds				0.1(STEL 0.2) mg/m <sup>3</sup>
Toluene-2,4- or 2,6-diisocyanate	209-544-5	584-84-9 91-08-7	0.02 (STEL 0.07) mg/m <sup>3</sup> (Sen)	0.001 (STEL 0.003)
Trichloroethylene	201-167-4	79-01-6	50 (100) (Sk C2)	10 (STEL 25)
Trimanganese tetraoxide	215-266-5	1317-35-7	1mg/m <sup>3</sup>	0.5mg/m <sup>3</sup>
Vinyl pyrrolidone	201-800-4	88-12-0	No OELV	0.05mg/m <sup>3</sup>

- Units are ppm unless mg/m<sup>3</sup> are stated

## Part 2

List of chemical agents for which the Occupational Exposure Limit Value (OELV) has not changed from that listed in the 2007 Code of Practice but for which the notation contained in the notes column in Schedule 1 to the 2010 Code of Practice has been revised

Substance	EINECS No.	CAS No.	2007 column	2010 column
Asbestos	-	77536-66-4	C1	C1, BOELV
		77536-67-5		
		12001-29-5		
		12001-28-4		
		12172-73-5		
		77536-68-6		
Benzene	200-753-7	71-43-2	Sk, C1	Sk, C1, BOELV
1,4 Dioxane	204-661-8	123-91-1	Sk	Sk, IOELV
Methyl acrylate	202-500-6	96-33-3	Sk	Sk, IOELV
Methyl methacrylate	201-297-1	80-62-6	-	IOELV
Picric Acid	201-865-9	88-89-1	Sk	Sk, IOELV
Platinum Metal	231-116-1	7440-06-4	-	IOELV
Pyridine	203-809-9	110-86-1	-	IOELV
Tin & Inorganic Compounds	231-141-8	7440-31-5 & others	Sk	Sk, IOELV
Wood dust, (Hard wood)	-	-	Sen	Sen, BOELV
Vinyl chloride monomer	200-831-0	75-01-4	C1	C1, BOELV



## Schedule 3 (Part 1)

List of chemical agents for which it is the intention of the Health and Safety Authority to introduce an Occupational Exposure Limit Value (OELV) or to change the existing OELV in 2011

Comments may be made in writing to the Health and Safety Authority concerning any of the limits referred to in this Schedule.

Substance	EINECS No.	CAS No.	2010-OELV (8 Hour reference period except where STEL indicated)	OELV under consideration for 2011-(8 hour reference period except where STEL indicated)
Acetaldehyde	200-836-8	75-07-0	STEL 50	STEL 25
Acrylic Acid	201-177-9	79-10-7	10 (No STEL)	2
Aldrin	206-215-8	309-00-2	0.25mg/m <sup>3</sup>	0.05mg/m <sup>3</sup> (IFV)
Aluminium Metal Total Inhalable Dust Respirable Dust Welding Fume	231-072-3	7429-90-5	10mg/m <sup>3</sup> 4mg/m <sup>3</sup> 5mg/m <sup>3</sup>	1mg/m <sup>3</sup> (R)
Arsine	232-066-3	7784-42-1	0.05	0.005
Beryllium and compounds as Be	231-150-7	7440-41-7	0.002mg/m <sup>3</sup>	0.00005mg/m <sup>3</sup> STEL 0.0002mg/m <sup>3</sup>
Butan-1-ol	200-751-6	71-36-3	STEL 25	20 (No STEL)
Cadmium and compounds, as Cd	-	7440-43-9	0.025mg/m <sup>3</sup>	0.01mg/m <sup>3</sup> 0.002mg/m <sup>3</sup> (R)
Chlorpyrifos	220-864-4	2921-88-2	0.2mg/m <sup>3</sup> STEL=0.6mg/m <sup>3</sup>	0.1mg/m <sup>3</sup> No STEL
Crotonaldehyde	224-030-0	4170-30-3	2 STEL 6	STEL 0.3
Demeton	-	8065-48-3	0.11mg/m <sup>3</sup>	0.05mg/m <sup>3</sup> (IFV)
Diazinon	206-373-8	333-41-5	0.1mg/m <sup>3</sup> STEL 0.3mg/m <sup>3</sup>	0.01mg/m <sup>3</sup> (IFV) Remove STEL
1,2 Dibromo-2,2 dichloro ethyl dimethyl phosphate (Naled)	206-098-3	300-76-5	3mg/m <sup>3</sup>	0.1mg/m <sup>3</sup>
2-N-Dibutylaminoethanol	203-057-1	102-81-8	2	0.5
Dibutyl phosphate [Dibutyl hydrogen phosphate]	203-509-8	107-66-4	1 (5mg/m <sup>3</sup> )	5mg/m <sup>3</sup> (IFV)
Dicrotophos	205-494-3	141-66-2	0.25mg/m <sup>3</sup>	0.05mg/m <sup>3</sup> (IFV)
Diethanolamine	203-868-0	111-42-2	3 (15mg/m <sup>3</sup> )	1mg/m <sup>3</sup>
Diglycidyl Ether	218-802-6	2238-07-5	0.1	0.01
Dimethyl carbamoyl chloride	201-208-6	79-44-7	C2	0.005
Dimethyl disulphide	210-871-0	624-92-0	5	0.5
1, 1-Dimethylhydrazine	200-316-0	57-14-7	0.5	0.01
Dioxathion	201-107-7	78-34-2	0.2mg/m <sup>3</sup>	0.1mg/m <sup>3</sup> (IFV)
Diquat Dibromide	201-579-4	85-00-7	0.5mg/m <sup>3</sup>	0.5mg/m <sup>3</sup> 0.1mg/m <sup>3</sup> (R)
Disulphur decafluoride (Sulphur pentafluoride)	227-204-4	5714-22-7	0.025 STEL 0.075	STEL=0.01
Disulfoton	206-054-3	298-04-4	0.1mg/m <sup>3</sup>	0.05mg/m <sup>3</sup> (IFV)
Ethanol	200-578-6	64-17-5	1000 No STEL	Remove OELV STEL 1000
Ethylenimine	205-793-9	151-56-4	0.5	0.05
Ethylene Glycol Dinitrite	211-063-0	628-96-6	0.2	0.05
Ferbam	238-484-2	14484-64-1	10mg/m <sup>3</sup>	5mg/m <sup>3</sup>
Ferrocene	203-039-3	102-54-5	10mg/m <sup>3</sup> STEL 20mg/m <sup>3</sup>	Removal
Formamide	200-842-0	75-12-7	20 STEL 30	10 Remove STEL
Glycerol Trinitrate (Nitroglycerin)	200-240-8	55-63-0	0.2	0.05
Heptachlor	200-962-3	76-44-8	0.5mg/m <sup>3</sup>	0.05mg/m <sup>3</sup>
Heptachlor epoxide	213-831-0	1024-57-3	No OELV	0.05mg/m <sup>3</sup>



