

The mhchem Bundle

documentation for version 3.03

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The mhchem bundle consists of two packages: mhchem and rsphrase.

The mhchem package provides two commands: one for typesetting **chemical molecular formulae** and one for typesetting **chemical equations** with these formulae.

The rsphrase package contains the text of all official **Risk and Safety (R and S) Phrases** that are used to label chemicals. At the time being, these phrases are available in Danish, Englisch, French, German (current spelling), and Spanish.

Your feedback is very welcome

If you use or evaluate this bundle of packages, I would very much like to hear from you. Please drop me a line stating what you do like or not like, bugs you found, what features you miss, what improvements you suggest, what phrases in the manual to correct, etc. You do not have to write novels, a one-line e-mail is absolutely fine with me.

Bugs and changes are still possible

Please note that there may still be some bugs and that the packages' behaviour may differ slightly in the future (for instance the width of an equation might differ by some points which in turn could lead to different page breaks).

Please make sure you read and agreed to the license (`legal.txt`) for this bundle, in particular the limited warranty.

Most Recent Changes

2006-01-24 v3.03, mhchem

- added: pgf arrows
- added: $\text{H}_2\text{(aq)}$ adds a small space before the '(aq)'
- bugfix: line height of formulae with \leftrightarrow was too large

2006-02-23 v3.02, mhchem (not published)

- bugfix: `\ce` now works properly in `\section` and `\tableofcontents`

2006-01-24 v3.01, rsphrase

- bugfix: you don't need have all hyphenations patterns installed any more
- bugfix: a typo

2006-01-24 v3.01, mhchem

- bugfix: `\leftside^{\mathrm{x}}` now works properly properly
- bugfix: `\cmath` uses standard math font (not chemical one) even in superscripts and subscripts
- bugfix: improved backward compatibility for `version=1`

2005-07-15 v3.00, mhchem

- added: more bonds

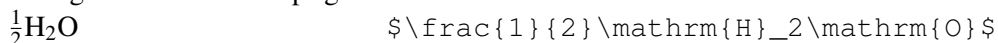
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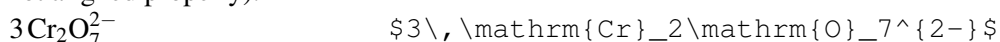
The mhchem Package

Introduction

For typesetting a single chemical formula from time to time, one can use L^AT_EX's math mode, manually setting the letters in an upright font.



In addition, one has to care about the height of subscripts, as the following example shows (2 and 7 are not aligned properly).



Other chemical packages are there to assist you with these two points. This package, however, goes further. To mention only a few of its features:

- adapts to the surrounding environment
Used inside text, the formula is displayed using the current text font; used in math mode, it adapts its size to the four possible sizes (e.g. $V_{\mathrm{H}_2\mathrm{O}}$).
- more natural input
I am convinced that (when expecting a chemical formula) it is easier to read and write $\mathrm{H}_3\mathrm{PO}_4$ instead of $\mathrm{H}_3\mathrm{PO}_4$. The latter is grouped wrongly according to the Gestalt rules. Furthermore, you can copy formulas from text e-mails and even Word documents and save a lot of time as you do not have to insert underscores. (One could argue that this is inconsistent with math mode and could lead to confusions. I believe, however that O_2 and x_2 are sufficiently distinct concepts).
- easy input of amount numbers
with automatic spacing, easy input of fractions
- fine typographic corrections
fine correction of the height of subscripts and superscripts; right-aligned left-side sub- and superscripts

... and a lot more. But let us stop the adverts block here and see for yourself how easy it can be to typeset chemical formulae. On the left-hand side you can see the L^AT_EX output that was produced with the command on the right.

Preamble

In order to use all of mhchem's features, request it in your document's preamble with the command

```
\usepackage[version=3]{mhchem} !
```

What about the ‘version=3’? During development, I became aware that some commands needed to be changed. But what about backward compatibility? I could, of course, have frozen mhchem and published a mhchem2. However, I decided to use an option in order to switch to the new interface. One can use ‘version=3’ for the most-recent version of mhchem, but ‘version=2’ and ‘version=1’ (or no option at all, but this will yield a warning) are still there for existing documents that use an old user-interface of mhchem. Those old documents should still produce the same results. However, I cannot guarantee 100% compatibility! (And, in fact, I am aware of some very minor incompatibilities. If you need an older version to reproduce your result, just mail me.)

If you already worked with version 1 or 2, you may want to read the section ‘Major Changes’ on page 11.

Basics

H_2O	<code>\ce{H2O}</code>
Sb_2O_3	<code>\ce{Sb2O3}</code>
H^+	<code>\ce{H+}</code>
CrO_4^{2-}	<code>\ce{CrO4^2-}</code>
AgCl_2^-	<code>\ce{AgCl2-}</code>
$[\text{AgCl}_2]^-$	<code>\ce{[AgCl2]-}</code>
Y^{99+}	<code>\ce{Y^{99}+}</code>
Y^{99+}	<code>\ce{Y^{99+}}</code>
NO_3^-	<code>\ce{NO3-}</code>
$(\text{NH}_4)_2\text{S}$	<code>\ce{(NH4)2S}</code>

Amounts

Place amounts directly in front of a formula. A small space will be inserted automatically.

$2\text{H}_2\text{O}$	<code>\ce{2H2O}</code>
$\frac{1}{2}\text{H}_2\text{O}$	<code>\ce{1/2H2O}</code>

Isotopes

${}^{227}_{90}\text{Th}^+$	<code>\ce{^{227}_{90}Th+}</code>
----------------------------	----------------------------------

Fonts

A few words about fonts. LaTeX distinguishes between text fonts and math fonts. In general, the math fonts have much more glyphs: alphas, nabla operators and all that kind of stuff. Ideally, the math font looks very similar to the text font and that is why many LaTeX users do not know about the two kinds of fonts. However, the distinction is important for the use of mhchem.

In the following examples, I will switch the text font to sans serif. This way, one can easily distinguish text font (sans serif) and math font (with serifs): text font and math font. When setting a document in sans serif, one would, of course, use a matching math font.

When you are in a math environment (e.g. opened and closed with a $\$$), you could simply use `\ce`. Its content will be set in an upright font. (Remember: all variables—like V for volume—are set using an italic font, physical units and chemical elements are set using an upright font.)

$V_{\text{H}_2\text{O}}$ `\$V_{\ce{H2O}}\$`

When used in text mode, `\ce` adapts to the current text font. You could simply write a formula in one of your section titles it would be set with the correct, no matter where it appears (section title, header, contents, references, ...).

H_2O , H_2O `\ce{H2O}`, `\ce{H2O}`

Ce^{IV} `\ce{Ce^{IV}}`

There are some special cases. A negative charge in text mode is replaced with a dash (—), because a text minus sign often is too short. All ‘operators’, e.g. ‘+’ and reaction arrows, are always taken from the math font.

Special Symbols

$\text{KCr}(\text{SO}_4)_2 \cdot 12 \text{H}_2\text{O}$ `\ce{KCr(SO4)2*12H2O}`

$\text{KCr}(\text{SO}_4)_2 \cdot 12 \text{H}_2\text{O}$ `\ce{KCr(SO4)2.12H2O}`

$[\text{Cd}\{\text{SC}(\text{NH}_2)_2\}_2] \cdot [\text{Cr}(\text{SCN})_4(\text{NH}_3)_2]_2$
`\cf{[Cd\{SC(NH2)2\}2].[Cr(SCN)4(NH3)2]2}`

RNO_2^- , RNO_2^- `\ce{RNO2^{-.}}`, `\ce{RNO2^{-.}}`

version=2

$\mu\text{-Cl}$ `\ce{\cmath{\mu}\hyphen Cl}`

Bonds

Horizontal bonds can be set using the characters `-`, `=` and `\#` inside a formula (single, double, triple bond) inside a formula (a `-` at the end of a formula yields a negative charge). version=2

$\text{C}_6\text{H}_5\text{-CHO}$ `\ce{C6H5-CHO}`

$\text{X}=\text{Y}\equiv\text{Z}$ `\ce{X=Y\#Z}`

$\text{A}-\text{B}=\text{C}\equiv\text{D}$ `\ce{A\sbond B\dbond C\tbond D}`

Different books visualise bonds in extremely different ways. I will implement the possibility to adjust the appearance in the future. In the meanwhile, the minus sign from the math font is used to display the bonds (even in text mode). The bonds are vertically aligned on the math axis. For most math fonts, this is lower than half the height of a capital letter.

The `\bond` command allows you to typeset some types of special bonds.

version=3

$A-B=C\equiv D$	<code>\ce{A\bond{-}B\bond{=}C\bond{\#}D}</code>
$A\sim B=C$	<code>\ce{A\bond{\sim}B\bond{\sim-}C}</code>
$A\equiv B\equiv C\equiv D$	<code>\ce{A\bond{\sim=}B\bond{\sim-}C\bond{\sim-}D}</code>
$A\cdots B\cdots C$	<code>\ce{A\bond{\dots}B\bond{\dots}C}</code>
$A\rightarrow B\leftarrow C$	<code>\ce{A\bond{->}B\bond{<-}C}</code>

Please be aware, that the dashed bonds use the `\scalebox` macro internally, which may not be visualised correctly by some DVI viewers. If you switch to another math font, the side-bearing of the minus sign may vary, which would cause the dashed bonds to align badly (in `\bond{\sim=}`, for instance). In that case, you may want to adjust the layout by using the command `\mhchemoptions{minus-sidebearing-left=0.06em, minus-sidebearing-right=0.11em}` with the appropriate values.

Using Math

Sometimes, it is necessary to disable automatic formatting. In that case, one can use the `\cmath` command (for ‘chemical’ math) inside `\ce`.

$\text{Fe}(\text{CN})_{\frac{6}{2}}$	<code>\ce{Fe(CN)_{\cmath{\frac{6}{2}}}}</code>
$x\text{Na}(\text{NH}_4)\text{HPO}_4 \xrightarrow{\Delta} (\text{NaPO}_3)_x + x\text{NH}_3 \uparrow + x\text{H}_2\text{O}$	<code>\ce{\cmath{x\,} Na(NH4)HPO4 ->[\Delta] (NaPO3)_{\cmath{x}} + \cmath{x\,} NH3 ^ + \cmath{x\,} H2O}</code>

Some Comments

All features mentioned above are provided by the `\cf` command. `\ce` calls `\cf` internally for all summary formulae and only sets the reaction arrows on its own. Most of the time, you do not have to worry about what command to use. Simply use `\ce` all the time. In some special cases, however, you may run into trouble. Recursion is one example (i.e. calling `\ce` from inside `\ce`). It may be helpful then, to use the `\cf` command for the inner formula.

Formulae

Reaction Arrows

$\text{CO}_2 + \text{C} \longrightarrow 2\text{CO}$	<code>\ce{CO2 + C -> 2CO}</code>
---	-------------------------------------

$\text{CO}_2 + \text{C} \longleftarrow 2\text{CO}$	<code>\ce{CO2 + C <- 2CO}</code>
$\text{CO}_2 + \text{C} \rightleftharpoons 2\text{CO}$	<code>\ce{CO2 + C <=> 2CO}</code>
$\text{H}^+ + \text{OH}^- \rightleftharpoons \text{H}_2\text{O}$	<code>\ce{H+ + OH- <=> H2O}</code>
$A \longleftrightarrow A'$	<code>\ce{\cmath{A} <-> \cmath{A'}}</code>
$\text{CO}_2 + \text{C} \xrightarrow{\alpha} 2\text{CO}$	<code>\ce{CO2 + C ->[\alpha] 2CO}</code>
$\text{CO}_2 + \text{C} \xrightarrow[\beta]{\alpha} 2\text{CO}$	<code>\ce{CO2 + C ->[\alpha][\beta] 2CO}</code>

As with `^` and `_`, the content above and below reaction arrows is set in math font. When you want to put descriptive text there, use the `\text` command. Or, as a shortcut, you could type a ‘T’ between reaction arrow and opening bracket.

