TKHHB Briefing Note 3

Important Aspects of Labelling & Packaging of Adhesives

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This briefing note can be obtained from the Industrieverband Klebstoffe e.V., POB 26 01 25, D-40094 Düsseldorf, Phone +49 (0)211 67931-14, Fax +49 (0)211 67931-33, Internet: www.klebstoffe.com, E-Mail: info@klebstoffe.com
0. Introduction

This guidance document explains the basic principles and the procedures set out in the new Regulation (EC) No 1272/20087 on the classification, labelling and packaging of substances and mixtures (also known simply as the CLP Regulation), which came into force in the EU Member States on 20 January 2009, and how apply them to the packaging and labelling of adhesives.

The guidance does not cover classification but concerns general aspects of labelling. Consideration is given not only to the CLP Regulation but also to other applicable regulations and normative standards.

These guidelines are therefore intended primarily for suppliers, i.e. manufacturers of adhesives, importers or retailers who place an adhesive on the market.

1. CLP-compliant classification

Although this document is not intended to provide guidance on classification, this section provides some information which may be of help to adhesive manufacturers. Classification according to the CLP Regulation is handled in a similar way to the old Dangerous Preparations Directive (1999/45/EC). Annex VI of the CLP contains the classification for both systems. Classification can be done according to the properties measured or calculated in accordance with Annex I of the CLP. Different software programs (e.g. Simchem [German interface only], BG-RCI, Gemischrechner, SAFIN.Net, ChemGes, etc.) can be used for this purpose. Further assistance regarding classification according to the CLP Regulation is offered by BAUA (German Federal Institute for Occupational Safety and Health) and ECHA (European Chemicals Agency). A variety of information materials can be downloaded from their respective websites.

2. CLP-compliant labelling

Generally, adhesives are mixtures.

Labelling considers all potential hazards which could arise during common handling and use of dangerous mixtures (adhesives) when these are in the form in which they were placed on the market.

If your adhesive requires hazard labelling and has been packaged, it must be labelled with the following information or label elements (as set out in CLP Art. 17 (1)):

- the name, address (not precisely defined) and telephone number of the supplier(s);
The nominal quantity of the adhesive in the package made available to the general public, unless this quantity is specified elsewhere on the package;

- product identifiers (CLP Art. 18); and where applicable,
- hazard pictograms (CLP Art. 19);
- signal word(s) (CLP Art. 20);
- hazard statements (CLP Art. 21);
- appropriate precautionary statements (CLP Art. 22); and
- supplemental information (CLP Art. 25).

The general rules for the application of labels are laid down in Art. 31. The label elements listed above must be clearly and indelibly marked on the labels. They must stand out clearly from the background and be of such size and spacing as to be easily read.

A label is not required when the label elements are shown clearly on the packaging itself. In such cases, the requirements of CLP Article 31, point 5 applicable to a label shall be applied to the information shown on the packaging.

The label must be written in the official language(s) of the Member State(s) where the adhesive is placed on the market, unless the Member State(s) concerned provide(s) otherwise.

Suppliers can fulfil this requirement by producing one single multi-language hazard label containing all the official languages of the countries to which the substance or mixture is supplied or by producing individual country-specific hazard labels in the relevant language(s).

Suppliers may, if they wish, use more languages on their labels than those required by the Member States, provided that the same details appear in all languages used. However, this must not have a negative effect on readability of the mandatory labelling information and cannot be construed as an exemption from labelling requirements according to Art. 29 of the CLP Regulation.

Label elements may be provided in the following ways:

- in fold-out labels; or
- on tie-on tags; or
- on an outer packaging.

The label on any inner packaging must contain at least hazard pictograms, the product identifier and the name and telephone number of the supplier of the adhesive.

2.1. Product identifiers (CLP Art. 18)

The product identifiers used on the labels must be the same as those used in the safety data sheets.

While complying with the provisions regarding the use of languages, the product identifiers for adhesives must consist of both of the following:

1. the trade name or the designation of the adhesive;
2. the identity of all substances in the adhesive that contribute to the classification of the adhesive as regards acute toxicity, skin corrosion or serious eye damage, germ cell mutagenicity, carcinogenicity, reproductive toxicity, respiratory or skin sensitisation, specific target organ toxicity (STOT) or aspiration hazard.

2.2. Hazard pictograms and indications of danger

Hazard pictograms and indications of danger in connection with the use of the mixtures concerned must comply with the provisions of Annex I of the CLP Regulation and are applied as appropriate according to the results of the assessment regarding the hazardous properties as listed in that regulation.

As laid down in Annex V, hazard pictograms shall have a black symbol on a white background with a red frame sufficiently wide to be clearly visible. Hazard pictograms must be in the shape of a square set at a point (i.e., a diamond shape) . Each hazard pictogram must cover at least one fifteenth of the surface area of the harmonised label but the minimum area must not be less than 1 cm².
Where the classification of an adhesive would result in more than one hazard pictogram on the label, rules of precedence are applied to reduce the number of hazard pictograms required (CLP Art. 26). As a general rule, for each hazard class concerned, always use the pictogram corresponding to the most severe hazard category. This also applies in cases where a substance is subject to both harmonised and non-harmonised classification (CLP Art. 26 (2)).