Substance	EINECS No.	CAS No.	2010-OELV (8 Hour reference period except where STEL indicated)	OELV under consideration for 2011-(8 hour reference period except where STEL indicated)
Hexachlorocyclopentadiene	201-029-3	77-47-4	0.1	0.01
Hexachloroethane vapour	200-666-4	67-72-1	5	1 Withdraw dust limits due to insufficient data
Hexahydro-1,3,5-trinitro-1,3,5-triazine	204-500-1	121-82-4	1.5 STEL 3	0.5
Hexamethylene diisocyanate	212-485-8	822-06-0	0.02 STEL 0.07	0.005 Remove STEL
Hexylene Glycol	203-489-0	107-41-5	25	Remove OELV STEL 25
Indene	202-393-6	95-13-6	10	5
Isophorone diisocyanate	223-861-6	4098-71-9	0.2	0.005 Remove STEL
Manganese Fume & inorganic compounds (as Mn)	231-105-1	7439-96-5	1mg/m <sup>3</sup>	0.2mg/m <sup>3</sup>
Magnesite	208-915-9	546-93-0	10(I) 4(R)	Withdraw limits due to insufficient data
Malathion	204-497-7	121-75-5	10mg/m <sup>3</sup>	1mg/m <sup>3</sup> (IFV)
Maleic Anhydride	203-571-6	108-31-6	0.25	0.1
Methylamine	200-820-0	74-89-5	10	5 STEL15
Methylcyclohexane	203-624-3	108-87-2	400 STEL 500	400 Remove STEL
Methylhydrazine	200-471-4	60-34-4	0.2	0.01
Methyl parathion	206-050-1	298-00-0	0.2mg/m <sup>3</sup>	0.02mg/m <sup>3</sup> (IFV)
Methyl Stryene (all isomers)	246-562-2	25013-15-4	100 STEL 150	50 STEL 100
Naphtha (Rubber Solvent)		8030-30-6	400	Withdraw due to insufficient data
1, 5 Naphthylene diisocyanate	221-641-4	3173-72-6	0.02mg/m <sup>3</sup>	Withdraw due to insufficient data
4-Nitroaniline	202-810-1	100-01-6	6mg/m <sup>3</sup>	3mg/m <sup>3</sup>
Nitromethane	200-876-6	75-52-5	100	20
Nitrotoluene (all isomers)	201-853-3 202-728-6 202-808-0	88-72-2 99-08-1 99-99-0	5	2
Nitrous Oxide	233-032-0	10024-97-2	100	50
Oxygen difluoride	231-996-7	7783-41-7	0.05	0.005
Phenyl-2,3-epoxypropyl ether	204-557-2	122-60-1	1	0.1
Platinum metal	231-116-1	7440-06-4	5mg/m <sup>3</sup>	1mg/m <sup>3</sup>
Portland Cement	266-043-4	65997-15-1	Total Dust=10mg/m <sup>3</sup> Respirable=4mg/m <sup>3</sup>	1mg/m <sup>3</sup> (R)
Polyvinylchloride Total Inhalable Dust Respirable Dust	-	9002-86-2	10 4	10 1
Propylene	204-062-1	115-07-1	Asphx-No OELV	500
Propylene dinitrate	229-180-0	6423-43-4	0.2	0.05
Propylene dichloride	201-152-2	78-87-5	75	10
Propyleneimine		75-55-8	No OELV	0.2 (STEL 0.4)
Ronnel	206-082-6	299-84-3	10mg/m <sup>3</sup>	5mg/m <sup>3</sup>
Soapstone	-	-	Total Dust=6mg/m <sup>3</sup> Respirable=2.25mg/m <sup>3</sup>	Withdraw due to insufficient data
Sulphur dioxide	231-195-2	7446-09-5	2 (5 STEL)	0.5 (1 STEL)
Sulprofos	252-545-0	35400-43-2	1mg/m <sup>3</sup>	0.1mg/m <sup>3</sup> (IFV)
Temephos	222-191-1	3383-96-8	10mg/m <sup>3</sup>	1mg/m <sup>3</sup>
Tetrabromoethane (1,1,2,2-Tetrabromoethane)	201-191-5	79-27-6	0.5	0.1
1,1,1,2-Tetrachloro-1,2-difluoroethane	200-935-6	76-12-0	100	50
Tetrachloroethylene	204-825-9	127-18-4	STEL 150	STEL 100



Substance	EINECS No.	CAS No.	2010-OELV (8 Hour reference period except where STEL indicated)	OELV under consideration for 2011-(8 hour reference period except where STEL indicated)
Tetraethyl pyrophosphate	203-495-3	107-49-3	0.05mg/m <sup>3</sup>	0.01mg/m <sup>3</sup>
4,4, Thiobis (6-tert-butyl-m-cresol)	202-525-2	96-69-5	10mg/m <sup>3</sup> STEL 20mg/m <sup>3</sup>	10mg/m <sup>3</sup> (I) Remove STEL
Thiram	205-286-2	137-26-8	5mg/m <sup>3</sup>	0.05mg/m <sup>3</sup> IFV
Thionyl chloride	231-748-8	7719-09-7	STEL 1	STEL 0.5
Toluene diisocyanate	209-544-5	584-84-9	0.02mg/m <sup>3</sup> STEL 0.07mg/m <sup>3</sup>	0.001ppm (IFV) STEL 0.003ppm (IFV)
Tributyl phosphate, all isomers	204-800-2	126-73-8	5mg/m <sup>3</sup> STEL 5mg/m <sup>3</sup>	0.2ppm Remove STEL
Trichloroethylene	201-167-4	79-01-6	50 STEL 100	10 STEL 25
1,2,3 Trichloropropane	202-486-1	96-18-4	50	10
Trimellitic Anhydride	209-008-0	552-30-7	0.04mg/m <sup>3</sup> STEL 0.12mg/m <sup>3</sup>	0.0005mg/m <sup>3</sup> STEL 0.002mg/m <sup>3</sup>
Trimethylamine	200-875-0	75-50-3	10 STEL 15	5 Remove STEL
2,4,6-Trinitrotoluene	204-289-6	118-96-7	0.5mg/m <sup>3</sup>	0.1mg/m <sup>3</sup>
Turpentine	232-350-7	8006-64-2	100	20
VM & P naphtha	232-453-7	8032-32-4	300 (1370mg/m <sup>3</sup> )	Withdraw due to insufficient data
Xylidine	215-091-4	1300-73-8	2	0.5 (IFV)
Zinc Oxide, fume	215-222-5	1314-13-2	5mg/m <sup>3</sup> STEL 10mg/m <sup>3</sup>	2mg/m <sup>3</sup> (R)

- Units are ppm unless mg/m<sup>3</sup> are stated



## Part 2

Indicative Occupational Exposure Limit Values (IOELVs) listed in Commission Directive 2009/161/EU establishing a third list of indicative occupational exposure limit values in the implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC.

