

The ISS Dangerous Substances Classification and Labelling Database

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Summary. The database contains information about the substances marketed in the European Union at present. About 8000 out of 100 000 substances on the market are listed in Annex I (Directive 67/548/EC), the published list of substances with a harmonised classification and labelling. For each entry the database gives the following details: name, CAS number, EC number, classification, labelling, specific concentration limits, reference to the last amended EU and national law. There is also a section where the legislative frame is reported together with the EU Directives and the corresponding national implementation decrees. In addition to searching a substance by name/part of the name or identifying numbers the query can be done by symbols, R and S phrases, substance categories.

Key words: dangerous substances, hazard classification, labelling, database, MySQL, PHP, Internet.

Riassunto (*La banca dati sulla classificazione ed etichettatura delle sostanze pericolose*). La banca dati contiene informazioni relative alle sostanze presenti sul mercato dell'Unione Europea. Circa 8000 sostanze, tra le 100 000 presenti sul mercato, sono riportate nell'allegato I (Direttiva 67/548/CE), la lista ufficiale delle sostanze con classificazione ed etichettatura armonizzate. Per ogni voce la banca dati fornisce i seguenti dettagli: nome, numeri CAS e CE, classificazione, etichettatura, limiti di concentrazione specifici, riferimenti alla normativa europea e nazionale più aggiornata. È anche presente una sezione che riporta il quadro normativo attuale con le Direttive UE e i relativi recepimenti nazionali. La banca dati può essere interrogata oltre che con il nome o parte del nome e i numeri identificativi delle sostanze, anche attraverso i simboli di pericolo, le frasi R e S e le categorie.

Parole chiave: sostanze pericolose, classificazione di pericolo, etichettatura, basi di dati, MySQL, PHP, Internet.

INTRODUCTION

The section Dangerous Substances and Preparations of the Department of Environmental and Primary Prevention of the Istituto Superiore di Sanità (ISS) deals also with topics concerning classification and labelling of dangerous substances and preparations (www.iss.it/spps).

In the section Labelling of Dangerous Substances, the legislation is laid down together with the EINECS list of 102 000 existing substances and with the Annex I to the list of substances each with the corresponding classification and labelling (EC Directive 67/548 as updated to the 29° Adaptation to Technical Progress, ATP). This website intends to be a contribution to a better knowledge of chemicals which are normally used both in working places and in consumer products. Transparency has been adopted for available not confidential information.

The classification and labelling of a chemical substance or a preparation is based on the evaluation of the hazard posed by it during the use according to the provisions of the Legislative Decrees n. 52, 3 February 1997 and n. 65, 14 April 2003 respectively.

The process of classification consists of placing a substance in one or more categories of danger (as defined in Article 2(2) of Directive 92/32/EEC) and assigning the qualifying risk phrase or phrases. The classification has consequences not only on labelling but also for other legislation and regulatory measures on dangerous substances.

Labelling and Safety Data Sheets (SDS) are the tools for the information about the danger posed by the use of the substance or the preparation.

All the substances and the preparations put on the market in the European Union need to be evaluated for their physico-chemical, toxicological and ecotoxicological properties in order to identify their potential hazard to humans and to the environment.

The outcoming classifications and labelling are transmitted to the users by means of the labels and the SDS and represent also the basis for the risk assessment of chemicals.

All the dangerous substances and preparations need to be classified and labelled independently of the quantities which are put on the market.

A substance is defined as “existing” if it was already present on the European market before the date of 18 September 1981, while a substance is defined as “new” if it was put on the market after this date.

All the “existing” substances are listed in the European Inventory of Existing Commercial Chemical Substances (EINECS) inventory containing 100 210 substances and all the “new” substances are listed in a separate list, the European List of Notified Chemical Substances (ELINCS).

The Annex I to the Decree n. 52 contains all the substances, among the two lists, which are classified as dangerous according to the criteria laid down in the Guide for classification and labelling (Annex VI).

In the Annex I list the substances are present with their EU official agreed classifications and the responsible for putting them on the market shall adopt these classifications and labelling both for the commercialisation and for the classification and labelling of the preparations in which they are contained.

Manufacturers, distributors and importers of dangerous substances which appear in the EINECS but which have not yet been introduced into Annex I shall be obliged to carry out an investigation to make themselves aware of the relevant and accessible data which exist concerning the properties of such substances. On the basis of this information, they shall package and provisionally label these substances according to the criteria in Annex VI (art. 6 of DL.vo 52/97).