$\text{CO}_2 + \text{C} \xrightarrow{\text{above}} 2\text{CO}$	<code>\ce{CO2 + C ->[\text{above}] 2CO}</code>
$\text{CO}_2 + \text{C} \xrightarrow[\text{below}]{\text{above}} 2\text{CO}$	<code>\ce{CO2 + C ->[\text{above}][\text{below}] 2CO}</code>
$\text{CO}_2 + \text{C} \xrightarrow[\text{below}]{\text{above}} 2\text{CO}$	<code>\ce{CO2 + C ->T[above][below] 2CO}</code>

Similarly, there is a shortcut for using `\ce` with reaction arrows:

$A \xrightarrow{+\text{H}_2\text{O}} B$	<code>\ce{\cmath{A} ->[\ce{+H2O}] \cmath{B}}</code>
$A \xrightarrow{+\text{H}_2\text{O}} B$	<code>\ce{\cmath{A} ->C[+H2O] \cmath{B}}</code>

Precipitate and Gas

Use `v` or `(v)` for precipitate (arrow down) and `^` or `(^)` for gas (arrow up), both separated by spaces.

$\text{SO}_4^{2-} + \text{Ba}^{2+} \longrightarrow \text{BaSO}_4 \downarrow$	<code>\ce{SO4^2- + Ba^2+ -> BaSO4 v}</code>
--	--

Watch Out!

Please be aware that you sometimes have to enclose spaces in braces. In particular, you have to do so, when they appear between brackets that belong to an reaction arrow.

$A \xleftrightarrow{\text{enclose spaces!}} A'$	<code>\ce{\cmath{A} <->T[{enclose spaces!}] \cmath{A'}}</code>
---	--

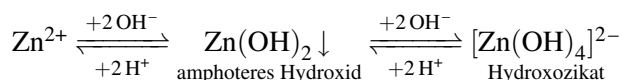
Everything that is unknown to `\ce` is passed on to a math environment. There is one drawback to this approach. If you use a `\LaTeX` command, `\ce` cannot know how many arguments this command takes. Often, this will result in unpredictable error messages. In such a case, simply enclose the command and all its arguments with a pair of braces.

$\underset{\text{water}}{\text{H}_2\text{O}}$	<code>\ce{{\underset{\text{water}}{H2O}}}</code>
---	--

If one would omit the outer pair of braces (`\ce{\underset . . .}`), one would get 100 errors.

Further Examples

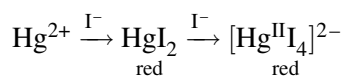
```
\ce{Zn^2+
<=>[\ce{+ 2OH-}][\ce{+ 2H+}]
{\underset{\text{amphoterer Hydroxid}}{\ce{Zn(OH)2 v}}} %group!
<=>C[+2OH-][+ 2H+]}
{\underset{\text{Hydroxozikat}}{\ce{[Zn(OH)4]^2-}}}% group!
}
```



$$K = \frac{[\text{Hg}^{2+}][\text{Hg}]}{[\text{Hg}_2^{2+}]}$$

$$K = \frac{[\text{Hg}^{2+}][\text{Hg}]}{[\text{Hg}_2^{2+}]}$$

```
\ce{Hg^2+ ->[\ce{I-}]
{\underset{\mathrm{red}}{\ce{HgI2}}}}
->C[I-]
{\underset{\mathrm{red}}{\ce{[Hg^II I4]^2-}}}}
```

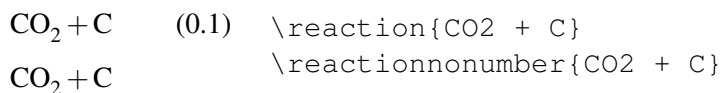


Tips and Tricks

When you often open an equation environment and insert a formula there, you may want to create your own command. You could (in your preamble, preferably) define the following two commands:

```
\newcommand\reaction[1]{\begin{equation}\ce{#1}\end{equation}}
\newcommand\reactionnonumber[1]{%
{\begin{equation*}\ce{#1}\end{equation*}}}
```

and then use them as follows:



The advanced L^AT_EX user could replace the two definitions with

```

\makeatletter
\newcommand\reaction@[1]{\begin{equation}\ce{#1}\end{equation}}
\newcommand\reaction@nonumber[1]{%
  {\begin{equation*}\ce{#1}\end{equation*}}}
\newcommand\reaction{\@ifstar{\reaction@nonumber}{\reaction@}}
\makeatother

```

and then write

```

CO2 + C      (0.2)  \reaction{CO2 + C}
CO2 + C      \reaction*{CO2 + C}

```

for the same result as above.

Equation Environments

version=2

When using equation environments, you can use the `\cee` command. The advantage is, that `\cee` can take the `&` and `\` macros as input and passes them on to the surrounding environment.

```

RNO2  $\xrightleftharpoons{+e}$  RNO2-      \begin{align*}
\cee{RNO2 &=>C[+e] RNO2^{-.}} \\\
RNO2-  $\xrightleftharpoons{+e}$  RNO22-      RNO2^{-.} &=>C[+e] RNO2^{2-} \\
\end{align*}

```

Fine Tuning

In this section, several option switches will be explained. They will be explained in the form of

```
\mhchemoptions{option=abc}
```

All options can be used in the `\usepackage` command in your preamble, as well.

```
\usepackage[version=3,option=abc]{mhchem}
```

Font

As mentioned previously in this manual, `mhchem` uses the current text font if you use a command in text mode, and it uses the current math font when you use a command in math mode. If you want, however, you can set a font that will be used for all your formulae and equations.

Inside your document, you can use

```

\mhchemoptions{textfontcommand=\sffamily}
\mhchemoptions{mathfontcommand=\mathsf}

```

in order to get sans-serif fonts in text and math mode. There are two further options, that basically do the same, but only take the name of a single font command without the initial backslash.

```
\mhchemoptions{textfontname=sffamily}
\mhchemoptions{mathfontname=mathsf}
```

Only the latter options can be used with the `\usepackage` command when loading `mhchem` (as an optional argument in brackets), because the font commands are not properly defined in the preamble yet.

Furthermore, there are two shortcuts:

```
\mhchemoptions{font=sf}
```

sets the two fonts to sans-serif, as mentioned above,

```
\mhchemoptions{font=}
```

switches back to the default, which is

```
\mhchemoptions{textfontcommand=, mathfontcommand=\mathrm}
```

Arrows

By default, `mhchem` uses arrows composed of different font characters. This may lead to undesirable effects when displayed on a screen. Helmut Hänsel kindly provided a patch that used the `pgf` graphics package instead. `pgf` arrows are activated by

```
\mhchemoptions{arrows=pgf}
```

As explained, you can set this option in the `\usepackage` as well. If you don't, please do not forget to load the `tikz` package by hand. This package is a wrapper for (and included in) the `pgf` bundle.

The default setting is

```
\mhchemoptions{arrows=font}
```

Here is how it looks:

$A \xleftrightarrow{\text{description}} A'$	<code>\mhchemoptions{arrows=font}%</code>
	<code>\ce{\cmath{A} <->T[description] \cmath{A'}}</code>
$A \xleftrightarrow{\text{description}} A'$	<code>\mhchemoptions{arrows=pgf}%</code>
	<code>\ce{\cmath{A} <->T[description] \cmath{A'}}</code>

Major Changes

Differences between Versions 1 and 2

When you used version 1 of `mhchem` in a document, and you want to migrate to `mhchem` version 2, you might need to make some changes in your document, because of the slightly changed syntax.

In version 1, the `\ce` command always used the math font. With version 2, it adapts to its surrounding font (text font when used in a text environment, math font when used in a math environment).

H_2O , H_2O `\ce{H2O}`, `\ce{H2O}`

Second, not all $-$ characters are treated as negative charges any more. Inner $-$ characters are now set as bonds. `\ce{X-Y-}` was typeset as X^-Y^- , but is now set as $X-Y^-$. You can achieve the old result by typing `\ce{X^--Y-}`.

The version 1 documentation suggested, to use additional braces in order to set a math symbol. The current way of doing that is to use the `\cmath` command.

Differences between Versions 2 and 3

In version 2, the `\bond` command produced a single bond. This command is now renamed to `\sbond`. Be aware that there is a new `\bond` command. Most possibly, your old formulae that used the old `\bond` command will produce an error message now, but there can be unexpected output, though.

The rsphrase Package

Usage

The rsphrase package provides two commands: `\rsnumber` and `\rsphrase`.

The text for phrase R 1 is ‘Explosive when dry.’	The text for phrase <code>\rsnumber{R1}\</code> is <code>'\rsphrase{R1}'</code>
---	--

One can use the two commands with an empty argument. It is then assumed that the argument is equivalent to the one used previously.

The text for phrase R 1 is ‘Explosive when dry.’	The text for phrase <code>\rsnumber{R1}\</code> is <code>'\rsphrase{}'</code>
---	--

Some S Phrases require you to insert text. This is done through an optional parameter.

S 40: To clean the floor and all objects con- taminated by this material, use water.	<code>\rsnumber[water]{S40}:</code> <code>\rsphrase{}</code>
---	---

Some phrases only allow to choose between certain alternatives. In these cases, special ‘numbers’ (like S23.1) are available. Of course, the official ‘number’ (here ‘S 23’) is typeset.

S 23: Do not breathe gas.	<code>\rsnumber[gas]{S23}:</code> <code>\rsphrase{}</code>
S 23: Do not breathe gas.	<code>\rsnumber{S23.1}:</code> <code>\rsphrase{}</code>

The phrases are taken from http://europa.eu.int/comm/environment/dansub/pdfs/annex3_en.pdf and http://europa.eu.int/comm/environment/dansub/pdfs/annex4_en.pdf which in turn are linked from http://europa.eu.int/comm/environment/dansub/main67_548/index_en.htm.

Options

Adapted Texts

When you load the rsphrase package with the `adapted` option, the phrases will differ slightly from the official ones. In English and Danish, only in the phrase ‘show this container or label’ is changed into ‘show the container or label’. In German, however, some articles are removed or added to make the language more natural. Furthermore, one bad translation was corrected (the official translation of ‘danger of very serious irreversible effects’ was ‘serious danger of irreversible effect’).

Tips and Tricks

User-Defined Environments

In your document, you are likely to apply a certain format to your phrases. A good way to consistent layout is to define a command or environment. The following example shows how the appendix of all phrases was produced. Firstly, a list environment is defined:

```
\newenvironment{rslst}%  
{%  
  \begin{labeling}% environment from KOMA-script  
    {\rsnumber{R39/23/24/25}}% R39/23/24/25 is longest label  
  }{%  
    \end{labeling}%  
}%
```

Then, we define an `item` command

```
\newcommand{\rs}[2][\item[\rsnumber{#1}{#2}]] \rsphrase{}}
```

Finally, the phrases can be typeset with the following code

```
\begin{rslst}  
  \rs{R1}  
  \rs{R2}  
\end{rslst}
```

The result (with small additional changes to the spacing between items) can be seen in the appendix.