This Directive was adopted on 17th December 2009. Member States are obliged to take account of IOELVs when setting national limits, where national limits, if in existence, are less stringent than those set down in the Directive. The Directive is required to be transposed into national legislation by Member States by 18 December 2011 at the latest. The Health and Safety Authority proposes to add the IOELV list from Directive 2009/116/EU to the second list of indicative occupational exposure limit values in the next edition of this Code of Practice in 2011.

Substance	EINECS No.	CAS No.	2010-OELV (8 Hour reference period except where STEL indicated)	Substances included in the 3rd list of IOELVs. Limits are listed below. (8-Hour reference period except where STEL indicated)	Notes
N,N Dimethylformamide	200-679-5	68-12-2	10 (STEL 20)	5 (STEL 10)	Sk
Carbon Disulphide	200-843-6	75-15-0	10	5	Sk
Bisphenol A (4,4'-isopropylidenediphenol) (inhalable dust)	201-245-8	80-05-7	No OELV	10mg/m <sup>3</sup>	-
Methyl methacrylate	201-297-1	80-62-6	50 (STEL 100)	50 (STEL 100)	-
Methyl acrylate	202-500-6	96-33-3	2	5 (STEL 10)	-
Vinyl Acetate	203-545-4	108-05-4	10 (STEL 20)	5 (STEL 10)	-
Phenol	203-632-7	108-95-2	2	2 (STEL 4)	Sk
2-Methoxyethanol	203-713-7	109-86-4	5	1	Sk
2-Methoxyethyl acetate	203-772-9	110-49-6	5	1	Sk
2-Ethoxy ethanol	203-804-1	110-80-5	5	2	Sk
2-Ethoxyethyl acetate	203-839-2	111-15-9	10	2	Sk
1,4-Dioxane	204-661-8	123-91-1	20	20	-
Ethylacrylate	205-438-8	140-88-5	5 (STEL 15)	5 (STEL 10)	-
Methylisocyanate	210-866-3	624-83-9	0.02 (STEL 0.07)	STEL 0.02	-
n-Methyl-2-pyrrolidone	212-828-1	872-50-4	25	10 (STEL 20)	Sk
Tertiary-butyl-methyl ether	216-653-1	1634-04-4	No OELV	50 (STEL 100)	-
Mercury and divalent inorganic mercury compounds (measured as Mercury)	-	7439-97-6	0.025mg/m <sup>3</sup>	0.02mg/m <sup>3</sup>	-
Sulphuric Acid (mist)	231-639-5	7664-93-9	1mg/m <sup>3</sup>	0.05mg/m <sup>3</sup>	-
Hydrogen Sulphide	231-977-3	7783-06-4	5 (STEL 10)	7 (STEL 14)	-

- Units are ppm unless mg/m<sup>3</sup> are stated

## Schedule 4 CAS Number Index

CAS Number	
50-00-0	Formaldehyde
50-29-3	1,1,1-Trichlorobis (chlorophenyl) ethane, [DDT], [Dichlorodiphenyl trichloroethane]; 2,2-Bis(p-chlorophenyl)-1,1,1-trichloroethane
50-32-8	Benzo[α]pyrene
50-78-2	o-Acetylsalicylic acid; [Aspirin]
54-11-5	Nicotine
55-63-0	Glycerol trinitrate; [Nitroglycerine]
56-23-5	Carbon tetrachloride; [tetrachloromethane]
56-38-2	Parathion (ISO)
56-55-3	Benz[α]anthracene
56-81-5	Glycerol, mist
57-12-5	Cyanides
57-14-7	Dimethylhydrazine
57-24-9	Strychnine
57-50-1	Sucrose
57-55-6	Propan-1, 2-diol; [Propylene glycol]
57-57-8	Propiolactone
57-74-9	Chlordane (ISO)
60-29-7	Ether; [Diethyl ether]; [Ethyl ether]
60-34-4	Methylhydrazine
60-57-1	Dieldrin (ISO)
61-82-5	3-Amino-1,2,4 Triazole
62-53-3	Aniline
62-73-7	Dichlorvos (ISO); [DDVP]
62-74-8	Sodium fluoroacetate
63-25-2	Carbaryl (ISO)
64-17-5	Ethanol; [Ethyl alcohol]
64-18-6	Formic acid
64-19-7	Acetic acid
64-67-5	Diethyl sulphate
67-56-1	Methanol; [Methyl alcohol]
67-63-0	Isopropyl alcohol; [Propan-2-ol]
67-64-1	Acetone
67-66-3	Chloroform; [Trichloromethane]
67-72-1	Hexachloroethane
68-11-1	Mercaptoacetic acid; [Thioglycollic acid]
68-12-2	Dimethylformamide
71-23-8	n-Propanol; [n-Propyl alcohol]; [Propan-1-ol]
71-36-3	Butan-1-ol; [n-Butyl alcohol]
71-43-2	Benzene
71-55-6	1,1,1-Trichloroethane; [Methyl chloroform]
72-20-8	Endrin (ISO)
72-43-5	Methoxychlor (ISO); [DMDT]; [2,2 Bis(p-methoxyphenyl)-1,1,1-trichloroethane]
74-82-8	Methane
74-83-9	Bromomethane; [Methyl bromide]
74-84-0	Ethane
74-85-1	Ethylene
74-86-2	Acetylene
74-87-3	Chloromethane; [Methyl chloride]
74-88-4	Methyl iodide; [Iodomethane]
74-89-5	Methylamine
74-90-8	Hydrogen cyanide
74-93-1	Methanethiol; [Methyl mercaptan]
74-96-4	Ethyl bromide; [Bromoethane]