DATABASE

The database contains identification, classification and labelling data of the “existing” and “new” substances with their names, CAS numbers and EC numbers.

The official EU classification and labelling updated to the 29th ATP of the base Directive 67/548 are reported in order to make easier the gathering of information present in many papers edited by the *Official Journal* and in corresponding implementations at national level.

It has to be pointed out that where some differences could arise the referring document is the paper version of the Italian official journal.

For further information on the substances please consult Toxnet and the National Library of Medicine

In addition to the database the following documentation is available:

- European and national laws for dangerous substances and preparations as last updated and modified. The frame is complex and evolves rapidly.
- The EC Directive 67/548 has been modified for nine times and adapted to the technical progress 29 times through variations of the ten technical annexes.
- There are ninety methods to be followed in order to perform the studies necessary to evaluate the properties on which the classification is based on.

They allow the definition of the physico-chemical, toxicological and ecotoxicological properties of the substances.

The database works by means of open source software's (MySQL, PHP) and is served via a web application being able to be updated and platform independent. It is also possible to extract data subsets in order to give other online information to the public.

Starting from www.iss.it/spps or www.iss.it/dbsp (Figure 1) the search page opens. It is not possible to have the whole list of all the entries as they are 102 000.

In the main query page there are three sections:

- generic query using specific numbers and/or part of the name with five fields;
- query based on one out of all the classification end points, with four fields;
- query based on one out of all the labelling end points with five fields.

The general query can be done by:

- CAS number, whole number or three characters at least, this number is given by the Chemical Abstract Service and univocally identifies each chemical substance;
- EC number, whole number or three characters at least, this number is given by the European Community and starts with 200 whether it is an existing substance or 400 if it is a new one notified after 1981;
- Index number, whole number or three characters at least, this number is given when the substance, family or entry is classified and labelled by EU;
- name or part of the name: the browser is able to search the whole name and/or part of the IUPAC name and synonymous;
- Annex I: it is possible to search in the subgroup of classified substances or in the whole database.

The EU official classification search can be carried on clicking one of the symbols given to the substance and these are divided in four groups in the search frame in order to make easier the selection.

The EU official labelling search can be carried on by:

- risk phrase, it is possible to select one of the risk phrase R numbers;
- safety advice, it is possible to select one of the safety advice S numbers;
- labelling, it is possible to select one of the symbols;
- specific concentration limits. The concentration limits and associated classifications are necessary to classify dangerous preparations containing the substance in accordance with Directive 1999/45/EC. Unless otherwise shown, the concentration limits are a percentage by weight of the substance calculated with reference to the total weight of the preparation. It is possible to select one of the health symbols in order to know which substances bear this classification due to its specific limits;

Istituto Superiore di Sanità: Etichettatura sostanze

http://www.dbsp.iss.it/

Etichettatura sostanze

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Ricerca di 101.801 sostanze

N. CAS N. CE N. Indice

Denominazione Contiene

Cercare solo Sostanze nell'Allegato I?

Classificazione

Categorie di pericolo Scegli... Cancerogenesi Scegli...

Mutagenesi Scegli... Tossicità riproduttiva Scegli...

Etichettatura

Frase di rischio Scegli... Consigli di prudenza Scegli...

Etichettatura Scegli... Limiti Concentrazione Scegli...

Categoria delle sostanze organiche Scegli...

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Ordina i risultati per... Nome sostanza

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Fig. 1 | The DBSP database query form.

- organic substances category, it is possible to select one out of 21 families which EU assigned an index number starting with a common three figures number (for example index numbers for all alcohols and their derivatives start with 603). The results from the query can be ordered by in-

creasing CAS numbers, EC numbers, index numbers or alphabetical order.

It is also possible to select each entry in the ordered list getting a page with all the details on the substance.

All the Annex I substances are present in the database with the following details:

- classification, labelling (symbols risk phrases, safety advices and specific concentration limits) all the codified phrases and notes both for substances and preparations are reported in the wording version;
- last ATP (adaptation to technical progress) where they are present and the corresponding national implementation decree.

The database has been online for six years and is going to be updated with 30th ATP which is near to be published in the European *Official Journal*.

Being all ISS's websites designed to be resolution independent (the ISS website is technically accessible because it responds to technical requirements

imposed by the Italian laws (5), where every citizen, including the ones who due to any kind of disability use a technological aid to surf the Net, must be able to benefit of the websites of the public administration) the forms are also suitable for mobile phones and PDA (personal digital assistant) in order to make easier getting information even when a PC is not available.

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