The rules of precedence for hazard pictograms are as follows:

**For physical hazards:**

If your adhesive has to be labelled with GHS01 (exploding bomb), the use of the GHS02 (flame) and GHS03 (flame above a circle) is optional, except in cases where more than one of these hazard pictograms are compulsory (CLP Annex I, Section 2.8 (self-reactive substances and mixtures, type B), and Section 2.15 (organic peroxides, type B)).

For health hazards:

If the hazard pictogram GHS06 (skull and cross bones) applies, GHS07 (exclamation mark) shall not appear.

If GHS05 (corrosive) applies, GHS07 (exclamation mark) shall not appear for skin or eye irritation ...

... but may still be used for other hazards.

If GHS08 (health hazard) for respiratory sensitisation applies, the GHS07 (exclamation mark) shall not appear for skin sensitisation or for skin and eye irritation ...

... but may still be used for other hazards.

**2.3. Signal words**

Signal words are new, GHS-specific label elements. They give information about the relative degree of danger that an adhesive could present and alert persons handling the adhesive to a potential danger.

There are two signal words:

**Danger**

*Danger*: for severe hazard categories

**Warning**

*Warning*: for less severe hazard categories
2.4. Hazard statements (H-statements)

A hazard statement is a standardised phrase which describes the nature and possibly the degree of the hazard. Hazard statements are comparable to the R-phrases laid down in the old dangerous substances and preparations directives.

The rules of precedence for hazard statements are as follows:

If H410 “Very toxic to aquatic life with long lasting effects” applies, statement H400 “Very toxic to aquatic life” need not be used.

If H314 “Causes severe skin burns and eye damage” applies, statement H318 “Causes serious eye damage” need not be used.

2.5. Supplemental hazard information (EUH-statements)

Some R-phrases and other hazard labelling elements which are not covered by the UN’s GHS system, have been adopted as European H-statements (EUH-statements) in order to maintain the existing standards of protection across the EU.

The do not result in allocation to a specific hazard class and are therefore not contained in Section 2 of the safety data sheet (with the exception of EUH 059 ‘Hazardous to the ozone layer’. However, within the EU, they are a mandatory part of the labelling regulations.

2.6. Precautionary statements (P-statements)

Precautionary statements are standardised phrases describing the recommended measure(s) to minimise or prevent adverse effects resulting from exposure to an adhesive due to its use. Precautionary statements are thus comparable to the S-phrases from the old dangerous substances and preparations directives.

The precautionary statements are to be selected according to the criteria laid down in Annex IV Part 1 of the CLP Regulation, taking into account the hazard statements and the intended or identified uses of the adhesive. For adhesives that are made available to the general public, there are additional precautionary statements.

If certain precautionary statements are redundant, ambiguous or are clearly unnecessary because of the nature of the adhesive itself or its packaging, they are not indicated on the label.

No more than six precautionary statements should be included on a label, unless the degree of the danger demands a larger number. In this respect, combinations of P-statements are regarded as one single statement.

If it is technically impossible to indicate these statements on the label or the packaging itself, the safety recommendations for using the mixture must be provided in a leaflet accompanying the package.

2.7. Application of labels

Label dimensions (Table 1)

<table>
<thead>
<tr>
<th>Capacity of the package</th>
<th>Label dimensions (in millimetres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 3 litres</td>
<td>If poss., at least 52 x 74</td>
</tr>
<tr>
<td>&gt; 3 litres up to ≤ 50 litres</td>
<td>At least 74 x 105</td>
</tr>
<tr>
<td>&gt; 50 litres up to ≤ 500 litres</td>
<td>At least 105 x 148</td>
</tr>
<tr>
<td>&gt; 500 litres</td>
<td>At least 148 x 210</td>
</tr>
</tbody>
</table>
2.8. Location of information on the label

Table 2: CLP requirement (Article 32) Example of decisions which are at the discretion of the supplier

<table>
<thead>
<tr>
<th>The hazard pictograms, signal word, hazard statements and precautionary statements shall be located together on the label.</th>
<th>The supplier can decide the order of the pictograms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The hazard statements are to be grouped on the label. The order in which they appear is optional.</td>
<td>The supplier can decide whether this group should be located at the left, right or at another place on the label.</td>
</tr>
<tr>
<td>The precautionary statements are to be grouped on the label. The order in which they appear is optional.</td>
<td>The supplier can decide whether this group should be located at the left, right or at another place on the label.</td>
</tr>
</tbody>
</table>

If the label is multilingual, the hazard and precautionary statements are to be grouped on the label by language. If, in order to provide the language(s) required in a particular Member State, the supplier has to use alternative means to fulfill the requirements of Art. 31 of the CLP Regulation, he is free to decide which of the options listed in Annex 1, Section 1.5.1 to use: fold-out labels, tie-on tags, or an outer packaging.

The supplemental information in accordance with Art. 25 of the CLP Regulation shall be included in the section for supplemental information on the label and arranged alongside the other label elements stated in Art. 17 (1) (a) to (g). The supplier is free to decide how make this section visually distinct from the section containing the label elements in accordance with Art. 17 (1) (a) to (g). He may also decide whether to locate this information at several different places on the label.

2.9. Examples of CLP labels:

Example for a substance:

Example for a mixture:

The exact size of the letters of the signal words, hazard statements, precautionary statements and all supplemental information is not precisely defined in the legislative text. In other words, this decision is left up to the supplier (see local conditions, e.g. TRGS 200). The entity concerned [i.e. entity placing a product on the market] is free to increase the size of the lettering if the overall capacity of the packaging is larger and the dimensions of the label are greater, or whether to use a more or less fixed size of lettering irrespective of the packaging capacity and label size.