Appendix

List of Implemented R and S Phrases

In case you get different phrases with the option `adapted`, these are printed in *italic*.

English

The official phrases are given in American English. These phrases are typeset when the current Babel language is either set to `english`, `USenglish`, `american`, `UKenglish` or `british`.

R 1	Explosive when dry.
R 2	Risk of explosion by shock, friction, fire or other sources of ignition.
R 3	Extreme risk of explosion by shock, friction, fire or other sources of ignition.
R 4	Forms very sensitive explosive metallic compounds.
R 5	Heating may cause an explosion.
R 6	Explosive with or without contact with air.
R 7	May cause fire.
R 8	Contact with combustible material may cause fire.
R 9	Explosive when mixed with combustible material.
R 10	Flammable.
R 11	Highly flammable.
R 12	Extremely flammable.
R 14	Reacts violently with water.
R 15	Contact with water liberates extremely flammable gases.
R 16	Explosive when mixed with oxidizing substances.
R 17	Spontaneously flammable in air.
R 18	In use, may form flammable/explosive vapour-air mixture.
R 19	May form explosive peroxides.
R 20	Harmful by inhalation.
R 21	Harmful in contact with skin.
R 22	Harmful if swallowed.
R 23	Toxic by inhalation.
R 24	Toxic in contact with skin.

R 25	Toxic if swallowed.
R 26	Very toxic by inhalation.
R 27	Very toxic in contact with skin.
R 28	Very toxic if swallowed.
R 29	Contact with water liberates toxic gas.
R 30	Can become highly flammable in use.
R 31	Contact with acids liberates toxic gas.
R 32	Contact with acids liberates very toxic gas.
R 33	Danger of cumulative effects.
R 34	Causes burns.
R 35	Causes severe burns.
R 36	Irritating to eyes.
R 37	Irritating to respiratory system.
R 38	Irritating to skin.
R 39	Danger of very serious irreversible effects.
R 40	Limited evidence of a carcinogenic effect.
R 41	Risk of serious damage to eyes.
R 42	May cause sensitization by inhalation.
R 43	May cause sensitization by skin contact.
R 44	Risk of explosion if heated under confinement.
R 45	May cause cancer.
R 46	May cause heritable genetic damage.
R 48	Danger of serious damage to health by prolonged exposure.
R 49	May cause cancer by inhalation.
R 50	Very toxic to aquatic organisms.
R 51	Toxic to aquatic organisms.
R 52	Harmful to aquatic organisms.
R 53	May cause long-term adverse effects in the aquatic environment.
R 54	Toxic to flora.
R 55	Toxic to fauna.
R 56	Toxic to soil organisms.
R 57	Toxic to bees.
R 58	May cause long-term adverse effects in the environment.
R 59	Dangerous for the ozone layer.
R 60	May impair fertility.
R 61	May cause harm to the unborn child.
R 62	Possible risk of impaired fertility.

R 63	Possible risk of harm to the unborn child.
R 64	May cause harm to breastfed babies.
R 65	Harmful: may cause lung damage if swallowed.
R 66	Repeated exposure may cause skin dryness or cracking.
R 67	Vapours may cause drowsiness and dizziness.
R 68	Possible risk of irreversible effects.
R 14/15	Reacts violently with water, liberating extremely flammable gases.
R 15/29	Contact with water liberates toxic, extremely flammable gas.
R 20/21	Harmful by inhalation and in contact with skin.
R 20/22	Harmful by inhalation and if swallowed.
R 20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R 21/22	Harmful in contact with skin and if swallowed.
R 23/24	Toxic by inhalation and in contact with skin.
R 23/25	Toxic by inhalation and if swallowed.
R 23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R 24/25	Toxic in contact with skin and if swallowed.
R 26/27	Very toxic by inhalation and in contact with skin.
R 26/28	Very toxic by inhalation and if swallowed.
R 26/27/28	Very toxic by inhalation, in contact with skin and if swallowed.
R 27/28	Very toxic in contact with skin and if swallowed.
R 36/37	Irritating to eyes and respiratory system.
R 36/38	Irritating to eyes and skin.
R 36/37/38	Irritating to eyes, respiratory system and skin.
R 37/38	Irritating to respiratory system and skin.
R 39/23	Toxic: danger of very serious irreversible effects through inhalation.
R 39/24	Toxic: danger of very serious irreversible effects in contact with skin.
R 39/25	Toxic: danger of very serious irreversible effects if swallowed.
R 39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin.
R 39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed.
R 39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed.
R 39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R 39/26	Very toxic: danger of very serious irreversible effects through inhalation.
R 39/27	Very toxic: danger of very serious irreversible effects in contact with skin.
R 39/28	Very toxic: danger of very serious irreversible effects if swallowed.

R 39/26/27	Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin.
R 39/26/28	Very toxic: danger of very serious irreversible effects through inhalation and if swallowed.
R 39/27/28	Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed.
R 39/26/27/28	Very toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R 42/43	May cause sensitization by inhalation and skin contact.
R 48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R 48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
R 48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R 48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
R 48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
R 48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R 48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R 48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin.
R 48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed.
R 48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
R 48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
R 48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R 50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 68/20	Harmful: possible risk of irreversible effects through inhalation.
R 68/21	Harmful: possible risk of irreversible effects in contact with skin.
R 68/22	Harmful: possible risk of irreversible effects if swallowed.
R 68/20/21	Harmful: possible risk of irreversible effects through inhalation and in contact with skin.
R 68/20/22	Harmful: possible risk of irreversible effects through inhalation and if swallowed.
R 68/21/22	Harmful: possible risk of irreversible effects in contact with skin and if swallowed.
R 68/20/21/22	Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
S 1	Keep locked up.
S 2	Keep out of the reach of children.
S 3	Keep in a cool place.
S 4	Keep away from living quarters.
S 5	Keep contents under
S 6	Keep under
S 7	Keep container tightly closed.
S 8	Keep container dry.
S 9	Keep container in a well-ventilated place.
S 12	Do not keep the container sealed.
S 13	Keep away from food, drink and animal feedingstuffs.
S 14	Keep away from
S 15	Keep away from heat.
S 16	Keep away from sources of ignition - No smoking.
S 17	Keep away from combustible material.
S 18	Handle and open container with care.
S 20	When using do not eat or drink.
S 21	When using do not smoke.
S 22	Do not breathe dust.
S 23	Do not breathe
S 23.0	Do not breathe gas / fumes / vapour / spray.
S 23.1	Do not breathe gas.
S 23.2	Do not breathe fumes.
S 23.3	Do not breathe vapour.
S 23.4	Do not breathe spray.

S 24	Avoid contact with skin.
S 25	Avoid contact with eyes.
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 27	Take off immediately all contaminated clothing.
S 28	After contact with skin, wash immediately with plenty of . . .
S 29	Do not empty into drains.
S 30	Never add water to this product.
S 33	Take precautionary measures against static discharges.
S 35	This material and its container must be disposed of in a safe way.
S 36	Wear suitable protective clothing.
S 37	Wear suitable gloves.
S 38	In case of insufficient ventilation, wear suitable respiratory equipment.
S 39	Wear eye / face protection.
S 40	To clean the floor and all objects contaminated by this material, use . . .
S 41	In case of fire and / or explosion do not breathe fumes.
S 42	During fumigation / spraying wear suitable respiratory equipment.
S 43.0	In case of fire, use . . .
S 43.1	In case of fire, use . . . Never use water.
S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 46	If swallowed, seek medical advice immediately and show this container or label.
	<i>If swallowed, seek medical advice immediately and show the container or label.</i>
S 47	Keep at temperature not exceeding . . . °C.
S 48	Keep wet with . . .
S 49	Keep only in the original container.
S 50	Do not mix with . . .
S 51	Use only in well-ventilated areas.
S 52	Not recommended for interior use on large surface areas.
S 53	Avoid exposure – obtain special instructions before use.
S 56	Dispose of this material and its container to hazardous or special waste collection point.
S 57	Use appropriate container to avoid environmental contamination.
S 59	Refer to manufacturer / supplier for information on recovery / recycling.
S 60	This material and its container must be disposed of as hazardous waste.
S 61	Avoid release to the environment. Refer to special instructions / Safety data sheets.

S 62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. <i>If swallowed, do not induce vomiting: seek medical advice immediately and show the container or label.</i>
S 63	In case of accident by inhalation: remove casualty to fresh air and keep at rest.
S 64	If swallowed, rinse mouth with water (only if the person is conscious).
S 1/2	Keep locked up and out of the reach of children.
S 3/7	Keep container tightly closed in a cool place.
S 3/9/14	Keep in a cool, well-ventilated place away from
S 3/9/14/49	Keep only in the original container in a cool, well-ventilated place away from
S 3/9/49	Keep only in the original container in a cool, well-ventilated place.
S 3/14	Keep in a cool place away from
S 7/8	Keep container tightly closed and dry.
S 7/9	Keep container tightly closed and in a well-ventilated place.
S 7/47	Keep container tightly closed and at a temperature not exceeding ... °C.
S 20/21	When using do not eat, drink or smoke.
S 24/25	Avoid contact with skin and eyes.
S 27/28	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of
S 29/35	Do not empty into drains; dispose of this material and its container in a safe way.
S 29/56	Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
S 36/37	Wear suitable protective clothing and gloves.
S 36/37/39	Wear suitable protective clothing, gloves and eye / face protection.
S 36/39	Wear suitable protective clothing and eye / face protection.
S 37/39	Wear suitable gloves and eye / face protection.
S 47/49	Keep only in the original container at a temperature not exceeding ... °C.

Danish

Thanks to the extensive help of Rasmus Villemoes, the Danish phrases could be included. There were a couple typos in the official documents: We changed 'bebølse' to 'beboelse', 'omgående' to 'omgående' and 'producentesn' to 'producenten'.

R 1	Ekspløst i tør tilstand.
R 2	Ekspløst farlig ved stød, gnidning, ild eller andre antændelseskilder.
R 3	Meget ekspløst farlig ved stød, gnidning, ild eller andre antændelseskilder.

R 4	Danner meget følsomme eksplosive metalforbindelser.
R 5	Eksplosionsfarlig ved opvarmning.
R 6	Eksplosiv ved og uden kontakt med luft.
R 7	Kan forårsage brand.
R 8	Brandfarlig ved kontakt med brandbare stoffer.
R 9	Eksplosionsfarlig ved blanding med brandbare stoffer.
R 10	Brandfarlig.
R 11	Meget brandfarlig.
R 12	Yderst brandfarlig.
R 14	Reagerer voldsomt med vand.
R 15	Reagerer med vand under dannelse af yderst brandfarlige gasser.
R 16	Eksplosionsfarlig ved blanding med oxiderende stoffer.
R 17	Selvantændelig i luft.
R 18	Ved brug kan brandbare dampe / eksplosive damp-luftblandinger dannes.
R 19	Kan danne eksplosive peroxider.
R 20	Farlig ved indånding.
R 21	Farlig ved hudkontakt.
R 22	Farlig ved indtagelse.
R 23	Giftig ved indånding.
R 24	Giftig ved hudkontakt.
R 25	Giftig ved indtagelse.
R 26	Meget giftig ved indånding.
R 27	Meget giftig ved hudkontakt.
R 28	Meget giftig ved indtagelse.
R 29	Udvikler giftig gas ved kontakt med vand.
R 30	Kan blive meget brandfarlig under brug.
R 31	Udvikler giftig gas ved kontakt med syre.
R 32	Udvikler meget giftig gas ved kontakt med syre.
R 33	Kan ophobes i kroppen efter gentagen brug.
R 34	Ætsningsfare.
R 35	Alvorlig ætsningsfare.
R 36	Irriterer øjnene.
R 37	Irriterer åndedrætsorganerne.
R 38	Irriterer huden.
R 39	Fare for varig alvorlig skade på helbred.
R 40	Mulighed for kræftfremkaldende effekt.
R 41	Risiko for alvorlig øjenskade.

