ECHA
EUROPEAN CHEMICALS AGENCY

Notes and Tips on hazard types

Physical hazards

A mixture may have different hazards than its individual components, for example, a mixture of a flammable and an oxidising substance may be explosive.
In practice, there are the following choices to classify for physical hazards:

1. Find the test data from which the transport classification was derived and use that to figure out the CLP classification.
2. Find data from reliable sources and use that.
3. Do the appropriate tests.

For option 1, you need to understand that transport uses a hierarchy for the hazards, meaning that a more severe hazard can supersede a less severe hazard. This is not the case in CLP, although there are situations where this is applicable: for example, a potentially explosive substance or mixture should not be subjected to tests for flammability - for quite obvious reasons. In general, actual test data is needed and transport classification is not enough.

Option 2 is really only applicable to simple physical hazards such as flammability for liquids. The flash point from a reliable data source may be used, but for mixtures this is seldom available.

For option 3, the Guidance on the application of CLP criteria will provide you with the necessary information.

When new tests for physical hazards are carried out for the purposes of classification, they must be carried out in compliance with a relevant recognised quality system [e.g. GLP] or by laboratories complying with a relevant recognised standard (e.g. ISO 17025). See CLP Q&A ID 268.

Notes and Tips on hazard types

Health hazards

In practice, health data which directly apply to a mixture are rarely available. However, if relevant, reliable and scientifically valid information is available, it may be of high value for the purpose of classification. For example, human cases of sensitisation to the mixture may have been reported. Certain physicochemical parameters also influence classification for health hazards: the pH-value of the mixture needs to be taken into account regarding corrosion and irritation; kinematic viscosity may need to be measured for aspiration toxicity.

In most cases, health hazard classification of a mixture will have to be based on the data available on the individual substances of the mixture. For certain hazards, namely acute toxicity, skin corrosion/irritation and serious eye damage/irritation, the approach to classify a mixture is based on the theory of additivity: each component substance is assumed to contribute to the overall hazard in proportion to its potency and concentration. For narcotic effects and respiratory tract irritation, the contribution of each substance should also be considered additive, unless there is evidence that the effects are not additive. There are specific methods given in the respective hazard chapters to derive the overall classification by an additive calculation (CLP Annex I, 3.1.3.6, CLP Annex I, 3.2.3.3.4, CLP Annex I, 3.3.3.3.4 CLP Annex I, 3.8.3.4.5).

In the CLP Regulation most calculations differ from the ones applied under DPD and thus earlier conclusions cannot be used. In particular for acute toxicity, skin and eye irritation and reproductive toxicity the concentration limits are now stricter in certain cases. Therefore, a mixture formerly classified under DPD might now get a more severe classification. Also, even if a mixture is not classified under DPD, it may be classified under CLP. You need to check this carefully.

Notes and Tips on hazard types

Environmental hazards

The environmental hazards currently include only the class 'Hazardous to the aquatic environment'. The intrinsic hazard to aquatic organisms is represented by both the acute and long-term hazard and the hazard class is divided accordingly. The acute and the long-term hazard classification categories are applied independently.

Usually, information on the aquatic toxicity of mixtures is not available. However, when aquatic toxicity data on a mixture is available, it can be used for classification. In general, the classification of the component substances needs to be used as the basis for derivation of the correct hazard classification for the final mixture. A weighted summation method is applied, which makes use of multiplying factors (M-factors). The concept of M-factors has been established to give an increased weight to very toxic substances when classifying mixtures and must be set by manufacturers, importers and downstream users for substances classified as Aquatic Acute 1 and/or Aquatic Chronic 1 (see section 1.5.2 of Guidance on the application of CLP criteria).

Importers or formulators are not required to generate new test data for determining the aquatic hazard classification of the mixture.

Notes and Tips on hazard types

Hazardous to the ozone layer

If a mixture contains 0.1 % of a substance which is hazardous to the ozone layer, the mixture itself needs to be classified accordingly.

Properties taken over from DPD, to be labelled with EUH statements

Certain physical and health properties that were not included in GHS were taken over from DPD into CLP. These properties and the respective EUH statements are listed in Annex II to CLP, PART 1: SUPPLEMENTAL HAZARD INFORMATION. These properties must not be forgotten in the assessment of hazards.