Moreover, the supplier can decide whether to use larger lettering for certain label elements than for others. Currently, some enterprises use larger letters for the signal word “Danger” or “Warning” on
their packagings than for the hazard statements and precautionary statements. There are also companies who generally print the mandatory labelling elements according to the CLP Regulation in larger lettering than the non-mandatory information. Either scenario is in conformity with the legal provisions of the CLP Regulation, as long as the mandatory information on the label is easily legible.

It is recommended to use letters with a minimum height of 1.5 mm in order to ensure legibility of the text. However, this is a recommendation only and is not to be understood as a legal requirement enshrined in the CLP Regulation (TRGS 200 recommends not going below a letter height of 2 mm for labelling in accordance with 1999/45/EC).

2.10. Simplification of labelling and exemptions under CLP and other regulations

2.10.1. CLP
2.10.1.1. Small quantities

The first group of exemptions relates to packages whose contents do not exceed 125 ml. The label elements listed in column 2 of Table 3 shown below, which refer to the hazard classes and categories listed in column 1 of the table, may be omitted from the label if the adhesive has been classified as falling under these hazard classes or categories. However, if the adhesive has been classified under other hazard classes that are not listed here, the label elements must still be included for those other hazard classes.

<table>
<thead>
<tr>
<th>Hazard classification of the adhesive</th>
<th>Permissible omission acc. to CLP, Annex I Section 1.5.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidising gases of category 1</td>
<td>Hazard and precautionary statements for the hazard classes stated in column 1.</td>
</tr>
<tr>
<td>Gases under pressure</td>
<td>Note: For the listed hazard categories, the hazard pictogram and the signal word must be provided</td>
</tr>
<tr>
<td>Flammable liquids of category 2 or 3</td>
<td></td>
</tr>
<tr>
<td>Flammable solids of category 1 or 2</td>
<td></td>
</tr>
<tr>
<td>Self-reactive substances and mixtures, Types C to F</td>
<td></td>
</tr>
<tr>
<td>Self-heating substances and mixtures of category 2</td>
<td></td>
</tr>
<tr>
<td>Substances and mixtures which, in contact with water, emit flammable gases of category 1, 2 or 3</td>
<td></td>
</tr>
<tr>
<td>Oxidising liquids of category 2 or 3</td>
<td></td>
</tr>
<tr>
<td>Oxidising solids of category 2 or 3</td>
<td></td>
</tr>
<tr>
<td>Organic peroxides, type C, D, E or F</td>
<td></td>
</tr>
<tr>
<td>Acute toxicity, category 4, if the substances or mixtures are not supplied to the general public</td>
<td></td>
</tr>
<tr>
<td>Skin irritation of category 2</td>
<td></td>
</tr>
<tr>
<td>Eye irritation of category 2</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure of category 2 or 3, if the substance or mixture is not supplied to the general public</td>
<td></td>
</tr>
<tr>
<td>Hazardous to the aquatic environment – Acute of category 1</td>
<td></td>
</tr>
<tr>
<td>Hazardous to the aquatic environment – Chronic of category 1 or 2</td>
<td></td>
</tr>
<tr>
<td>Flammable gases of category 2</td>
<td>Precautionary statements relating to the hazard classes stated in column 1</td>
</tr>
<tr>
<td>Effects on or via lactation</td>
<td>Note: The hazard statements and the signal word must be provided since no hazard pictograms are required for the listed hazard categories.</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment – Chronic of category 3 or 4</td>
<td></td>
</tr>
<tr>
<td>Corrosive to metals</td>
<td>Hazard pictogram, hazard and precautionary statements for this hazard class</td>
</tr>
<tr>
<td></td>
<td>Note: For this hazard class, the signal word is required.</td>
</tr>
</tbody>
</table>

In addition to the exemptions stated above for packages with a small capacity or those that are difficult to label because of their shape/design, the CLP Regulation also states cases where similar exemptions from the labelling and packaging requirements apply.
2.10.1.2. Small packages of aerosols

In exactly the same way as the DSD, the CLP Regulation provides that the exemptions for labelling of small packages of aerosols as flammable laid down in Directive 75/324/EEC shall apply to aerosol dispensers.

2.10.1.3. Soluble packaging

Another exemption laid down in the CLP Regulation applies to soluble packagings whose contents do not exceed 25 ml. The label elements required by Article 17 of the CLP Regulation can be omitted from soluble packaging. Provided the soluble packaging is intended for single use and is contained within outer packaging which fully meets the CLP labelling requirements. The exemption applies where the classification of the substance or mixture contained in the packaging is exclusively one or more of more of the hazard categories listed in the first row of column 1 in Table 3 above. However, the exemption does not apply to substances or mixtures within the scope of Directive 91/414/EEC (plant protection products) or Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products.

2.10.1.4. Outer packaging (transport packaging)

(1) Where a package consists of an outer and an inner packaging, together with any intermediate packaging, and the outer packaging meets labelling provisions in accordance with the rules on the transport of dangerous goods, the inner and any intermediate packaging shall be labelled in accordance with this Regulation. The outer packaging may also be labelled in accordance with this Regulation. Where the hazard pictogram(s) required by this Regulation relate to the same hazard as in the rules for the transport of dangerous goods, the hazard pictogram(s) required by this Regulation need not appear on the outer packaging.