R 42	Kan give overfølsomhed ved indånding.
R 43	Kan give overfølsomhed ved kontakt med huden.
R 44	Eksplodingsfarlig ved opvarmning under indeslutning.
R 45	Kan fremkalde kræft.
R 46	Kan forårsage arvelige genetiske skader.
R 48	Alvorlig sundhedsfare ved længere tids påvirkning.
R 49	Kan fremkalde kræft ved indånding.
R 50	Meget giftig for organismer, der lever i vand.
R 51	Giftig for organismer, der lever i vand.
R 52	Skadelig for organismer, der lever i vand.
R 53	Kan forårsage uønskede langtidsvirkninger i vandmiljøet.
R 54	Giftig for planter.
R 55	Giftig for dyr.
R 56	Giftig for organismer i jordbunden.
R 57	Giftig for bier.
R 58	Kan forårsage uønskede langtidsvirkninger i miljøet.
R 59	Farlig for ozonlaget.
R 60	Kan skade forplantningsevnen.
R 61	Kan skade barnet under graviditeten.
R 62	Mulighed for skade på forplantningsevnen.
R 63	Mulighed for skade på barnet under graviditeten.
R 64	Kan skade børn i ammeperioden.
R 65	Farlig: kan give lungeskade ved indtagelse.
R 66	Gentagen udsættelse kan give tør eller revnet hud.
R 67	Dampe kan give sløvhed og svimmelhed.
R 68	Mulighed for varig skade på helbred.
R 14/15	Reagerer voldsomt med vand under dannelse af yderst brandfarlige gasser.
R 15/29	Reagerer med vand under dannelse af giftige og yderst brandfarlige gasser.
R 20/21	Farlig ved indånding og ved hudkontakt.
R 20/22	Farlig ved indånding og ved indtagelse.
R 20/21/22	Farlig ved indånding, ved hudkontakt og ved indtagelse.
R 21/22	Farlig ved hudkontakt og ved indtagelse.
R 23/24	Giftig ved indånding og ved hudkontakt.
R 23/25	Giftig ved indånding og ved indtagelse.
R 23/24/25	Giftig ved indånding, ved hudkontakt og ved indtagelse.
R 24/25	Giftig ved hudkontakt og ved indtagelse.
R 26/27	Meget giftig ved indånding og ved hudkontakt.

R 26/28	Meget giftig ved indånding og ved indtagelse.
R 26/27/28	Meget giftig ved indånding, ved hudkontakt og ved indtagelse.
R 27/28	Meget giftig ved hudkontakt og ved indtagelse.
R 36/37	Irriterer øjnene og åndedrætsorganerne.
R 36/38	Irriterer øjnene og huden.
R 36/37/38	Irriterer øjnene, åndedrætsorganerne og huden.
R 37/38	Irriterer åndedrætsorganerne og huden.
R 39/23	Giftig: fare for varig alvorlig skade på helbred ved indånding.
R 39/24	Giftig: fare for varig alvorlig skade på helbred ved hudkontakt.
R 39/25	Giftig: fare for varig alvorlig skade på helbred ved indtagelse.
R 39/23/24	Giftig: fare for varig alvorlig skade på helbred ved indånding og hudkontakt.
R 39/23/25	Giftig: fare for varig alvorlig skade på helbred ved indånding og indtagelse.
R 39/24/25	Giftig: fare for varig alvorlig skade på helbred ved hudkontakt og indtagelse.
R 39/23/24/25	Giftig: fare for varig alvorlig skade på helbred ved indånding, hudkontakt og indtagelse.
R 39/26	Meget giftig: fare for varig alvorlig skade på helbred ved indånding.
R 39/27	Meget giftig: fare for varig alvorlig skade på helbred ved hudkontakt.
R 39/28	Meget giftig: fare for varig alvorlig skade på helbred ved indtagelse.
R 39/26/27	Meget giftig: fare for varig alvorlig skade på helbred ved indånding og hudkontakt.
R 39/26/28	Meget giftig: fare for varig alvorlig skade på helbred ved indånding og indtagelse.
R 39/27/28	Meget giftig: fare for varig alvorlig skade på helbred ved hudkontakt og indtagelse.
R 39/26/27/28	Meget giftig: fare for varig alvorlig skade på helbred ved indånding, hudkontakt og indtagelse.
R 42/43	Kan give overfølsomhed ved indånding og ved kontakt med huden.
R 48/20	Farlig: alvorlig sundhedsfare ved længere tids påvirkning ved indånding.
R 48/21	Farlig: alvorlig sundhedsfare ved længere tids påvirkning ved hudkontakt.
R 48/22	Farlig: alvorlig sundhedsfare ved længere tids påvirkning ved indtagelse.
R 48/20/21	Farlig: alvorlig sundhedsfare ved længere tids påvirkning ved indånding og hudkontakt.
R 48/20/22	Farlig: alvorlig sundhedsfare ved længere tids påvirkning ved indånding og indtagelse.
R 48/21/22	Farlig: alvorlig sundhedsfare ved længere tids påvirkning ved hudkontakt og indtagelse.
R 48/20/21/22	Farlig: alvorlig sundhedsfare ved længere tids påvirkning ved indånding, hudkontakt og indtagelse.
R 48/23	Giftig: alvorlig sundhedsfare ved længere tids påvirkning ved indånding.

R 48/24	Giftig: alvorlig sundhedsfare ved længere tids påvirkning ved hudkontakt.
R 48/25	Giftig: alvorlig sundhedsfare ved længere tids påvirkning ved indtagelse.
R 48/23/24	Giftig: alvorlig sundhedsfare ved længere tids påvirkning ved indånding og hudkontakt.
R 48/23/25	Giftig: alvorlig sundhedsfare ved længere tids påvirkning ved indånding og indtagelse.
R 48/24/25	Giftig: alvorlig sundhedsfare ved længere tids påvirkning ved hudkontakt og indtagelse.
R 48/23/24/25	Giftig: alvorlig sundhedsfare ved længere tids påvirkning ved indånding, hudkontakt og indtagelse.
R 50/53	Meget giftig for organismer, der lever i vand; kan forårsage uønskede langtidsvirkninger i vandmiljøet.
R 51/53	Giftig for organismer, der lever i vand; kan forårsage uønskede langtidsvirkninger i vandmiljøet.
R 52/53	Skadelig for organismer, der lever i vand; kan forårsage uønskede langtidsvirkninger i vandmiljøet.
R 68/20	Farlig: mulighed for varig skade på helbred ved indånding.
R 68/21	Farlig: mulighed for varig skade på helbred ved hudkontakt.
R 68/22	Farlig: mulighed for varig skade på helbred ved indtagelse.
R 68/20/21	Farlig: mulighed for varig skade på helbred ved indånding og hudkontakt.
R 68/20/22	Farlig: mulighed for varig skade på helbred ved indånding og indtagelse.
R 68/21/22	Farlig: mulighed for varig skade på helbred ved hudkontakt og indtagelse.
R 68/20/21/22	Farlig: mulighed for varig skade på helbred ved indånding, hudkontakt og indtagelse.
S 1	Opbevares under lås.
S 2	Opbevares utilgængeligt for børn.
S 3	Opbevares køligt.
S 4	Må ikke opbevares i nærheden af beboelse.
S 5	Opbevares under
S 6	Opbevares under
S 7	Emballagen skal holdes tæt lukket.
S 8	Emballagen skal opbevares tørt.
S 9	Emballagen skal opbevares på et godt ventileret sted.
S 12	Emballagen må ikke lukkes tæt.
S 13	Må ikke opbevares sammen med fødevarer, drikkevarer og foderstoffer.
S 14	Opbevares adskilt fra
S 15	Må ikke udsættes for varme.
S 16	Holdes væk fra antændelseskilder – Rygning forbudt.

- S 17 Holdes væk fra brandbare stoffer.
- S 18 Emballagen skal behandles og åbnes med forsigtighed.
- S 20 Der må ikke spises eller drikkes under brugen.
- S 21 Der må ikke ryges under brugen.
- S 22 Undgå indånding af støv.
- S 23 Undgå indånding af
- S 23.0 Undgå indånding af gas / røg / dampe / aerosol-tåger.
- S 23.1 Undgå indånding af gas.
- S 23.2 Undgå indånding af røg.
- S 23.3 Undgå indånding af dampe.
- S 23.4 Undgå indånding af aerosol-tåger.
- S 24 Undgå kontakt med huden.
- S 25 Undgå kontakt med øjnene.
- S 26 Kommer stoffet i øjnene, skylles straks grundigt med vand og læge kontaktes.
- S 27 Tilsmudset tøj tages straks af.
- S 28 Kommer stof på huden vaskes straks med store mængder
- S 29 Må ikke tømmes i kloakafløb.
- S 30 Hæld aldrig vand på eller i produktet.
- S 33 Træf foranstaltninger mod statisk elektricitet.
- S 35 Materialet og dets beholder skal bortskaffes på en sikker måde.
- S 36 Brug særligt arbejdstøj.
- S 37 Brug egnede beskyttelseshandsker under arbejdet.
- S 38 Brug egnet åndedrætsværn, hvis effektiv ventilation ikke er mulig.
- S 39 Brug beskyttelsesbriller / ansigtsskærm under arbejdet.
- S 40 Gulvet og tilsmudsede genstande renses med
- S 41 Undgå at indånde røgen ved brand eller eksplosion.
- S 42 Brug egnet åndedrætsværn ved rygning / sprøjtning.
- S 43.0 Brug ... ved brandslukning.
- S 43.1 Brug ... ved brandslukning. Brug ikke vand.
- S 45 Ved ulykkestilfælde eller ved ildebefindende er omgående lægebehandling nødvendig; vis etiketten, hvis det er muligt.
- S 46 Ved indtagelse, kontakt omgående læge og vis denne beholder eller etiket.
Ved indtagelse, kontakt omgående læge og vis beholderen eller etiketten.
- S 47 Må ikke opbevares ved temperaturer på over ... °C.
- S 48 Holdes befugtet med
- S 49 Må kun opbevares i den originale emballage.
- S 50 Må ikke blandes med