CAS Number	
74-97-5	Bromochloromethane; [Chlorobromomethane]
74-98-6	Propane
74-99-7	Methyl acetylene
75-00-3	Ethyl chloride; [Chloroethane]
75-01-4	Vinyl chloride(VCM); [Chloroethylene]
75-02-5	Vinyl fluoride
75-04-7	Ethylamine
75-05-8	Acetonitrile
75-07-0	Acetaldehyde
75-08-1	Ethanethiol; [Ethyl mercaptan]
75-09-2	Dichloromethane; [Methylene chloride]
75-12-7	Formamide
75-15-0	Carbon disulphide
75-18-3	Dimethyl sulphide
75-21-8	Ethylene oxide
75-25-2	Tribromomethane; [Bromoform]
75-31-0	Isopropylamine
75-34-3	1,1-Dichloroethane; [Ethylidene dichloride]
75-35-4	1,1-Dichloroethylene; [Vinylidene chloride]
75-38-7	Vinylidene fluoride
75-43-4	Dichlorofluoromethane; [Fluorodichloromethane]
75-44-5	Phosgene; [Carbonyl chloride]
75-45-6	Difluorochloromethane; [Chlorodifluoromethane]
75-47-8	Iodoform
75-50-3	Trimethylamine
75-52-5	Nitromethane
75-56-9	Propylene oxide
75-61-6	Difluorodibromomethane; [Dibromodifluoromethane]
75-63-8	Trifluorobromomethane; [Bromotrifluoromethane]
75-65-0	2-Methylpropan-2-ol; [tert-Butyl alcohol]
75-69-4	Trichlorofluoromethane; [Fluorotrichloromethane]
75-71-8	Dichlorodifluoromethane; [Difluorodichloromethane]
75-74-1	Tetramethyl lead
75-99-0	Dichloropropionic acid
76-03-9	Trichloroacetic acid
76-06-2	Chloropicrin; [Trichloronitromethane]
76-11-9	1,1,1,2-Tetrachloro-2,2-difluoroethane
76-12-0	1,1,2,2-Tetrachloro-1,2- difluoroethane
76-13-1	1,1,2-Trichlorotrifluoroethane
76-14-2	1,2-Dichlorotetrafluoroethane; [Tetra-fluoro-dichloro-ethane]; [Cryofluorane]; [INN]
76-15-3	Chloropentafluoroethane
76-22-2	Bornan-2-one; [Camphor]
76-44-8	Heptachlor (ISO)
77-47-4	Hexachlorocyclopentadiene
77-73-6	Dicyclopentadiene
77-78-1	Dimethyl sulphate
78-00-2	Tetraethyl lead
78-10-4	Ethyl silicate; [Tetra-ethyl-orthosilicate]
78-30-8	Tri-o-tolyl phosphate; [Triortho-cresyl phosphate]
78-34-2	Dioxathion (ISO)
78-59-1	3,5,5-Trimethylcyclohex-2-enone; [Isophorone]
78-78-4	iso-Pentane
78-83-1	Isobutyl alcohol; [2-methyl propan-1-ol]
78-87-5	Propylene dichloride
78-92-2	Butan-2-ol; [sec-Butyl alcohol]
78-93-3	Methyl ethyl ketone (MEK); [But-2-one]
78-94-4	Methyl vinyl ketone; [Butenone]
78-95-5	Chloroacetone



CAS Number	
79-00-5	1,1,2-Trichloroethane
79-01-6	Trichloroethylene
79-04-9	Chloroacetyl chloride
79-06-1	Acrylamide
79-09-4	Propionic acid
79-10-7	Acrylic acid
79-11-8	Monochloroacetic acid
79-20-9	Methyl acetate
79-24-3	Nitroethane
79-27-6	1,1,2,2-Tetrabromoethane; [Acetylene tetrabromide]
79-34-5	1,1,2,2, Tetrachloroethane
79-41-4	Methacrylic acid
79-44-7	Dimethyl carbamoyl chloride
79-46-9	2-Nitropropane
80-62-6	Methyl methacrylate
81-81-2	Warfarin (ISO)
82-68-8	Pentachloronitrobenzene
83-79-4	Rotenone (ISO); [Derris, commercial]
84-61-7	Dicyclohexyl phthalate
84-66-2	Diethyl phthalate
84-69-5	Diisobutyl phthalate
84-74-2	Dibutyl phthalate
84-76-4	Dinonyl phthalate
85-00-7	Diquat dibromide(ISO)
85-42-7	Cyclohexane-1,2-dicarboxylic anhydride
85-44-9	Phthalic anhydride
85-68-7	Butyl benzyl phthalate; [Benzyl butyl phthalate]
86-50-0	Guthion; [Azinphos-methyl]
87-68-3	Hexachlorobutadiene
87-86-5	Pentachlorophenol
88-12-0	Vinyl pyrrolidone
88-72-2	2-Nitrotoluene
88-89-1	Picric acid; [2,4,6-Trinitrophenol]
89-72-5	2-sec- Butylphenol
90-04-0	o-Anisidine
91-20-3	Naphthalene
91-59-8	β-Napthylamine
91-94-1	3,3-Dichlorobenzidine
92-52-4	Biphenyl; [Diphenyl]
92-67-1	4-Aminodiphenyl
92-87-5	Benzidene
92-93-3	4-Nitrodiphenyl
93-76-5	2,4,5-Trichloro-phenoxyacetic acid; [2,4,5-T (ISO)]
94-36-0	Dibenzoyl peroxide; [Benzoyl peroxide]
94-75-7	2,4-Dichlorophenoxyacetic acid; [2,4-D (ISO)]
95-13-6	Indene
95-47-6	Xylene, o-isomer
95-49-8	2-Chlorotoluene
95-50-1	1,2 Dichlorobenzene
95-53-4	o-Toluidine
96-18-4	1,2,3-Trichloropropane
96-22-0	Pentan-3-one; [Diethyl ketone]
96-29-7	Methyl ethyl ketoxime
96-33-3	Methyl acrylate
96-69-5	6,6'-di-tert-butyl-4,4'-thio-di-m-cresol; [4,4'-Thiobis (6-tert-butyl-m-cresol)]
98-00-0	Furfuryl alcohol
98-01-1	2-Furaldehyde (Furfural)
98-51-1	p-tert Butyltoluene