(2) Where the outer packaging of a package is not required to meet labelling provisions in accordance with rules on the transport of dangerous goods, both the outer and any inner packaging, including any intermediate packaging, shall be labelled in accordance with this Regulation. However, if the outer packaging permits the inner or intermediate packaging labelling to be clearly seen, the outer packaging need not be labelled.

(3) Single packages that meet the labelling provisions in accordance with the rules on the transport of dangerous goods shall be labelled both in accordance with this Regulation and the rules on the transport of dangerous goods. Where the hazard pictogram(s) required by this Regulation relate to the same hazard as in rules on the transport of dangerous goods, the hazard pictogram(s) required by this Regulation need not appear.

2.10.2. German Hazardous Substances Ordinance

Without prejudice to the provisions, statements such as “non-toxic”, “not harmful to health”, “does not harm the environment”, “eco-friendly” or any other statement intended to indicate the non-hazardous nature of a preparation or which could lead to an underestimation of the dangerous characteristics of that preparation, shall not be used on the packaging or labelling tag of the adhesives within the scope of this guidance document.

2.11. Adhesives available to the general public – additional requirements under CLP and other rules and regulations

2.11.1. Nominal quantity for adhesives

Nominal quantity (nominal mass or nominal volume) of package contents for adhesive made available to the general public (unless this quantity is specified elsewhere on the package)

According to the Fertigpackungs-Verordnung (German ordinance on finished packages), finished packages containing adhesives are to be labelled by weight in Germany.

According to the Aerosol Directive, finished packaging containing products in aerosol form [aerosol dispensers] are to be labelled by net volume of the contents as well as by weight. The net volume to be stated is the volume of the liquid phase. The net capacity of the dispenser must also be indicated. This indication must be made in such a way that it cannot be confused with the indication of the (nominal) net volume of the contents.

2.11.2. Special labelling requirements

2.11.2.1. Adhesives that contain at least one sensitising substance

The label on the packaging of adhesives which are not classified as sensitising but contain at least one substance classified as sensitising and present in a concentration (≥ 0.1% according to DPD or ≥ (1/10) of the concentration threshold specified in CLP) must bear the following supplemental hazard information (as specified in the CLP Regulation, Annex II, 2.8).

EUH208 ‘Contains (name of sensitising substance). May produce an allergic reaction.’

For adhesives which are classified as sensitising and contain one or more substances classified as sensitising (other than that substance which led to
the classification of the mixture) and present in a concentration (≥ 0.1% according to DPD or ≥ (1/10) of the concentration threshold specified in CLP), the names of these substances must appear on the label.

2.11.2.2. Cyanoacrylate adhesives (instant adhesives)

The label on the immediate packaging of adhesives based on cyanoacrylate shall bear the following statement: (Annex II, 2.2).

EUH202
‘Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children’

Appropriate advice on safety shall accompany the package.

When using very small packaging (e.g. 1 ml) there are options of having outer and inner packaging. According to Annex I sec. 1.5.1.2 of the CLP regulation at least the pictogram of hazard (10 x 10 mm) as well as the product identifier and the name and the number of the retailer must be labelled on the tube as the inner packaging. Cyanoacrylates must also carry the EUH202 on its label. This clause must not be shortened or changed! The design of the label must make sure that all relevant information is provided (e.g. the safety device “Keep out of the reach of children” must easily be noticed. The complete labelling must be carried out on the outer packaging. Therefore it makes sense not having multilingual labels on small packaging.

2.11.2.3. Cementitious adhesives (tile adhesives)

The packaging of cementitious adhesives that contain, when they are hydrated, more than 0,0002% (2ppm) soluble chromium (VI) of the total dry weight of the cement must bear the following supplemental information (Annex II, 2.3):

EUH203
‘Contains chromium (VI). May produce an allergic reaction.’

This does not apply if the mixture has already been classified as sensitising and labelled with the statement H317.

If reducing agents are used, then the packaging shall include information on the packing date, the storage conditions and the storage period appropriate to maintaining the activity of the reducing agent and to keeping the content of soluble chromium (VI) below 0,0002% of the total dry weight of the cementitious adhesive. Cementitious adhesives that contain, when they are hydrated, less than 0,0002% (2 ppm) soluble chromium (VI) of the total dry weight of the cement (‘low-chromate cementitious adhesives’) do not require to be classified and labelled with H317 with respect to their chromate content.

The labelling requirements do not apply to the placing on the market of cementitious adhesives intended for use in monitored, closed and fully automatic processes in which the cementitious adhesives come into contact exclusively with machines and there is no danger of skin contact.

2.11.2.4. Adhesives containing isocyanates (e.g. MDI, polyurethane adhesives)

The label of the packaging of mixtures containing isocyanates (as monomers, oligomers, prepolymers, etc., or as mixtures thereof) shall bear the following supplemental information (Annex II, 2.4):

EUH204
‘Contains isocyanates. May produce an allergic reaction.’

In addition, products which are intended for the general public and contain ≥ 0.1% by weight MDI must also comply with the provisions of the REACH regulation, Annex XVII, entry 56.

For example, by bearing these additional statements:

‘Persons already sensitised to diisocyanates may develop allergic reactions when using this product.’

