consilab
Gesellschaft für Anlagensicherheit
Höchst zuverlässig.

consiLetter No. 11
February 2015

Classification according to REACH and CLP/GHS - flammability (flash point)

According to Annex VII of the REACH Regulation (EC) No. 1907/2006, determination of the physiochemical substance properties using the A.9. method described in the Regulation (EC) No. 440/2008, or according to OECD guidelines, is required to receive approval for and to register chemicals with the EU chemical agency ECHA. This regulation and the guidelines describe the performance of tests or indicate the corresponding standards; however, they do not contain instructions for classification based on the results.

The hitherto applicable Dangerous Substances Directive 67/548/EEC and the Preparations Directive 1999/45/EC constitute the legal basis for the existing classification and labeling system.

During the course of worldwide harmonization of classification and labeling, the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) was developed by the UN. European implementation of the GHS is described by the CLP Regulation (EC) No. 1272/2008. With the coming into force of this regulation on December 16, 2008, the incremental replacement began of the existing classification and labeling system according to the substances and preparations directives with the CLP. Since December 1, 2010, substances must be classified and labeled as defined in the CLP system, whereby during the transition period up to May 31, 2015, the classification according to Substances Directive 67/548/EEC was still required to be stated in addition, at least in the safety data sheet. As of June 1, 2015, only classification and labeling according to CLP is valid for mixtures.

Between the directives applicable to date and the CLP Regulation, slight variations exist with respect to classification that could change the entire classification system. As an example, the following shows a comparison of classification criteria for the flammability of fluids to be determined using the flash point (Fp.).

Table 1: Substances and Preparations Directive classification

Criteria	**Fp. < 0 °C and initial boiling point ≤ 35 °C**	**Fp. < 21 °C**	**Fp. ≥ 21 °C and ≤ 55 °C**
Hazard symbol	**F+**	**F**	
Hazard designation	**extremely flammable**	**highly flammable**	**flammable**
R- phrases	**R12**	**R11**	**R10**

Table 2: CLP classification

Criteria	**Fp. < 23 °C and Initial boiling point ≤ 35 °C**	**Fp. < 23 °C and Initial boiling point> 35 °C**	**Fp. ≥ 23 °C and ≤ 60 °C**
CLP classification	**Category 1**	**Category 2**	**Category 3**
Signal word	**Danger**	**Danger**	**Warning**
Hazard statement	**H224: Extremely flammable liquid and vapor**	**H225: Highly flammable liquid and vapor**	**H226: Flammable liquid and vapor**

Whereas the previous classification according to the Dangerous Substances Directive provided no way to get out of the classification, the CLP Regulation now opens up this option by introducing the UN L.2 test for “sustained combustion” (UN Recommendations on the Transport of Dangers Goods, Manual of Tests and Criteria, Part III Section 32). If a liquid with a flash point above 35 °C but not more than 60 °C achieves a negative result in this test, it doesn’t need to be classified in Category 3.

Note: Many safety data sheets still include flash point data measured with an open-cup method. GHS and CLP explicitly require measurement with a closed cup. In the laboratories of consilab GmbH, the described tests are performed with a closed cup under GLP conditions.

Your contact: *Frankfurt* *phone: +49(0)69 305 30013* *e-mail: kontakt@consilab.de*
Leverkusen *phone: +49(0)214 2605 56458* *e-mail: kontakt@consilab.de*