CAS Number	
98-59-9	p-Toluenesulphonyl chloride
98-82-8	Isopropyl benzene; [Cumene]
98-83-9	2-Phenylpropene; [ $\alpha$ -Methyl styrene]
98-86-2	Acetophenone
98-95-3	Nitrobenzene
99-08-1	3-Nitrotoluene
99-99-0	4-Nitrotoluene
100-00-5	1-Chloro-4-nitrobenzene
100-01-6	4-Nitroaniline
100-21-0	Terephthalic acid
100-37-8	2-Diethylaminoethanol
100-40-3	4-Vinylcyclohexene
100-41-4	Ethylbenzene
100-42-5	Styrene; [Phenyl ethylene]; [Vinyl benzene]
100-44-7	Benzyl chloride; [Chlorotoluene]
100-61-8	N-Methylaniline
100-63-0	Phenylhydrazine
100-74-3	4-Ethylmorpholine
101-14-4	MbOCA; [4,4' Methylene bis-(2-chloroaniline)]; [2,2'-Dichloro-4,4'methylene-dianiline]
101-68-8	4,4'-Methylene-diphenyl diisocyanate; [MDI]
101-77-9	4,4-Diaminodiphenylmethane [DADPM]; [4,4'-methylenedianiline, (MDA)]; [DDM]
101-84-8	Diphenyl ether
102-54-5	Ferrocene; [Dicyclopentadienyliron]
102-71-6	Triethanolamine
102-81-8	2-N-Dibutylaminoethanol
103-90-2	Paracetamol
104-94-9	p-Anisidine
105-46-4	sec-Butyl acetate
105-60-2	$\alpha$ -Caprolactam; [1,6-Hexanolactam]
106-35-4	Heptan-3-one; [Ethyl butyl ketone]
106-42-3	Xylene p-isomer
106-46-7	1,4-Dichlorobenzene
106-49-0	p-Toluidine
106-50-3	p-Phenylenediamine
106-51-4	Quinone; [p-Benzoquinone]
106-87-6	4-Vinylcyclohexene dioxide; [1,2-epoxy-4-epoxyethylcyclohexane]
106-89-8	Epichlorohydrin; [1-Chloro-2,3-epoxy propane ether]
106-92-3	Allyl 2,3-epoxypropyl ether; [Allyl glycidyl ether]; [AGE]
106-93-4	Ethylene dibromide; [1,2-Dibromoethane]
106-97-8	Butane
106-99-0	Buta-1,3-diene
107-02-8	Acrolein; [Acrylaldehyde]
107-05-1	Allyl chloride
107-06-2	1,2-Dichloroethane; [Ethylenedichloride]
107-07-3	Ethylene chlorohydrin; [2-Chloroethanol]
107-13-1	Acrylonitrile
107-15-3	Ethylenediamine; [1,2-Diaminoethane]
107-18-6	Allyl alcohol
107-19-7	Prop-2-yn-1-ol; [Propargyl alcohol]
107-20-0	Chloroacetaldehyde
107-21-1	Ethylene glycol ; [1,2-dihydroxybenzene]; [Ethane-1,2-diol]
107-30-2	Chloromethyl methyl ether
107-31-3	Methyl formate
107-41-5	Hexylene glycol; [2-methylpentane-2,4-diol]
107-49-3	O,O,O'O'-Tetraethyl pyrophosphate(ISO); [TEPP]
107-66-4	Dibutyl hydrogen phosphate; [Di-n-butyl phosphate]
107-87-9	Pentan-2-one; [Methyl propyl ketone]
107-98-2	Propylene glycol monomethyl ether; [1-Methoxy propan-2-ol]



CAS Number	
108-03-2	1-Nitropropane
108-05-4	Vinyl acetate
108-10-1	Methyl isobutyl ketone (MIBK); [Hexone]; [Isobutyl methyl ketone]; [4-methyl pentan-2-one]
108-11-2	Methyl isobutyl carbinol; [4-Methyl pentane-2-ol]
108-18-9	Diisopropylamine
108-20-3	Isopropyl ether; [Diisopropyl ether]
108-21-4	Isopropyl acetate
108-23-6	Isopropyl chloroformate
108-24-7	Acetic anhydride
108-31-6	Maleic anhydride
108-38-3	Xylene m-isomer
108-44-1	m-Toluidine
108-46-3	Resorcinol; [m-Dihydroxy benzene]
108-57-6	Divinylbenzene
108-65-6	2-Methoxy-1-methylethylacetate
108-67-8	Mesitylene; [1,3,5-trimethyl benzene]
108-83-8	Diisobutyl ketone; [2,6-Dimethyl heptan-4-one]
108-84-9	1,3-Dimethylbutyl acetate
108-87-2	Methylcyclohexane
108-88-3	Toluene
108-90-7	Chlorobenzene
108-91-8	Cyclohexylamine
108-93-0	Cyclohexanol
108-94-1	Cyclohexanone
108-95-2	Phenol
108-98-5	Benzenethiol; Phenyl mercaptan]
109-59-1	Isopropoxyethanol
109-60-4	n-Propyl acetate
109-66-0	n-Pentane
109-73-9	n-Butylamine
109-79-5	Butanethiol; [n-Butyl mercaptan]
109-86-4	2-Methoxyethanol; [Ethylene glycol monoethyl ether]
109-87-5	Methylal; Dimethoxy methane]
109-89-7	Diethylamine
109-94-4	Ethyl formate
109-99-9	Tetrahydrofuran
110-12-3	Isoamyl methyl ketone; [Methyl isoamyl ketone]; [5-Methylhexan-2-one]
110-19-0	Isobutyl acetate
110-43-0	Heptan-2-one; [ Methyl-n-amyl-ketone]
110-49-6	2-Methoxyethyl acetate; [Ethylene glycol monomethyl ether acetate]
110-54-3	n-Hexane
110-62-3	n-Valeraldehyde
110-80-5	2-Ethoxyethanol; [Ethylene glycol monoethyl ether]; [Glycol monoethyl ether]
110-82-7	Cyclohexane
110-83-8	Cyclohexene
110-85-0	Piperazine
110-86-1	Pyridine
110-89-4	Piperidine
110-91-8	Morpholine
111-15-9	2-Ethoxyethyl acetate; [Ethylene glycol monoethyl ether acetate]
111-30-8	Glutaraldehyde
111-40-0	Diethylene triamine; [2,2'-Iminodi(ethylamine)]; [2,2'-Diaminodiethylamine]; [1,4,7-Tri- (aza)-heptane]
111-42-2	Diethanolamine; [2,2'-Iminodiethanol]
111-44-4	Dichloroethyl ether
111-46-6	Diethylene glycol; [2,2'-Oxydiethanol]
111-65-9	n-Octane
111-76-2	2-Butoxyethanol; [Ethylene glycol monobutyl ether]