‘Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.’

‘This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.’

2.11.2.5. Adhesives containing epoxy constituents with an average molecular weight ≤ 700

Unless already identified on the label of the packaging, mixtures containing epoxy constituents with an average molecular weight ≤ 700 shall bear the following supplemental information (Annex II, 2.5):

EUH205
‘Contains epoxy constituents. May produce an allergic reaction.’

2.11.2.6. Adhesives containing a substance that has been assigned the statement H362

If an adhesive contains at least one substance that has been assigned the statement H362, the label
on the packaging of the adhesive must bear the wording of statement H362

‘May cause harm to breast-fed children’

if the substance is present in the adhesive in a concentration ≥ 1%, if no other value has been specified in the substance list.

2.11.2.7. Adhesives not intended for the general public and which are not classified as hazardous but which contain at least one hazardous substance

The label on the packaging of adhesives not intended for the general public and which are not classified as hazardous according to the CLP Regulation but which contain at least one hazardous substance must bear the following statement (Annex II, 2.10):

EUH210
‘Safety data sheet available on request’

2.11.2.8. Contact adhesives containing cyclohexane

Without prejudice to other Community legislation concerning the classification, packaging and labelling of substances and mixtures, suppliers shall ensure, in accordance with Annex XVII entry 57 of the REACH Regulation, before the placing on the market that neoprene-based contact adhesives containing cyclohexane in concentrations ≥ 0.1% by weight that are placed on the market in a size greater than > 350 ml for supply to the general public are visibly, legibly and indelibly marked as follows:

‘This product is not to be used under conditions of poor ventilation. This product is not to be used for carpet laying.’

2.11.2.9. Adhesives containing lead /chlorine / cadmium

The label of the packaging of mixtures containing lead, chlorine and/or cadmium shall bear the following statement(s) according to CLP Annex II:

EUH201
‘Warning! Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.’

EUH206
‘Warning! Do not use together with other products. May release dangerous gases (chlorine)’

2.11.2.9.3 Mixtures containing cadmium (alloys) and intended to be used for brazing or soldering

The label on the packaging of the above mentioned mixtures shall bear the following statement (Annex II, 2.7):

EUH207
‘Warning! Contains cadmium. Dangerous fumes are formed during use. See information supplied by the manufacturer. Comply with the safety instructions.’

2.11.2.10. Adhesives with special labelling requirements

Adhesives that contain a substance which has been assigned the hazard statement H336

If an adhesive contains at least one substance which has been assigned the hazard statement ‘H336: May cause drowsiness or dizziness.’, the label of the adhesive must contain the wording of this statement where the total concentration of such substances contained in the adhesive is equal to or exceeds 15%, unless:

1. the adhesive has already been assigned the H-statements H330, H331, H332, H370 or H371 because of its classification, or

2. the contents of the adhesive package do not exceed 125 ml.

For toxic and corrosive adhesives which are available to the general public, the following precautionary statements are mandatory labelling elements:

P405 ‘Store locked up.’
P102 ‘Keep out of reach of children’
P314 ‘Get medical advice/attention if you feel unwell.’
In addition, for adhesives (CLP Art. 28, 2) intended for the general public the following precautionary statement concerning disposal is a mandatory labelling element:

P501 ‘Dispose of contents/container to …’

where the hazard classes listed in Table 5 have been reached.

Table 5

<table>
<thead>
<tr>
<th>Hazard classes</th>
<th>Hazard category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive substances/mixtures and articles (section 2.1)</td>
<td>Unstable explosive substances/mixtures and products containing explosive substances of Divisions 1.1, 1.2, 1.3, 1.4, 1.5</td>
</tr>
<tr>
<td>Flammable liquids (section 2.6)</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Self-reactive substances and mixtures (section 2.8)</td>
<td>Types A to F</td>
</tr>
<tr>
<td>Substances and mixtures which in contact with water emit flammable gases (section 2.12)</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Oxidising liquids (section 2.13)</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Oxidising solids (section 2.14)</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Organic peroxides (section 2.15)</td>
<td>Types A to F</td>
</tr>
<tr>
<td>Acute oral toxicity (section 3.1)</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>Acute dermal toxicity (section 3.1)</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>Acute inhalation toxicity (section 3.1)</td>
<td>1, 2</td>
</tr>
<tr>
<td>Skin corrosion/irritation (section 3.2)</td>
<td>1A, 1B, 1C</td>
</tr>
<tr>
<td>Respiratory sensitisation (section 3.4)</td>
<td>1</td>
</tr>
<tr>
<td>Germ cell mutagenicity (section 3.5)</td>
<td>1A, 1B, 2</td>
</tr>
<tr>
<td>Carcinogenicity (section 3.6)</td>
<td>1A, 1B, 2</td>
</tr>
<tr>
<td>Reproductive toxicity (section 3.7)</td>
<td>1A, 1B, 2</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure) (section 3.8)</td>
<td>1, 2</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure) Respiratory tract irritation (section 3.8)</td>
<td>3</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure), narcotic effects (section 3.8)</td>
<td>3</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure) (section 3.9)</td>
<td>1, 2</td>
</tr>
<tr>
<td>Aspiration hazard (section 3.10)</td>
<td>1</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment – acute aquatic toxicity (section 4.1)</td>
<td>1</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment – chronic aquatic toxicity (section 4.1)</td>
<td>1, 2, 3, 4</td>
</tr>
</tbody>
</table>

The following P-statement is urgently recommended for adhesives which are classified as harmful to human health and are supplied to the general public:

P101 ‘If medical advice is needed, have product container or label at hand.’