- S 51 Må kun bruges på steder med god ventilation.
- S 52 Bør ikke anvendes til større flader i beboelses- eller opholdsrum.
- S 53 Undgå enhver kontakt – indhent særlige anvisninger før brug.
- S 56 Aflever dette materiale og dets beholder til et indsamlingssted for farligt affald og problemaffald.
- S 57 Skal indesluttet forsvarligt for at undgå miljøforurening.
- S 59 Indhent oplysninger om genvinding / genanvendelse hos producenten / leverandøren.
- S 60 Dette materiale og dets beholder skal bortskaffes som farligt affald.
- S 61 Undgå udledning til miljøet. Se særlig vejledning / leverandørbrugsanvisning.
- S 62 Ved indtagelse, undgå at fremprovokere opkastning: kontakt omgående læge og vis denne beholder eller etiket.
- Ved indtagelse, undgå at fremprovokere opkastning: kontakt omgående læge og vis beholderen eller etiketten.*
- S 63 Ved ulykkestilfælde ved indånding bringes tilskadekomne ud i frisk luft og holdes i ro.
- S 64 Ved indtagelse, skyl munden med vand (kun hvis personen er ved bevidsthed).
- S 1/2 Opbevares under lås og utilgængeligt for børn.
- S 3/7 Emballagen opbevares tæt lukket på et køligt sted.
- S 3/9/14 Opbevares køligt, godt ventileret og adskilt fra
- S 3/9/14/49 Må kun opbevares i originalemballagen på et køligt, godt ventileret sted og adskilt fra
- S 3/9/49 Må kun opbevares i originalemballagen på et køligt, godt ventileret sted.
- S 3/14 Opbevares køligt og adskilt fra
- S 7/8 Emballagen skal holdes tæt lukket og opbevares tørt.
- S 7/9 Emballagen skal holdes tæt lukket og opbevares på et godt ventileret sted.
- S 7/47 Emballagen skal holdes tæt lukket og opbevares ved temperaturer på ikke over ... °C.
- S 20/21 Der må ikke spises, drikkes eller ryges under brugen.
- S 24/25 Undgå kontakt med huden og øjnene.
- S 27/28 Kommer stof på huden, tages tilsmudset tøj straks af og der vaskes med store mængder
- S 29/35 Må ikke tømmes i kloakafløb; materialet og dets beholder skal bortskaffes på en sikker måde.
- S 29/56 Må ikke tømmes i kloakafløb, aflever dette materiale og dets beholder til et indsamlingssted for farligt affald og problemaffald.
- S 36/37 Brug særligt arbejdstøj og egnede beskyttelseshandsker.
- S 36/37/39 Brug særligt arbejdstøj, egnede beskyttelseshandsker og -briller / ansigtsskærm.
- S 36/39 Brug særligt arbejdstøj og egnede beskyttelsesbriller / ansigtsskærm.

- S 37/39 Brug egnede beskyttelseshandsker og -briller / ansigtsskærm under arbejdet.
 S 47/49 Må kun opbevares i originalemballagen ved en temperatur på ikke over ... °C.

French

Dominique Richard helped with the French phrases. Many thanks to him!

- R 1 Explosive when dry.
- R 2 Risk of explosion by shock, friction, fire or other sources of ignition.
- R 3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- R 4 Forms very sensitive explosive metallic compounds.
- R 5 Heating may cause an explosion.
- R 6 Explosive with or without contact with air.
- R 7 May cause fire.
- R 8 Contact with combustible material may cause fire.
- R 9 Explosive when mixed with combustible material.
- R 10 Flammable.
- R 11 Highly flammable.
- R 12 Extremely flammable.
- R 14 Reacts violently with water.
- R 15 Contact with water liberates extremely flammable gases.
- R 16 Explosive when mixed with oxidizing substances.
- R 17 Spontaneously flammable in air.
- R 18 In use, may form flammable/explosive vapour-air mixture.
- R 19 May form explosive peroxides.
- R 20 Harmful by inhalation.
- R 21 Harmful in contact with skin.
- R 22 Harmful if swallowed.
- R 23 Toxic by inhalation.
- R 24 Toxic in contact with skin.
- R 25 Toxic if swallowed.
- R 26 Very toxic by inhalation.
- R 27 Very toxic in contact with skin.
- R 28 Very toxic if swallowed.
- R 29 Contact with water liberates toxic gas.
- R 30 Can become highly flammable in use.
- R 31 Contact with acids liberates toxic gas.
- R 32 Contact with acids liberates very toxic gas.
- R 33 Danger of cumulative effects.
- R 34 Causes burns.
- R 35 Causes severe burns.
- R 36 Irritating to eyes.
- R 37 Irritating to respiratory system.
- R 38 Irritating to skin.

R 39	Danger of very serious irreversible effects.
R 40	Limited evidence of a carcinogenic effect.
R 41	Risk of serious damage to eyes.
R 42	May cause sensitization by inhalation.
R 43	May cause sensitization by skin contact.
R 44	Risk of explosion if heated under confinement.
R 45	May cause cancer.
R 46	May cause heritable genetic damage.
R 48	Danger of serious damage to health by prolonged exposure.
R 49	May cause cancer by inhalation.
R 50	Very toxic to aquatic organisms.
R 51	Toxic to aquatic organisms.
R 52	Harmful to aquatic organisms.
R 53	May cause long-term adverse effects in the aquatic environment.
R 54	Toxic to flora.
R 55	Toxic to fauna.
R 56	Toxic to soil organisms.
R 57	Toxic to bees.
R 58	May cause long-term adverse effects in the environment.
R 59	Dangerous for the ozone layer.
R 60	May impair fertility.
R 61	May cause harm to the unborn child.
R 62	Possible risk of impaired fertility.
R 63	Possible risk of harm to the unborn child.
R 64	May cause harm to breastfed babies.
R 65	Harmful: may cause lung damage if swallowed.
R 66	Repeated exposure may cause skin dryness or cracking.
R 67	Vapours may cause drowsiness and dizziness.
R 68	Possible risk of irreversible effects.
R 14/15	Reacts violently with water, liberating extremely flammable gases.
R 15/29	Contact with water liberates toxic, extremely flammable gas.
R 20/21	Harmful by inhalation and in contact with skin.
R 20/22	Harmful by inhalation and if swallowed.
R 20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R 21/22	Harmful in contact with skin and if swallowed.
R 23/24	Toxic by inhalation and in contact with skin.
R 23/25	Toxic by inhalation and if swallowed.
R 23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R 24/25	Toxic in contact with skin and if swallowed.
R 26/27	Very toxic by inhalation and in contact with skin.
R 26/28	Very toxic by inhalation and if swallowed.
R 26/27/28	Very toxic by inhalation, in contact with skin and if swallowed.
R 27/28	Very toxic in contact with skin and if swallowed.
R 36/37	Irritating to eyes and respiratory system.

R 36/38	Irritating to eyes and skin.
R 36/37/38	Irritating to eyes, respiratory system and skin.
R 37/38	Irritating to respiratory system and skin.
R 39/23	Toxic: danger of very serious irreversible effects through inhalation.
R 39/24	Toxic: danger of very serious irreversible effects in contact with skin.
R 39/25	Toxic: danger of very serious irreversible effects if swallowed.
R 39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin.
R 39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed.
R 39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed.
R 39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R 39/26	Very toxic: danger of very serious irreversible effects through inhalation.
R 39/27	Very toxic: danger of very serious irreversible effects in contact with skin.
R 39/28	Very toxic: danger of very serious irreversible effects if swallowed.
R 39/26/27	Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin.
R 39/26/28	Very toxic: danger of very serious irreversible effects through inhalation and if swallowed.
R 39/27/28	Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed.
R 39/26/27/28	Very toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R 42/43	May cause sensitization by inhalation and skin contact.
R 48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R 48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
R 48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R 48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
R 48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
R 48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R 48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R 48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin.
R 48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed.

R 48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
R 48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
R 48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R 50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 68/20	Harmful: possible risk of irreversible effects through inhalation.
R 68/21	Harmful: possible risk of irreversible effects in contact with skin.
R 68/22	Harmful: possible risk of irreversible effects if swallowed.
R 68/20/21	Harmful: possible risk of irreversible effects through inhalation and in contact with skin.
R 68/20/22	Harmful: possible risk of irreversible effects through inhalation and if swallowed.
R 68/21/22	Harmful: possible risk of irreversible effects in contact with skin and if swallowed.
R 68/20/21/22	Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
S 1	Keep locked up.
S 2	Keep out of the reach of children.
S 3	Keep in a cool place.
S 4	Keep away from living quarters.
S 5	Keep contents under
S 6	Keep under
S 7	Keep container tightly closed.
S 8	Keep container dry.
S 9	Keep container in a well-ventilated place.
S 12	Do not keep the container sealed.
S 13	Keep away from food, drink and animal feedingstuffs.
S 14	Keep away from
S 15	Keep away from heat.
S 16	Keep away from sources of ignition - No smoking.
S 17	Keep away from combustible material.
S 18	Handle and open container with care.
S 20	When using do not eat or drink.
S 21	When using do not smoke.
S 22	Do not breathe dust.

S 23	Do not breathe
S 23.0	Do not breathe gas / fumes / vapour / spray.
S 23.1	Do not breathe gas.
S 23.2	Do not breathe fumes.
S 23.3	Do not breathe vapour.
S 23.4	Do not breathe spray.
S 24	Avoid contact with skin.
S 25	Avoid contact with eyes.
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 27	Take off immediately all contaminated clothing.
S 28	After contact with skin, wash immediately with plenty of
S 29	Do not empty into drains.
S 30	Never add water to this product.
S 33	Take precautionary measures against static discharges.
S 35	This material and its container must be disposed of in a safe way.
S 36	Wear suitable protective clothing.
S 37	Wear suitable gloves.
S 38	In case of insufficient ventilation, wear suitable respiratory equipment.
S 39	Wear eye / face protection.
S 40	To clean the floor and all objects contaminated by this material, use
S 41	In case of fire and / or explosion do not breathe fumes.
S 42	During fumigation / spraying wear suitable respiratory equipment.
S 43.0	In case of fire, use
S 43.1	In case of fire, use Never use water.
S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 46	If swallowed, seek medical advice immediately and show this container or label.
S 47	Keep at temperature not exceeding . . . °C.
S 48	Keep wet with
S 49	Keep only in the original container.
S 50	Do not mix with
S 51	Use only in well-ventilated areas.
S 52	Not recommended for interior use on large surface areas.
S 53	Avoid exposure – obtain special instructions before use.
S 56	Dispose of this material and its container to hazardous or special waste collection point.
S 57	Use appropriate container to avoid environmental contamination.
S 59	Refer to manufacturer / supplier for information on recovery / recycling.
S 60	This material and its container must be disposed of as hazardous waste.
S 61	Avoid release to the environment. Refer to special instructions / Safety data sheets.
S 62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

S 63	In case of accident by inhalation: remove casualty to fresh air and keep at rest.
S 64	If swallowed, rinse mouth with water (only if the person is conscious).
S 1/2	Keep locked up and out of the reach of children.
S 3/7	Keep container tightly closed in a cool place.
S 3/9/14	Keep in a cool, well-ventilated place away from . . .
S 3/9/14/49	Keep only in the original container in a cool, well-ventilated place away from
S 3/9/49	Keep only in the original container in a cool, well-ventilated place.
S 3/14	Keep in a cool place away from . . .
S 7/8	Keep container tightly closed and dry.
S 7/9	Keep container tightly closed and in a well-ventilated place.
S 7/47	Keep container tightly closed and at a temperature not exceeding ... °C.
S 20/21	When using do not eat, drink or smoke.
S 24/25	Avoid contact with skin and eyes.
S 27/28	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of . . .
S 29/35	Do not empty into drains; dispose of this material and its container in a safe way.
S 29/56	Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
S 36/37	Wear suitable protective clothing and gloves.
S 36/37/39	Wear suitable protective clothing, gloves and eye / face protection.
S 36/39	Wear suitable protective clothing and eye / face protection.
S 37/39	Wear suitable gloves and eye / face protection.
S 47/49	Keep only in the original container at a temperature not exceeding ... °C.

German

I adapted the German R and S Phrases to the current ('new') spelling. Therefore, when writing a text in `german` and using `rsphrase`, you will get a warning ('Your current language setting is `german`, `rsphrase` only knows the current German spelling (`ngerman`) which therefore was used.').