CAS Number	
111-77-3	2-(2-Methoxyethoxy)ethanol
111-84-2	Nonane
112-07-2	2-Butoxyethyl acetate
112-34-5	2-(2-Butoxyethoxy)ethanol
112-55-0	Dodecyl mercaptan
114-26-1	Propoxur (ISO)
115-07-1	Propylene
115-10-6	Dimethyl ether
115-29-7	Endosulfan (ISO)
115-77-5	Pentaerythritol
115-86-6	Triphenyl phosphate
117-81-7	Di-sec-octyl phthalate; [Di(2-ethyl hexyl) phthalate]; [Bis(2-ethyl hexyl) phthalate]
118-52-5	1,3-Dichloro-5,5-dimethyl-hydantoin
118-96-7	2,4,6-Trinitrotoluene; [TNT]
119-93-7	o-Tolidine
120-80-9	Catechol; [Pyrocatechol]
120-82-1	1,2,4-Trichlorobenzene
121-44-8	Triethylamine
121-45-9	Trimethyl phosphite
121-69-7	N,N-Dimethylaniline
121-75-5	Malathion (ISO)
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine; [Cyclonite]; [RDX]
122-39-4	Diphenylamine
122-60-1	Phenyl-2,3-epoxypropyl ether; [Phenyl glycidyl ether]; [PGE]
123-19-3	Dipropyl ketone
123-31-9	Hydroquinone; [Dihydroxybenzene]
123-42-2	Diacetone alcohol; [4-hydroxy-4-methyl-2-pentanone]
123-51-3	Isoamyl alcohol; [3-Methylbutan-1-ol]
123-73-9	trans But-2-enal; [Crotonaldehyde]
123-77-3	C, C'-azodi(formamide); [Azodicarbonamide]
123-86-4	Butyl acetate
123-91-1	1,4-Dioxane, tech. Grade
123-92-2	Isopentyl acetate; [Isoamyl acetate]
124-04-9	Adipic acid
124-09-4	1,6 Hexanediamine
124-38-9	Carbon dioxide
124-40-3	Dimethylamine
126-73-8	Tributyl phosphate
126-98-7	Methacrylonitrile; [Methylacrylonitrile]
126-99-8	$\beta$ -Chloroprene; [2-Chloro-1,3-butadiene]
127-18-4	Tetrachloroethylene; [Perchloroethylene]
127-19-5	N,N'-Dimethylacetamide
128-37-0	2,6-Ditertiary-butyl-para- cresol
131-11-3	Dimethyl phthalate
131-17-9	Diallyl phthalate
133-06-2	Captan (ISO )
136-78-7	Sodium 2-(2,4-dichlorophenoxy) ethyl sulphate; [Sesone]
137-05-3	Methyl 2-cyanoacrylate
137-26-8	Thiram (ISO)
138-22-7	Butyl lactate
140-88-5	Ethyl acrylate
141-32-2	Butyl acrylate
141-43-5	2-Aminoethanol; [Ethanalamine]
141-66-2	Dicrotophos
141-78-6	Ethyl acetate
141-79-7	Mesityl oxide; [4-Methyl pent-3-en-2-one]
142-64-3	Piperazine dihydrochloride
142-82-5	n-Heptane



CAS Number	
144-62-7	Oxalic acid
148-01-6	Dinitolmide
149-26-8	2-(2,4-dichlorophenoxy)ethyl hydrogensulphate); [2,4-DES]
149-57-5	Ethyl hexanoic acid
150-76-5	4-Methoxyphenol; [Mequinol]
151-56-4	Ethyleneimine; [Aziridine]
151-67-7	Halothane
156-62-7	Calcium cyanamide
205-99-2	Benzo[β]fluroanthene
287-92-3	Cyclopentane
298-00-0	Parathion-methyl (ISO); [Methyl parathion]
298-02-2	Phorate (ISO)
298-04-4	Disulfoton (ISO)
299-84-3	Ronnel; [Fenchlorphos(ISO)]
299-86-5	Crufomate
300-76-5	1,2 -dibromo-2,2-dichloro ethyl dimethyl phosphate; [Naled]; [Dibrom]
302-01-2	Hydrazine
309-00-2	Aldrin (ISO)
314-40-9	Bromacil (ISO)
330-54-1	Diuron (ISO)
333-41-5	Diazinon (ISO)
334-88-3	Diazomethane
353-50-4	Carbonyl fluoride
382-21-8	Perfluoroisobutylene
409-21-2	Silicon Carbide
420-04-2	Cyanamide
460-19-5	Cyanogen; [Oxalonitrile]
463-51-4	Ketene
463-82-1	neo-Pentane
479-45-8	Tetryl; [N-Methyl-N 2,4,6-tetranitrol-aniline]
504-29-0	2-Aminopyridine; [2-Pyridylamine]
506-77-4	Cyanogen chloride
509-14-8	Tetranitromethane
526-73-8	1,2,3 - Trimethylbenzene
532-27-4	2-Chloroacetophenone; [Phenacyl chloride]
534-52-1	Dinitro-o-cresol; [2-Methyl-4,6-dinitrophenol]
540-59-0	Acetylene Dichloride; [1,2-dichloroethylene, cis:trans isomers 60:40]
540-88-5	tert-Butyl acetate
541-41-3	Ethyl chloroformate
541-85-5	5-Methylheptan-3-one; [ethylamyl ketone]
542-75-6	1,3-Dichloropropene, cis and trans isomers
542-88-1	Bis(chloromethyl)ether (BCME)
542-92-7	Cyclopentadiene
546-93-0	Magnesite
552-30-7	Trimellitic anhydride; [Benzene-1,2,4-tricarboxylic acid 1,2-anhydride]
556-52-5	Glycidol
557-05-1	Zinc distearate
558-13-4	Carbon tetrabromide; [Tetrabromomethane]
563-80-4	Methyl isopropyl ketone
583-60-8	2-Methylcyclohexanone
584-84-9	Toluene diisocyanate; [TDI]
591-78-6	Hexan-2-one
592-34-7	n-Butyl chloroformate
593-60-2	Vinyl bromide; [Bromoethylene]
594-42-3	Perchloromethyl mercaptan
594-72-9	1,1-Dichloro-1-nitroethane
598-56-1	N,N-Dimethylethylamine
600-25-9	1-Chloro-1-nitropropane