Also urgently recommended for adhesives supplied to the general public, except for those classified as only harmful to the environment, is the following P-statement:

P102 ‘Keep out of reach of children’

Adhesives presenting an aspiration hazard

Liquid adhesives which present an aspiration hazard for humans owing to their low viscosity, are to be classified under target-organ toxicity, and labelled with

H304 ‘May be fatal if swallowed and enters airways’

P301 + P310 + P331

‘If swallowed: Immediately call a poison centre or doctor/physician. Do NOT induce vomiting.’

Adhesives which have been classified as harmful to human health because of an aspiration hazard do not require to be labelled when they are placed on the market in aerosol dispensers or containers fitted with a sealed spray attachment. A sealed spray attachment is characterised by the fact that it is firmly attached to the container and cannot be detached without destroying it/the container.

Adhesives which are applied by spraying (sprayable adhesives)

The labelling of dangerous adhesives which are applied by spraying must contain the additional precautionary statement:

P260 ‘Do not breathe spray’

The same applies to dangerous mixtures which are applied by spraying or for use in aerosol form.

Toxic adhesives must additionally be labelled with a precautionary statement

P285 ‘In case of inadequate ventilation wear respiratory protection.’

if they are to be used in industry or agriculture. Toxic adhesives must additionally be labelled with the precautionary statement

P271 ‘Use only outdoors or in a well-ventilated area.’

if they are intended for the general public and P285 is not appropriate.
2.11.2.11. Aerosol dispensers (spray adhesives)

CLP recognises the Aerosol Directive. It contains a note saying that aerosols are also subject to the labelling provisions in accordance with points 2.2 and 2.3 in the Annex to Directive 75/324/EEC (2013/10/EU).

Regardless of their contents, all aerosol (spray) adhesives must also be labelled in accordance with Article 3 of the "Thirteenth Ordinance to the [German] Product Safety Act (13th ProdSV)" by providing additional precautionary instructions for use intended to alert the user to specific dangers of the product.

The following statements must be included in all cases:

H229 ‘Pressurized container: may burst if heated’

If the spray adhesive has been classified as ‘flammable’, the following warnings are also required:

The signal word ‘Warning’ where the aerosol has been classified as ‘non-flammable’ according to the criteria in Directive 75/324/EEC, Annex point 1.9.

The signal word ‘Warning’ and the other labelling elements provided in Regulation (EC) No 1272/2008 Annex I Table 2.3.2 for “Flammable Aerosols Category 2”, where the aerosol has been classified as ‘flammable’ according to the criteria in Directive 75/324/EEC, Annex point 1.9.

The signal word ‘Danger’ and the other labelling elements provided in Regulation (EC) No 1272/2008 Annex I Table 2.3.2 for “Flammable Aerosols Category 1”, where the aerosol has been classified as ‘extremely flammable according to the criteria in Directive 75/324/EEC, Annex point 1.9.

P210 ‘Keep away from heat/sparks/open flames/hot surfaces. – — No smoking’
P211 ‘Do not spray on an open flame or other ignition source.’
P251 ‘Pressurized container: Do not pierce or burn, even after use.’
P410 ‘Protect from sunlight.’
P412 ‘Do not expose to temperatures exceeding 50 °C/122°F.’

Where the aerosol dispenser is a consumer product:

P102 ‘Keep out of reach of children’

Any additional operating precautions which alert consumers to the specific dangers of the product; if the aerosol dispenser is accompanied by separate instructions for use, the latter must also reflect such operating precautions.

If the supplier responsible for placing the aerosol spray adhesives on the market can demonstrate by means of suitable tests or analyses that although the particular aerosol dispenser being considered does contain flammable components it does not present a risk of igniting under normal or reasonably foreseeable conditions of use, he may at his discretion decide not to apply the provisions (see above). In such a case, the flammable components contained in the spray adhesive must be stated on the label:

‘X % by mass of the contents are flammable’.

For classification and labelling purposes, the propellant used is a component of the mixture. Please refer also to the section: Adhesives presenting an aspiration hazard.

Mixtures which are placed on the market in the form of aerosol dispensers for entertainment and decoration purposes and which contain flammable components must, where not covered by REACH, Annex XVII, no 40, be additionally labelled with the following text:

‘For commercial use only’

2.11.2.12. Adhesives containing new substances that have not yet been fully tested

For substances which have not or have not adequately been classified for lack of data or adequate information, the CLP Regulation makes no provision for the inclusion on the label of any statement such as ‘Caution - substance not yet fully tested.’ (as known from the deleted Article 8(5) of Directive 67/548/EEC).

For mixtures, however, the CLP Regulation does provide for such a statement in Annex I Part 3, para 3.1.3.6.2.2:

‘X percent of the mixture consists of ingredient(s) of unknown toxicity’

Adhesives containing new substances that have not yet been fully tested are to be classified and labelled according to their known characteristics.

3. Instructions for use

Adhesives classified as toxic or corrosive which are available to the general public must bear precise and easily understood instructions for use on their packaging. Where this is technically impossible, the instructions for use must be provided on an accompanying leaflet.
The instructions for use shall contain precise information on the intended and safe use of the product and the dosage (quantity to be applied).