R 1	In trockenem Zustand explosionsgefährlich.
R 2	Durch Schlag, Reibung, Feuer oder andere Zündquellen explosionsgefährlich.
R 3	Durch Schlag, Reibung, Feuer oder andere Zündquellen besonders explosionsgefährlich.
R 4	Bildet hochempfindliche explosionsgefährliche Metallverbindungen.
R 5	Beim Erwärmen explosionsfähig.
R 6	Mit und ohne Luft explosionsfähig.
R 7	Kann Brand verursachen.
R 8	Feuergefahr bei Berührung mit brennbaren Stoffen.
R 9	Explosionsgefahr bei Mischung mit brennbaren Stoffen.

R 10	Entzündlich.
R 11	Leicht entzündlich.
R 12	Hoch entzündlich.
R 14	Reagiert heftig mit Wasser.
R 15	Reagiert mit Wasser unter Bildung hoch entzündlicher Gase.
R 16	Explosionsgefährlich in Mischung mit Brand fördernden Stoffen.
R 17	Selbstentzündlich an der Luft.
R 18	Bei Gebrauch Bildung explosionsfähiger / leicht entzündlicher Dampf/Luft-Gemische möglich.
R 19	Kann explosionsfähige Peroxide bilden.
R 20	Gesundheitsschädlich beim Einatmen.
R 21	Gesundheitsschädlich bei Berührung mit der Haut.
R 22	Gesundheitsschädlich beim Verschlucken.
R 23	Giftig beim Einatmen.
R 24	Giftig bei Berührung mit der Haut.
R 25	Giftig beim Verschlucken.
R 26	Sehr giftig beim Einatmen.
R 27	Sehr giftig bei Berührung mit der Haut.
R 28	Sehr giftig beim Verschlucken.
R 29	Entwickelt bei Berührung mit Wasser giftige Gase.
R 30	Kann bei Gebrauch leicht entzündlich werden.
R 31	Entwickelt bei Berührung mit Säure giftige Gase.
R 32	Entwickelt bei Berührung mit Säure sehr giftige Gase.
R 33	Gefahr kumulativer Wirkungen.
R 34	Verursacht Verätzungen.
R 35	Verursacht schwere Verätzungen.
R 36	Reizt die Augen.
R 37	Reizt die Atmungsorgane.
R 38	Reizt die Haut.
R 39	Ernste Gefahr irreversiblen Schadens. <i>Gefahr sehr ernster irreversibler Schäden.</i> ¹
R 40	Verdacht auf Krebs erzeugende Wirkung.
R 41	Gefahr ernster Augenschäden.
R 42	Sensibilisierung durch Einatmen möglich.
R 43	Sensibilisierung durch Hautkontakt möglich.
R 44	Explosionsgefahr bei Erhitzen unter Einschluss.

¹ Geändert, da schlechte Übersetzung; siehe englisches Original.

R 45	Kann Krebs erzeugen.
R 46	Kann vererbare Schäden verursachen.
R 48	Gefahr ernster Gesundheitsschäden bei längerer Exposition.
R 49	Kann Krebs erzeugen beim Einatmen.
R 50	Sehr giftig für Wasserorganismen.
R 51	Giftig für Wasserorganismen.
R 52	Schädlich für Wasserorganismen.
R 53	Kann in Gewässern längerfristig schädliche Wirkungen haben.
R 54	Giftig für Pflanzen.
R 55	Giftig für Tiere.
R 56	Giftig für Bodenorganismen.
R 57	Giftig für Bienen.
R 58	Kann längerfristig schädliche Wirkungen auf die Umwelt haben.
R 59	Gefährlich für die Ozonschicht.
R 60	Kann die Fortpflanzungsfähigkeit beeinträchtigen.
R 61	Kann das Kind im Mutterleib schädigen.
R 62	Kann möglicherweise die Fortpflanzungsfähigkeit beeinträchtigen.
R 63	Kann das Kind im Mutterleib möglicherweise schädigen.
R 64	Kann Säuglinge über die Muttermilch schädigen.
R 65	Gesundheitsschädlich: kann beim Verschlucken Lungenschäden verursachen.
R 66	Wiederholter Kontakt kann zu spröder oder rissiger Haut führen.
R 67	Dämpfe können Schläfrigkeit und Benommenheit verursachen.
R 68	Irreversibler Schaden möglich.
R 14/15	Reagiert heftig mit Wasser unter Bildung hoch entzündlicher Gase.
R 15/29	Reagiert mit Wasser unter Bildung giftiger und hoch entzündlicher Gase.
R 20/21	Gesundheitsschädlich beim Einatmen und bei Berührung mit der Haut.
R 20/22	Gesundheitsschädlich beim Einatmen und Verschlucken.
R 20/21/22	Gesundheitsschädlich beim Einatmen, Verschlucken und Berührung mit der Haut. <i>Gesundheitsschädlich beim Einatmen, Verschlucken und bei Berührung mit der Haut.</i>
R 21/22	Gesundheitsschädlich bei Berührung mit der Haut und beim Verschlucken.
R 23/24	Giftig beim Einatmen und bei Berührung mit der Haut.
R 23/25	Giftig beim Einatmen und Verschlucken.
R 23/24/25	Giftig beim Einatmen, Verschlucken und Berührung mit der Haut. <i>Giftig beim Einatmen, Verschlucken und bei Berührung mit der Haut.</i>
R 24/25	Giftig bei Berührung mit der Haut und beim Verschlucken.
R 26/27	Sehr giftig beim Einatmen und bei Berührung mit der Haut.

R 26/28	Sehr giftig beim Einatmen und Verschlucken.
R 26/27/28	Sehr giftig beim Einatmen, Verschlucken und Berührung mit der Haut. <i>Sehr giftig beim Einatmen, Verschlucken und bei Berührung mit der Haut.</i>
R 27/28	Sehr giftig bei Berührung mit der Haut und beim Verschlucken.
R 36/37	Reizt die Augen und die Atmungsorgane.
R 36/38	Reizt die Augen und die Haut.
R 36/37/38	Reizt die Augen, Atmungsorgane und die Haut. <i>Reizt Augen, Atmungsorgane und Haut.</i>
R 37/38	Reizt die Atmungsorgane und die Haut.
R 39/23	Giftig: ernste Gefahr irreversiblen Schadens durch Einatmen. <i>Giftig: Gefahr sehr ernster irreversibler Schäden durch Einatmen.</i>
R 39/24	Giftig: ernste Gefahr irreversiblen Schadens bei Berührung mit der Haut. <i>Giftig: Gefahr sehr ernster irreversibler Schäden bei Berührung mit der Haut.</i>
R 39/25	Giftig: ernste Gefahr irreversiblen Schadens durch Verschlucken. <i>Giftig: Gefahr sehr ernster irreversibler Schäden durch Verschlucken.</i>
R 39/23/24	Giftig: ernste Gefahr irreversiblen Schadens durch Einatmen und bei Berührung mit der Haut. <i>Giftig: Gefahr sehr ernster irreversibler Schäden durch Einatmen und bei Berührung mit der Haut.</i>
R 39/23/25	Giftig: ernste Gefahr irreversiblen Schadens durch Einatmen und durch Verschlucken. <i>Giftig: Gefahr sehr ernster irreversibler Schäden durch Einatmen und durch Verschlucken.</i>
R 39/24/25	Giftig: ernste Gefahr irreversiblen Schadens bei Berührung mit der Haut und durch Verschlucken. <i>Giftig: Gefahr sehr ernster irreversibler Schäden bei Berührung mit der Haut und durch Verschlucken.</i>
R 39/23/24/25	Giftig: ernste Gefahr irreversiblen Schadens durch Einatmen, Berührung mit der Haut und durch Verschlucken. <i>Giftig: Gefahr sehr ernster irreversibler Schäden durch Einatmen, Berührung mit der Haut und durch Verschlucken.</i>
R 39/26	Sehr giftig: ernste Gefahr irreversiblen Schadens durch Einatmen. <i>Sehr giftig: Gefahr sehr ernster irreversibler Schäden durch Einatmen.</i>
R 39/27	Sehr giftig: ernste Gefahr irreversiblen Schadens bei Berührung mit der Haut. <i>Sehr giftig: Gefahr sehr ernster irreversibler Schäden bei Berührung mit der Haut.</i>
R 39/28	Sehr giftig: ernste Gefahr irreversiblen Schadens durch Verschlucken. <i>Sehr giftig: Gefahr sehr ernster irreversibler Schäden durch Verschlucken.</i>
R 39/26/27	Sehr giftig: ernste Gefahr irreversiblen Schadens durch Einatmen und bei Berührung mit der Haut.

	<i>Sehr giftig: Gefahr sehr ernster irreversibler Schäden durch Einatmen und bei Berührung mit der Haut.</i>
R 39/26/28	Sehr giftig: ernste Gefahr irreversiblen Schadens durch Einatmen und durch Verschlucken. <i>Sehr giftig: Gefahr sehr ernster irreversibler Schäden durch Einatmen und durch Verschlucken.</i>
R 39/27/28	Sehr giftig: ernste Gefahr irreversiblen Schadens bei Berührung mit der Haut und durch Verschlucken. <i>Sehr giftig: Gefahr sehr ernster irreversibler Schäden bei Berührung mit der Haut und durch Verschlucken.</i>
R 39/26/27/28	Sehr giftig: ernste Gefahr irreversiblen Schadens durch Einatmen, Berührung mit der Haut und durch Verschlucken. <i>Sehr giftig: Gefahr sehr ernster irreversibler Schäden durch Einatmen, Berührung mit der Haut und durch Verschlucken.</i>
R 42/43	Sensibilisierung durch Einatmen und Hautkontakt möglich.
R 48/20	Gesundheitsschädlich: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Einatmen.
R 48/21	Gesundheitsschädlich: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Berührung mit der Haut.
R 48/22	Gesundheitsschädlich: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Verschlucken.
R 48/20/21	Gesundheitsschädlich: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Einatmen und durch Berührung mit der Haut.
R 48/20/22	Gesundheitsschädlich: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Einatmen und durch Verschlucken.
R 48/21/22	Gesundheitsschädlich: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Berührung mit der Haut und durch Verschlucken.
R 48/20/21/22	Gesundheitsschädlich: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Einatmen, Berührung mit der Haut und durch Verschlucken.
R 48/23	Giftig: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Einatmen.
R 48/24	Giftig: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Berührung mit der Haut.
R 48/25	Giftig: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Verschlucken.
R 48/23/24	Giftig: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Einatmen und durch Berührung mit der Haut.
R 48/23/25	Giftig: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Einatmen und durch Verschlucken.
R 48/24/25	Giftig: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Berührung mit der Haut und durch Verschlucken.