CAS Number	
603-34-9	Triphenylamine
608-73-1	γ-Hexachlorocyclohexane; [Lindane]; [BHC]; [HCH(ISO)]
620-11-1	3-Pentylacetate
624-83-9	Methyl isocyanate
624-92-0	Dimethyl disulphide
625-16-1	Tert-Amyl acetate
626-38-0	1-Methylbutyl acetate; [sec-Amyl acetate]
627-13-4	n-Propyl nitrate
628-63-7	Pentyl acetate; [n-Amyl acetate]
628-96-6	Ethylene glycol dinitrate; [Ethylene dinitrate]
630-08-0	Carbon monoxide
646-06-0	1,3-Dioxolane
681-84-5	Methyl silicate; [Tetra-methyl ortho silicate]
684-16-2	Hexafluoroacetone
764-41-0	1,4-Dichloro-2-butene
768-52-5	n-Isopropylaniline
822-06-0	Hexamethylene diisocyanate
872-50-4	1-Methyl-2-pyrrolidone
999-61-1	2-Hydroxypropyl acrylate
1120-71-4	1,3-Propane sultone
1189-85-1	tert-Butyl chromate
1300-73-8	Xylidine (mixed isomers), [Amino dimethyl benzene]
1302-74-5	Emery
1303-86-2	Boron oxide; [Diboron trioxide]
1303-96-4	Borates, tetra, sodium, decahydrous; [Disodium tetraborate, decahydrate]
1304-82-1	Bismuth telluride; [Dibismuth tritelluride]
1305-62-0	Calcium hydroxide
1305-78-8	Calcium oxide
1306-19-0	Cadmium oxide fume
1306-23-6	Cadmium sulphide and cadmium sulphide pigments
1309-37-1	Iron oxide; [Rouge]
1309-48-4	Magnesium oxide
1310-58-3	Potassium hydroxide
1310-65-2	Lithium hydroxide
1310-73-2	Sodium hydroxide
1314-13-2	Zinc oxide, fume
1314-56-3	Diphosphorus pentoxide
1314-62-1	Vanadium pentaoxide; [Divanadium pentaoxide]
1314-80-3	Phosphorus pentasulphide; [Diphosphorus pentasulphide]
1317-35-7	Trimanganese tetraoxide; [Manganese tetraoxide]
1317-65-3	Calcium carbonate; [Marble]; [Limestone]
1317-95-9	Tripoli, Crystalline silica
1319-77-3	Cresols, all isomers
1321-64-8	Pentachloronaphthalene
1321-65-9	Trichloronaphthalene
1330-20-7	Xylene, mixed isomers
1330-43-4	Borates, tetra, sodium, anhydrous; [Disodium tetraborate, anhydrous]
1332-21-4	Asbestos
1332-58-7	Kaolin
1333-74-0	Hydrogen
1333-86-4	Carbon black
1335-87-1	Hexachloronaphthalene
1335-88-2	Tetrachloronaphthalenes, all isomers
1338-23-4	Methyl ethyl ketone peroxides (MEKP)
1344-28-1	Aluminium oxides
1344-95-2	Calcium silicate
1563-66-2	Carbofuran (ISO)
1910-42-5	Paraquat dichloride



CAS Number	
1912-24-9	Atrazine
1918-02-1	Picloram (ISO)
1929-82-4	Nitrapyrin; [2-chloro-6-trichloromethyl pyridine]
2001-28-4	Crocidolite
2039-87-4	o-Chlorostyrene
2179-59-1	Allyl propyl disulphide
2234-13-1	Octachloronaphthalene
2238-07-5	Diglycidyl ether; [DGE]; [bis (2,3-epoxypropyl) ether]
2425-06-1	Captafol (ISO)
2426-08-6	n-Butyl glycidyl ether; [BGE]; [Butyl-2,3-epoxypropyl] ether]
2451-62-9	Triglycidyl isocyanurate, [TGIC]; [Araldite PT810]
2528-36-1	Dibutyl phenyl phosphate
2551-62-4	Sulphur hexafluoride
2698-41-1	o-Chlorobenzylidene malonitrile
2699-79-8	Sulphuryl difluoride
2921-88-2	Chlorpyrifos (ISO)
3173-72-6	1,5-Naphthylene diisocyanate
3333-52-6	Tetramethyl succinonitrile
3383-96-8	Temephos
3689-24-5	O,O,O',O' - Tetraethyl dithio- pyrophosphate(ISO); [sulphotep]; [TEDP]
3825-26-1	Ammonia perfluorooctanoate
4016-14-2	Isopropyl glycidyl ether (IGE); [2,3-Epoxypropyl isopropyl
4098-71-9	Isophorone diisocyanate (IPDI)
5714-22-7	Disulphur decafluoride; [Sulphur pentafluoride]
6423-43-4	Propylene dinitrate (PGDN) ; [Propylene glycol dinitrate]
6923-22-4	Monocrotophos
7085-85-0	Ethyl cyanoacrylate
7429-90-5	Aluminium metal
7439-92-1	Lead
7439-96-5	Manganese
7439-97-6	Mercury
7439-98-7	Molybdenum
7440-01-9	Neon
7440-02-0	Nickel
7440-06-4	Platinum
7440-16-6	Rhodium
7440-21-3	Silicon
7440-22-4	Silver
7440-25-7	Tantalum
7440-28-0	Thallium,
7440-31-5	Tin
7440-33-7	Tungsten
7440-36-0	Antimony
7440-37-1	Argon
7440-38-2	Arsenic
7440-39-3	Barium
7440-41-7	Beryllium
7440-43-9	Cadmium
7440-44-0	Graphite
7440-47-3	Chromium
7440-48-4	Cobalt
7440-50-8	Copper
7440-58-6	Hafnium
7440-59-7	Helium
7440-61-1	Uranium compounds, natural
7440-65-5	Yttrium
7440-67-7	Zirconium
7440-74-6	Indium