Where applicable, the following information shall be included in the instructions for use:

- Possible harmful effects on human health and other harmful effects which can occur, particularly in the case of foreseeable misuse or incorrect use.
- Appropriate safety instructions/precautions for use; e.g. the material of the gloves to be worn, personal protective equipment, avoidance of mixing the product with certain other groups of substances or mixtures, emergency action to be taken in the event of accidents (such as first aid or firefighting measures) where normal consumer behaviour might lead to an additional danger.
- Appropriate storage instructions and information on cleaning up/decontamination/neutralisation in the case of accidental release, and
- Appropriate disposal of product residues and empty packages that have not been cleaned.

Where single packages are packed together in a larger packaging unit for placing on the market, it is sufficient to insert only one instruction leaflet into the packaging unit, provided the leaflet is in a form that can be photocopied.

Adhesives supplied to the general public: packaging rules for child-resistant fastenings and tactile warnings

Where adhesives are supplied to the general public, it may be necessary to equip the package with child-resistant fastenings (closures) and/or tactile warnings (CLP Annex II Part 3)

These rules apply to the specific hazard classes/categories listed in the following table.

The rules apply to all packages of whatever capacity

<table>
<thead>
<tr>
<th>Hazard class (category)</th>
<th>Child-resistant fastenings</th>
<th>Tactile warnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (categories 1–3)</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Acute toxicity (category 4)</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>STOT (specific target-organ toxicity – single exposure (category 1))</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>STOT – single exposure (category 2)</td>
<td></td>
<td>√</td>
</tr>
</tbody>
</table>

Child-resistant fastenings are also required for concentrations of methanol > 3% or dichloromethane > 1%.

Tactile warning symbol in conformity with EN ISO standard 11683 (issued 1997)

For packages with bottom (normal standing surface), the warning symbol must be completely tactile and located on the upright handling surface of the package close to the edge so that the apex of the triangle is no more than 50 mm from the bottom of the package. For aerosol dispensers, containers for flammable gases and plastic packages with a complete opening (produced by injection moulding) special rules apply for the positioning of the tactile warning symbol. For tubes and cartridges (packages without bottom) the tactile hazard symbol shall be located on the shoulder, spaced evenly on a concentric circle around the tube nozzle.
Child-resistant fastenings:

Image source: Heinlein-Plastik - Technik GmbH

The safety function is based on the finding that children of the relevant age from 42 to 51 months are not capable of performing two movements, such as "press" and "twist", simultaneously in a sufficiently coordinated manner.

To release the child-resistant closure or to enable the twist-off motion, the cap must be pressed down axially while twisting. This causes the locking cams of the cap and bottom part to engage, so that the child-proof fastening can be released.

Child-resistant fastenings used on reclosable packages shall comply with ISO standard 8317 (1 July 1989), while those used on non-reclosable packages shall comply with the CEN standard EN 862 (March 1997). Child-resistant fastenings used on reclosable packages shall be permanently child-resistant.

Evidence that a package has been equipped with an adequate level of child-resistant fastening may only be delivered by a laboratory which has demonstrated that it fulfills the quality requirements set forth in the EN 45000 family of standards. After performing the test, the test laboratory issues a certificate which, if requested, is to be presented to the competent authority by the entity placing the package on the market.

Packages whose contents cannot be accessed without the help of a tool do not need to be tested.

In all other cases and where there are justified doubts as to the effectiveness of the child-resistant fastening, the competent national authority can request the entity responsible for placing the package on the market to present a certificate issued by a certifying laboratory and covering the following points:

- The closure used is designed in such a way that no testing is necessary, or
- The closure concerned has been tested and complies with the above named standards.

4. Sources

7. Gefahrstoffverordnung (GefStoffV) – Hazardous Substances Ordinance (GefStoffV)
8. Chemikaliengesetz (ChemG) – German Chemicals Act
10. Biocidal Products Regulation - Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products
12. EN/ISO 11683 - Packaging – Tactile warnings of danger -- Requirements
13. EN 862 - Packaging. Child resistant packaging. Requirements and testing procedures for non-reclosable packages for non-pharmaceutical products
5. Glossary

Terms used in this guidance document

Aerosol dispensers: All non-reusable containers made of metal, glass or plastic and containing a gas compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state.

Aspiration: The entry of a liquid or solid substance or mixture directly through the oral or nasal cavity or indirectly from vomiting, into the trachea and lower respiratory system.

Skin corrosion: The production of irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following the application of a test substance for up to 4 hours.

Eye irritation: The production of changes in the eye following the application of test substance to the anterior surface of the eye, which are fully reversible within 21 days of application.

CLP or CLP Regulation: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

CMR: Substance or mixture that is carcinogenic, mutagenic or reproduction toxic

DSD: Dangerous substances directive (67/548/EEC)


Flammable solid: A solid which is readily combustible, or may cause or contribute to fire through friction.

Flammable liquid: A liquid having a flash point of not more than 60 °C.

Flash point: The lowest temperature (corrected to a standard pressure of 101.3 kPa) at which under given test conditions, the application of an ignition source causes vapours emitted by the liquid to ignite.

Flammable gas: A gas or gas mixture having a flammable range with air at 20 °C and a standard pressure of 101,3 kPa.