- R 48/23/24/25 Giftig: Gefahr ernster Gesundheitsschäden bei längerer Exposition durch Einatmen, Berührung mit der Haut und durch Verschlucken.
- R 50/53 Sehr giftig für Wasserorganismen, kann in Gewässern längerfristig schädliche Wirkungen haben.
- R 51/53 Giftig für Wasserorganismen, kann in Gewässern längerfristig schädliche Wirkungen haben.
- R 52/53 Schädlich für Wasserorganismen, kann in Gewässern längerfristig schädliche Wirkungen haben.
- R 68/20 Gesundheitsschädlich: Möglichkeit irreversiblen Schadens durch Einatmen.
- R 68/21 Gesundheitsschädlich: Möglichkeit irreversiblen Schadens bei Berührung mit der Haut.
- R 68/22 Gesundheitsschädlich: Möglichkeit irreversiblen Schadens durch Verschlucken.
- R 68/20/21 Gesundheitsschädlich: Möglichkeit irreversiblen Schadens durch Einatmen und bei Berührung mit der Haut.
- R 68/20/22 Gesundheitsschädlich: Möglichkeit irreversiblen Schadens durch Einatmen und durch Verschlucken.
- R 68/21/22 Gesundheitsschädlich: Möglichkeit irreversiblen Schadens bei Berührung mit der Haut und durch Verschlucken.
- R 68/20/21/22 Gesundheitsschädlich: Möglichkeit irreversiblen Schadens durch Einatmen, Berührung mit der Haut und durch Verschlucken.
- S 1 Unter Verschluss aufbewahren.
- S 2 Darf nicht in die Hände von Kindern gelangen.
- S 3 Kühl aufbewahren.
- S 4 Von Wohnplätzen fern halten.
- S 5 Unter ... aufbewahren.
- S 6 Unter ... aufbewahren.
- S 7 Behälter dicht geschlossen halten.
- S 8 Behälter trocken halten.
- S 9 Behälter an einem gut gelüfteten Ort aufbewahren.
- S 12 Behälter nicht gasdicht verschließen.
- S 13 Von Nahrungsmitteln, Getränken und Futtermitteln fern halten.
- S 14 Von ... fern halten.
- S 15 Vor Hitze schützen.
- S 16 Von Zündquellen fern halten – Nicht rauchen.
- S 17 Von brennbaren Stoffen fern halten.
- S 18 Behälter mit Vorsicht öffnen und handhaben.
- S 20 Bei der Arbeit nicht essen und trinken.
- S 21 Bei der Arbeit nicht rauchen.
- S 22 Staub nicht einatmen.

- S 23 ... nicht einatmen.
- S 23.0 Gas / Rauch / Dampf / Aerosol nicht einatmen.
- S 23.1 Gas nicht einatmen.
- S 23.2 Rauch nicht einatmen.
- S 23.3 Dampf nicht einatmen.
- S 23.4 Aerosol nicht einatmen.
- S 24 Berührung mit der Haut vermeiden.
- S 25 Berührung mit den Augen vermeiden.
- S 26 Bei Berührung mit den Augen sofort gründlich mit Wasser abspülen und Arzt konsultieren.
- S 27 Beschmutzte, getränkte Kleidung sofort ausziehen.
- S 28 Bei Berührung mit der Haut sofort abwaschen mit viel ...
- S 29 Nicht in die Kanalisation gelangen lassen.
- S 30 Niemals Wasser hinzugießen.
- S 33 Maßnahmen gegen elektrostatische Aufladungen treffen.
- S 35 Abfälle und Behälter müssen in gesicherter Weise beseitigt werden.
- S 36 Bei der Arbeit geeignete Schutzkleidung tragen.
- S 37 Geeignete Schutzhandschuhe tragen.
- S 38 Bei unzureichender Belüftung Atemschutzgerät anlegen.
- S 39 Schutzbrille / Gesichtsschutz tragen.
- S 40 Fußboden und verunreinigte Gegenstände mit ... reinigen.
- S 41 Explosions- und Brandgase nicht einatmen.
- S 42 Beim Räuchern / Versprühen geeignetes Atemschutzgerät anlegen.
- S 43.0 Zum Löschen ... verwenden.
- S 43.1 Zum Löschen ... verwenden. Kein Wasser verwenden.
- S 45 Bei Unfall oder Unwohlsein sofort Arzt zuziehen (wenn möglich, dieses Etikett vorzeigen).
- Bei Unfall oder Unwohlsein sofort Arzt zuziehen (wenn möglich, Etikett vorzeigen).*
- S 46 Bei Verschlucken sofort ärztlichen Rat einholen und Verpackung oder Etikett vorzeigen.
- S 47 Nicht bei Temperaturen über ... °C aufbewahren.
- S 48 Feucht halten mit ...
- S 49 Nur im Originalbehälter aufbewahren.
- S 50 Nicht mischen mit ...
- S 51 Nur in gut gelüfteten Bereichen verwenden.
- S 52 Nicht großflächig für Wohn- und Aufenthaltsräume zu verwenden.
- S 53 Exposition vermeiden – vor Gebrauch besondere Anweisungen einholen.
- S 56 Dieses Produkt und seinen Behälter der Problemabfallentsorgung zuführen.

S 57	Zur Vermeidung einer Kontamination der Umwelt geeigneten Behälter verwenden.
S 59	Informationen zur Wiederverwendung / Wiederverwertung beim Hersteller / Lieferanten erfragen.
S 60	Dieser Stoff und sein Behälter sind als gefährlicher Abfall zu entsorgen.
S 61	Freisetzung in die Umwelt vermeiden. Besondere Anweisungen einholen / Sicherheitsdatenblatt zu Rate ziehen.
S 62	Bei Verschlucken kein Erbrechen herbeiführen. Sofort ärztlichen Rat einholen und Verpackung oder dieses Etikett vorzeigen. <i>Bei Verschlucken kein Erbrechen herbeiführen. Sofort ärztlichen Rat einholen und Verpackung oder Etikett vorzeigen.</i>
S 63	Bei Unfall durch Einatmen: Verunfallten an die frische Luft bringen und ruhigstellen.
S 64	Bei Verschlucken Mund mit Wasser ausspülen (nur wenn Verunfallter bei Bewusstsein ist).
S 1/2	Unter Verschluss und für Kinder unzugänglich aufbewahren.
S 3/7	Behälter dicht geschlossen halten und an einem kühlen Ort aufbewahren.
S 3/9/14	An einem kühlen, gut gelüfteten Ort, entfernt von ... aufbewahren.
S 3/9/14/49	Nur im Originalbehälter an einem kühlen, gut gelüfteten Ort, entfernt von ... aufbewahren.
S 3/9/49	Nur im Originalbehälter an einem kühlen, gut gelüfteten Ort aufbewahren.
S 3/14	An einem kühlen, von ... entfernten Ort aufbewahren.
S 7/8	Behälter trocken und dicht geschlossen halten.
S 7/9	Behälter dicht geschlossen an einem gut gelüfteten Ort aufbewahren.
S 7/47	Behälter dicht geschlossen und nicht bei Temperaturen über ... °C aufbewahren.
S 20/21	Bei der Arbeit nicht essen, trinken, rauchen.
S 24/25	Berührung mit den Augen und der Haut vermeiden.
S 27/28	Bei Berührung mit der Haut beschmutzte, getränkte Kleidung sofort ausziehen und Haut sofort abwaschen mit viel ...
S 29/35	Nicht in die Kanalisation gelangen lassen; Abfälle und Behälter müssen in gesicherter Weise beseitigt werden.
S 29/56	Nicht in die Kanalisation gelangen lassen; dieses Produkt und seinen Behälter der Problemabfallentsorgung zuführen.
S 36/37	Bei der Arbeit geeignete Schutzhandschuhe und Schutzkleidung tragen.
S 36/37/39	Bei der Arbeit geeignete Schutzkleidung, Schutzhandschuhe und Schutzbrille / Gesichtsschutz tragen.
S 36/39	Bei der Arbeit geeignete Schutzkleidung und Schutzbrille / Gesichtsschutz tragen.

- S 37/39 Bei der Arbeit geeignete Schutzhandschuhe und Schutzbrille / Gesichtsschutz tragen.
- S 47/49 Nur im Originalbehälter bei einer Temperatur von nicht über ... °C aufbewahren.

Spanish

Ignacio Fernández Galván sent me the Spanish phrases copy-and-paste-ready. What a surprise! I was done in five minutes. Thanks a lot!

- R 1 Explosivo en estado seco.
- R 2 Riesgo de explosión por choque, fricción, fuego u otras fuentes de ignición.
- R 3 Alto riesgo de explosión por choque, fricción, fuego u otras fuentes de ignición.
- R 4 Forma compuestos metálicos explosivos muy sensibles.
- R 5 Peligro de explosión en caso de calentamiento.
- R 6 Peligro de explosión, en contacto o sin contacto con el aire.
- R 7 Puede provocar incendios.
- R 8 Peligro de fuego en contacto con materias combustibles.
- R 9 Peligro de explosión al mezclar con materias combustibles.
- R 10 Inflamable.
- R 11 Fácilmente inflamable.
- R 12 Extremadamente inflamable.
- R 14 Reacciona violentamente con el agua.
- R 15 Reacciona con el agua liberando gases extremadamente inflamables.
- R 16 Puede explosionar en mezcla con sustancias comburentes.
- R 17 Se inflama espontáneamente en contacto con el aire.
- R 18 Al usarlo pueden formarse mezclas aire-vapor explosivas / inflamables.
- R 19 Puede formar peróxidos explosivos.
- R 20 Nocivo por inhalación.
- R 21 Nocivo en contacto con la piel.
- R 22 Nocivo por ingestión.
- R 23 Tóxico por inhalación.
- R 24 Tóxico en contacto con la piel.
- R 25 Tóxico por ingestión.
- R 26 Muy tóxico por inhalación.
- R 27 Muy tóxico en contacto con la piel.
- R 28 Muy tóxico por ingestión.
- R 29 En contacto con agua libera gases tóxicos.

R 30	Puede inflamarse fácilmente al usarlo.
R 31	En contacto con ácidos libera gases tóxicos.
R 32	En contacto con ácidos libera gases muy tóxicos.
R 33	Peligro de efectos acumulativos.
R 34	Provoca quemaduras.
R 35	Provoca quemaduras graves.
R 36	Irrita los ojos.
R 37	Irrita las vías respiratorias.
R 38	Irrita la piel.
R 39	Peligro de efectos irreversibles muy graves.
R 40	Posibles efectos cancerígenos.
R 41	Riesgo de lesiones oculares graves.
R 42	Posibilidad de sensibilización por inhalación.
R 43	Posibilidad de sensibilización en contacto con la piel.
R 44	Riesgo de explosión al calentarlo en ambiente confinado.
R 45	Puede causar cáncer.
R 46	Puede causar alteraciones genéticas hereditarias.
R 48	Riesgo de efectos graves para la salud en caso de exposición prolongada.
R 49	Puede causar cáncer por inhalación.
R 50	Muy tóxico para los organismos acuáticos.
R 51	Tóxico para los organismos acuáticos.
R 52	Nocivo para los organismos acuáticos.
R 53	Puede provocar a largo plazo efectos negativos en el medio ambiente acuático.
R 54	Tóxico para la flora.
R 55	Tóxico para la fauna.
R 56	Tóxico para los organismos del suelo.
R 57	Tóxico para las abejas.
R 58	Puede provocar a largo plazo efectos negativos en el medio ambiente.
R 59	Peligroso para la capa de ozono.
R 60	Puede perjudicar la fertilidad.
R 61	Riesgo durante el embarazo de efectos adversos para el feto.
R 62	Posible riesgo de perjudicar la fertilidad.
R 63	Posible riesgo durante el embarazo de efectos adversos para el feto.
R 64	Puede perjudicar a los niños alimentados con leche materna.
R 65	Nocivo: si se ingiere puede causar daño pulmonar.
R 66	La exposición repetida puede provocar sequedad o formación de grietas en la piel.