CAS Number	
7446-09-5	Sulphur dioxide
7553-56-2	Iodine
7572-29-4	Dichloroacetylene
7580-67-8	Lithium hydride
7616-94-6	Perchloryl fluoride
7631-90-5	Sodium bisulfite; [Sodium hydrogen sulphite]
7637-07-2	Boron trifluoride
7646-85-7	Zinc chloride
7647-01-0	Hydrogen chloride
7664-38-2	Orthophosphoric acid; [Phosphoric acid]
7664-39-3	Hydrogen fluoride
7664-41-7	Ammonia
7664-93-9	Sulphuric acid
7681-57-4	Disodium disulphite; [Sodium Metabisulphite]
7697-37-2	Nitric acid
7719-12-2	Phosphorus trichloride
7719-09-7	Thionyl chloride
7722-84-1	Hydrogen peroxide
7722-88-5	Tetrasodium pyrophosphate
7723-14-0	Phosphorus, yellow
7726-95-6	Bromine
7727-21-1	Dipotassium peroxodisulphate; [Potassium persulphate]
7727-37-9	Nitrogen
7727-43-7	Barium sulphate
7727-54-0	Diammonium peroxodisulphate; [Ammonium persulphate]
7773-06-0	Ammonium sulphamidate
7775-27-1	Disodium peroxodisulphate; [Sodium persulphate]
7778-18-9	Calcium sulphate
7782-41-4	Fluorine
7782-49-2	Selenium
7782-50-5	Chlorine
7782-65-2	Germane; [Germanium tetrahydride]
7782-79-8	Hydrazoic acid
7783-06-4	Hydrogen sulphide
7783-07-5	Dihydrogen selenide; [Hydrogen selenide]
7783-41-7	Oxygen difluoride
7783-54-2	Nitrogen trifluoride
7783-60-0	Sulphur tetrafluoride
7783-79-1	Selenium hexafluoride
7784-42-1	Arsine
7786-34-7	Mevinphos (ISO); [Phosdrin]
7789-06-2	Strontium chromate
7789-30-2	Bromine pentafluoride
7790-91-2	Chlorine trifluoride
7790-94-5	Chlorosulphonic acid
7803-51-2	Phosphine
7803-52-3	Stibine
7803-62-5	Silane; [Silicon tetrahydride]
8002-74-2	Paraffin wax
8003-34-7	Pyrethrins (ISO); [Pyrethrum]
8006-64-2	Turpentine
8030-30-6	Rubber solvent; [Naphta]
8032-32-4	VM and P Naphta
8052-41-3	Stoddard solvent; [White spirit]
8052-42-4	Asphalt, petroleum fumes
8065-48-3	Demeton
9002-86-2	Polyvinyl chloride (PVC)
9004-34-6	Cellulose



CAS Number	
9005-25-8	Starch
9014-01-1	Subtilisins (proteolytic enzymes as 100% pure)
10024-97-2	Nitrous oxide
10025-67-9	Sulphur monochloride; [Disulphur dichloride]
10025-87-3	Phosphoryl trichloride
10026-13-8	Phosphorus pentachloride
10028-15-6	Ozone
10035-10-6	Hydrogen bromide
10049-04-4	Chlorine dioxide
10101-41-4	Gypsum
10102-43-9	Nitric oxide; [Nitrogen monoxide]
10102-44-0	Nitrogen dioxide
10294-33-4	Boron tribromide
11097-69-1	Chlorinated biphenyls (54%); [Polychlorinated biphenyls]
11130-12-4	Tetra sodium borate pentahydrate
12001-29-5	Chrysotile, asbestos
12079-65-1	Manganese cyclopentadienyl tricarbonyl; [Tricarbonyl (eta-cyclopentadienyl) manganese]
12108-13-3	Tricarbonyl (methyl cyclopentadienyl) manganese; [Methyl cyclopentadienyl manganese tricarbonyl]
12125-02-9	Ammonium chloride
12172-73-5	Amosite, asbestos
12179-04-3	Tetra sodium borate pentahydrate
12604-58-9	Ferrovandium
13121-70-5	Tricyclohexyltin hydroxide; [Cyhexatin(ISO)]
13149-00-3	cis-Cyclohexane-1,2-dicarboxylic anhydride
13463-39-3	Nickel carbonyl; [Tetracarbonyl nickel]
13463-40-6	Pentacarbonyliron; [Iron pentacarbonyl]
13463-67-7	Titanium dioxide
13494-80-9	Tellurium
13530-65-9	Zinc chromate
13765-19-0	Calcium chromate
13838-16-9	Enflurane
14166-21-3	Trans-cyclohexane-1,2-dicarboxylic anhydride
14464-46-1	Cristobalite, crystalline silica
14484-64-1	Ferbam (ISO)
14807-96-6	Talc
14808-60-7	Quartz, crystalline silica
14857-34-2	Dimethylethoxysilane
14977-61-8	Chromyl Chloride
15468-32-3	Tridymite, respirable dust(Silica)
16752-77-5	Methomyl (ISO)
16984-48-8	Fluoride (as F)
17702-41-9	Decaborane
17804-35-2	Benomyl (ISO)
19287-45-7	Diborane
19624-22-7	Pentaborane
20816-12-0	Osmium tetroxide (as Os)
21087-64-9	Metribuzin
21351-79-1	Caesium hydroxide
24468-13-1	2-Ethylhexyl chloroformate
25013-15-4	Methylstyrene; [Vinyl toluene]
25154-54-5	Dinitrobenzene, all isomers
25321-14-6	2,4-Dinitrotoluene
25551-13-7	Trimethylbenzenes, all isomers or mixtures
25639-42-3	Methylcyclohexanol
26140-60-3	Terphenyls, all isomers
26499-65-0	Plaster of Paris
26628-22-8	Sodium azide

CAS Number	
26675-46-7	Isoflurane
26761-40-0	Diisodecyl phthalate
26952-21-6	Isooctyl alcohol (mixed isomers)
27554-26-3	Diisooctyl phthalate
28553-12-0	Diisononyl phthalate
34590-94-8	[2-Methoxymethylethoxy]-1-propanol; [Dipropylene glycol methyl ether]
35400-43-2	Sulprofus
53469-21-9	Chlorinated biphenyls (42%); [Polychlorinated biphenyls]
60676-86-0	Silica, fused
61788-32-7	Hydrogenated terphenyls
65996-93-2	Coal tar pitch volatiles
65997-15-1	Portland cement
68476-85-7	Liquefied petroleum gas (LPG)
68855-54-9	Diatomaceous earth, natural
77536-66-4	Actinolite asbestos
77536-67-5	Anthophyllite, asbestos
77536-68-6	Tremolite asbestos
132207-32-0	Chrysotile, asbestos



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