Article: An object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition.
Explosive article: An article containing one or more explosive substances

Explosive substances/mixtures: An explosive substance or mixture is a solid or liquid substance or mixture of substances which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances are included even when they do not evolve gases.

Solid: A substance or mixture which does not meet the definitions of liquid or gas.

Liquid: A substance or mixture which at 50 °C has a vapour pressure of not more than 300 kPa (3 bar); is not completely gaseous at 20 °C and at a standard pressure of 101.3 kPa; and which has a melting point or initial melting point of 20 °C or less at a standard pressure of 101.3 kPa. A viscous substance or mixture for which the specific melting point cannot be determined shall be subjected to testing in accordance with ASTM D 4359-90 or testing to determine fluidity (penetrometric test) in accordance with Annex A Part 2 Section 2.3.4 of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

Gas: A substance which (i) at 50 °C has a vapour pressure greater than 300 kPa; or (ii) is completely gaseous at 20 °C at a standard pressure of 101.3 kPa.

Hazardous: Fulfilling the criteria for physical hazards, human health hazards or environmental hazards as given in Annex I Part 2 to 5 of the CLP Regulation.

Hazard statement: A phrase assigned to a hazard class and category that describes the nature of the hazards of a hazardous substance or mixture, including, where appropriate, the degree of hazard.

Hazard category: The division of criteria within each hazard class, specifying hazard severity.

Hazard class: The nature of the physical, health or environmental hazard.

Hazard pictogram (sometimes reduced to the word ‘pictogram’ alone in this document): A graphical composition that includes a symbol plus other graphic elements, such as a border, background pattern or colour that is intended to convey specific information on the hazard concerned.

Substance or mixture that is corrosive to metals: A substance or a mixture which by chemical action will materially damage, or even destroy, metals.

Mixture: A mixture or solution composed of two or more substances (it should be noted that “mixture” (CLP) and “preparation” (Dangerous Preparations Directive) are synonymous). In Chapter 1.2 of the UN GHS, however, the otherwise identical definition contains the additional wording “in which they do not react”.

GHS: Globally Harmonised System of Classification and Labelling of Chemicals which was developed by the United Nations (UN).

Distributor: Any natural or legal person established within the Community, including a retailer, who only stores and places on the market a substance, on its own or in a mixture, for third parties.

Skin sensitiser: A substance that will lead to an allergic response following skin contact. The definition of a “skin sensitiser” is equivalent to that of a “contact sensitiser”.

Manufacturer: Any natural or legal person established within the Community who manufactures a substance within the Community.

Manufacturing: Production or extraction of substances in the natural state.

Importer: Any natural or legal person established within the Community who is responsible for import.

Respiratory sensitiser: A substance that will lead to hypersensitivity of the airways following inhalation of the substance.

Placing on the market: Supplying or making available, whether in return for payment or free of charge, to a third party. Import shall be deemed to be placing on the market.

Carcinogen: A substance or a mixture of substances which induce cancer or increase its incidence.

Label element: A specific type of information which has been harmonised for use on a label, such as a hazard pictogram or a signal word.
Label: An appropriate group of written, printed or graphic information elements concerning a hazardous product [substance or mixture], selected as relevant to the target sector(s), that is affixed to, printed on, or attached to the immediate container of a hazardous product, or to the outside packaging of a hazardous product (definition as given in Chapter 1.2 of the UN GHS).

Mutagen/mutagenic: Agents giving rise to an increased occurrence of mutations in populations of cells and/or organisms.

Mutation: A permanent change in the amount or structure of the genetic material in a cell.

Product identifier: Details permitting the identification of the substance or mixture.

Skin irritation: The production of reversible damage to the skin following the application of a test substance for up to 4 hours.

Serious eye damage: The production of tissue damage in the eye, or serious physical decay of vision, following application of a test substance to the anterior surface of the eye, which is not fully reversible within 21 days of application.

SDS: Safety data sheet.

Self-heating substance or mixture: A liquid or solid substance or mixture, other than a pyrophoric liquid or solid, which, by reaction with air and without energy supply, is liable to self-heat; this substance or mixture differs from a pyrophoric liquid or solid in that it will ignite only when in large amounts (kilograms) and after long periods of time (hours or days).

Self-reactive substance or mixture: Thermally unstable liquid or solid substances or mixtures liable to undergo a strongly exothermic decomposition even without participation of oxygen (air). This definition excludes substances and mixtures classified according to the CLP Regulation as explosives, organic peroxides or as oxidising.

Precautionary statement: A phrase that describes recommended measure(s) to minimise or prevent adverse effects resulting from exposure to a hazardous substance or mixture due to its use or disposal.

Signal word: A word that indicates the relative level of severity of hazards to alert the reader to a potential hazard; the following two levels are distinguished:
   a) ‘Danger’: A signal word indicating the more severe hazard categories
   b) ‘Warning’: a signal word indicating the less severe hazard categories.

Symbol: A graphical element intended to succinctly convey information.

UN GHS: United Nations Globally Harmonised System of Classification and Labelling of Chemicals. This system was developed by the Economic and Social Council (ECOSOC) of the United Nations and contains international criteria for the classification and labelling of hazardous substances and mixtures.

The information and specifications in this briefing note reflect to the best of our knowledge the current state of technology. They are only intended for information purposes and as a nonbinding guideline. As a result, they cannot be used as a basis for deriving any warranty claims.