R 67	La inhalación de vapores puede provocar somnolencia y vértigo.
R 68	Posibilidad de efectos irreversibles.
R 14/15	Reacciona violentamente con el agua, liberando gases extremadamente inflamables.
R 15/29	En contacto con el agua, libera gases tóxicos y extremadamente inflamables.
R 20/21	Nocivo por inhalación y en contacto con la piel.
R 20/22	Nocivo por inhalación y por ingestión.
R 20/21/22	Nocivo por inhalación, por ingestión y en contacto con la piel.
R 21/22	Nocivo en contacto con la piel y por ingestión.
R 23/24	Tóxico por inhalación y en contacto con la piel.
R 23/25	Tóxico por inhalación y por ingestión.
R 23/24/25	Tóxico por inhalación, por ingestión y en contacto con la piel.
R 24/25	Tóxico en contacto con la piel y por ingestión.
R 26/27	Muy tóxico por inhalación y en contacto con la piel.
R 26/28	Muy tóxico por inhalación y por ingestión.
R 26/27/28	Muy tóxico por inhalación, por ingestión y en contacto con la piel.
R 27/28	Muy tóxico en contacto con la piel y por ingestión.
R 36/37	Irrita los ojos y las vías respiratorias.
R 36/38	Irrita los ojos y la piel.
R 36/37/38	Irrita los ojos, la piel y las vías respiratorias.
R 37/38	Irrita las vías respiratorias y la piel.
R 39/23	Tóxico: peligro de efectos irreversibles muy graves por inhalación.
R 39/24	Tóxico: peligro de efectos irreversibles muy graves por contacto con la piel.
R 39/25	Tóxico: peligro de efectos irreversibles muy graves por ingestión.
R 39/23/24	Tóxico: peligro de efectos irreversibles muy graves por inhalación y contacto con la piel.
R 39/23/25	Tóxico: peligro de efectos irreversibles muy graves por inhalación e ingestión.
R 39/24/25	Tóxico: peligro de efectos irreversibles muy graves por contacto con la piel e ingestión.
R 39/23/24/25	Tóxico: peligro de efectos irreversibles muy graves por inhalación, contacto con la piel e ingestión.
R 39/26	Muy tóxico: peligro de efectos irreversibles muy graves por inhalación.
R 39/27	Muy tóxico: peligro de efectos irreversibles muy graves por contacto con la piel.
R 39/28	Muy tóxico: peligro de efectos irreversibles muy graves por ingestión.
R 39/26/27	Muy tóxico: peligro de efectos irreversibles muy graves por inhalación y contacto con la piel.
R 39/26/28	Muy tóxico: peligro de efectos irreversibles muy graves por inhalación e ingestión.

R 39/27/28	Muy tóxico: peligro de efectos irreversibles muy graves por contacto con la piel e ingestión.
R 39/26/27/28	Muy tóxico: peligro de efectos irreversibles muy graves por inhalación, contacto con la piel e ingestión.
R 42/43	Posibilidad de sensibilización por inhalación y por contacto con la piel.
R 48/20	Nocivo: riesgo de efectos graves para la salud en caso de exposición prolongada por inhalación.
R 48/21	Nocivo: riesgo de efectos graves para la salud en caso de exposición prolongada por contacto con la piel.
R 48/22	Nocivo: riesgo de efectos graves para la salud en caso de exposición prolongada por ingestión.
R 48/20/21	Nocivo: riesgo de efectos graves para la salud en caso de exposición prolongada por inhalación y contacto con la piel.
R 48/20/22	Nocivo: riesgo de efectos graves para la salud en caso de exposición prolongada por inhalación e ingestión.
R 48/21/22	Nocivo: riesgo de efectos graves para la salud en caso de exposición prolongada por contacto con la piel e ingestión.
R 48/20/21/22	Nocivo: riesgo de efectos graves para la salud en caso de exposición prolongada por inhalación, contacto con la piel e ingestión.
R 48/23	Tóxico: riesgo de efectos graves para la salud en caso de exposición prolongada por inhalación.
R 48/24	Tóxico: riesgo de efectos graves para la salud en caso de exposición prolongada por contacto con la piel.
R 48/25	Tóxico: riesgo de efectos graves para la salud en caso de exposición prolongada por ingestión.
R 48/23/24	Tóxico: riesgo de efectos graves para la salud en caso de exposición prolongada por inhalación y contacto con la piel.
R 48/23/25	Tóxico: riesgo de efectos graves para la salud en caso de exposición prolongada por inhalación e ingestión.
R 48/24/25	Tóxico: riesgo de efectos graves para la salud en caso de exposición prolongada por contacto con la piel e ingestión.
R 48/23/24/25	Tóxico: riesgo de efectos graves para la salud en caso de exposición prolongada por inhalación, contacto con la piel e ingestión.
R 50/53	Muy tóxico para los organismos acuáticos, puede provocar a largo plazo efectos negativos en el medio ambiente acuático.
R 51/53	Tóxico para los organismos acuáticos, puede provocar a largo plazo efectos negativos en el medio ambiente acuático.
R 52/53	Nocivo para los organismos acuáticos, puede provocar a largo plazo efectos negativos en el medio ambiente acuático.
R 68/20	Nocivo: posibilidad de efectos irreversibles por inhalación.
R 68/21	Nocivo: posibilidad de efectos irreversibles por contacto con la piel.

R 68/22	Nocivo: posibilidad de efectos irreversibles por ingestión.
R 68/20/21	Nocivo: posibilidad de efectos irreversibles por inhalación y contacto con la piel.
R 68/20/22	Nocivo: posibilidad de efectos irreversibles por inhalación e ingestión.
R 68/21/22	Nocivo: posibilidad de efectos irreversibles por contacto con la piel e ingestión.
R 68/20/21/22	Nocivo: posibilidad de efectos irreversibles por inhalación, contacto con la piel e ingestión.
S 1	Consérvese bajo llave.
S 2	Manténgase fuera del alcance de los niños.
S 3	Consérvese en lugar fresco.
S 4	Manténgase lejos de locales habitados.
S 5	Consérvese en
S 6	Consérvese en
S 7	Manténgase el recipiente bien cerrado.
S 8	Manténgase el recipiente en lugar seco.
S 9	Consérvese el recipiente en lugar bien ventilado.
S 12	No cerrar el recipiente herméticamente.
S 13	Manténgase lejos de alimentos, bebidas y piensos.
S 14	Consérvese lejos de
S 15	Conservar alejado del calor.
S 16	Conservar alejado de toda llama o fuente de chispas – No fumar.
S 17	Manténgase lejos de materias combustibles.
S 18	Manipúlese y ábrase el recipiente con prudencia.
S 20	No comer ni beber durante su utilización.
S 21	No fumar durante su utilización.
S 22	No respirar el polvo.
S 23	No respirar los
S 23.0	No respirar los gases / humos / vapores / aerosoles.
S 23.1	No respirar los gases.
S 23.2	No respirar los humos.
S 23.3	No respirar los vapores.
S 23.4	No respirar los aerosoles.
S 24	Evítese el contacto con la piel.
S 25	Evítese el contacto con los ojos.
S 26	En caso de contacto con los ojos, lávense inmediata y abundantemente con agua y acúdase a un médico.
S 27	Quítese inmediatamente la ropa manchada o salpicada.

- S 28 En caso de contacto con la piel, lávese inmediata y abundantemente con . . .
- S 29 No tirar los residuos por el desagüe.
- S 30 No echar jamás agua a este producto.
- S 33 Evítese la acumulación de cargas electrostáticas.
- S 35 Elimínense los residuos del producto y sus recipientes con todas las precauciones posibles.
- S 36 Úsese indumentaria protectora adecuada.
- S 37 Úsen se guantes adecuados.
- S 38 En caso de ventilación insuficiente, úsese equipo respiratorio adecuado.
- S 39 Úsese protección para los ojos / la cara.
- S 40 Para limpiar el suelo y los objetos contaminados por este producto, úsese . . .
- S 41 En caso de incendio y / o de explosión no respire los humos.
- S 42 Durante las . . . , úsese equipo respiratorio adecuado.
- S 42.0 Durante las fumigaciones / pulverizaciones, úsese equipo respiratorio adecuado.
- S 42.1 Durante las fumigaciones, úsese equipo respiratorio adecuado.
- S 42.2 Durante las pulverizaciones, úsese equipo respiratorio adecuado.
- S 43.0 En caso de incendio, utilizar . . .
- S 43.1 En caso de incendio, utilizar . . . No usar nunca agua.
- S 45 En caso de accidente o malestar, acúdase inmediatamente al médico (si es posible, muéstrese la etiqueta).
- S 46 En caso de ingestión, acúdase inmediatamente al médico y muéstrese la etiqueta o el envase.
- S 47 Consérvese a una temperatura no superior a . . . °C.
- S 48 Consérvese húmedo con . . .
- S 49 Consérvese únicamente en el recipiente de origen.
- S 50 No mezclar con . . .
- S 51 Úsese únicamente en lugares bien ventilados.
- S 52 No usar sobre grandes superficies en locales habitados.
- S 53 Evítese la exposición – recábense instrucciones especiales antes del uso.
- S 56 Elimínense esta sustancia y su recipiente en un punto de recogida pública de residuos especiales o peligrosos.
- S 57 Utilícese un envase de seguridad adecuado para evitar la contaminación del medio ambiente.
- S 59 Remitirse al fabricante o proveedor para obtener información sobre su recuperación / reciclado.
- S 60 Elimínense el producto y su recipiente como residuos peligrosos.
- S 61 Evítese su liberación al medio ambiente. Recábense instrucciones específicas / las fichas de datos de seguridad.

S 62	En caso de ingestión no provocar el vómito: acúdase inmediatamente al médico y muéstresele la etiqueta o el envase.
S 63	En caso de accidente por inhalación, alejar a la víctima de la zona contaminada y mantenerla en reposo.
S 64	En caso de ingestión, enjuáguese la boca con agua (solamente si la persona está consciente).
S 1/2	Consérvese bajo llave y manténgase fuera del alcance de los niños.
S 3/7	Consérvese el recipiente bien cerrado y en lugar fresco.
S 3/9/14	Consérvese en lugar fresco y bien ventilado y lejos de
S 3/9/14/49	Consérvese únicamente en el recipiente de origen, en lugar fresco y bien ventilado y lejos de
S 3/9/49	Consérvese únicamente en el recipiente de origen, en lugar fresco y bien ventilado.
S 3/14	Consérvese en lugar fresco y lejos de
S 7/8	Manténgase el recipiente bien cerrado y en lugar seco.
S 7/9	Manténgase el recipiente bien cerrado y en lugar bien ventilado.
S 7/47	Manténgase el recipiente bien cerrado y consérvese a una temperatura no superior a . . . °C.
S 20/21	No comer, ni beber, ni fumar durante su utilización.
S 24/25	Evítese el contacto con los ojos y la piel.
S 27/28	Después del contacto con la piel, quítese inmediatamente toda la ropa manchada o salpicada y lávese inmediata y abundantemente con
S 29/35	No tirar los residuos por el desagüe; elimínense los residuos del producto y sus recipientes con todas las precauciones posibles.
S 29/56	No tirar los residuos por el desagüe; elimínese esta sustancia y su recipiente en un punto de recogida pública de residuos especiales o peligrosos.
S 36/37	Úsense indumentaria y guantes de protección adecuados.
S 36/37/39	Úsense indumentaria y guantes adecuados y protección para los ojos / la cara.
S 36/39	Úsense indumentaria adecuada y protección para los ojos / la cara.
S 37/39	Úsense guantes adecuados y protección para los ojos / la cara.
S 47/49	Consérvese únicamente en el recipiente de origen y a temperatura no superior a . . . °C.