

# Peroxygens Sector Group

## To whom it may concern

### Hydrogen Peroxide Classification and Labelling

Hydrogen peroxide is listed in Annex VI of the CLP Regulation (see table below).

Index No.	International Chemical Identification	EC No	CAS No
008-003-00-9	hydrogen peroxide solution ... %	231-765-0	7722-84-1

Classification		Labelling			Specific Conc. Limits, M-factors	Notes
Hazard Class and Category Code(s)	Hazard statement Code(s)	Pictogram, Signal Word Code(s)	Hazard statement Code(s)	Suppl. Hazard statement Code(s)		
Ox. Liq. 1 Acute Tox. 4 * Acute Tox. 4 * Skin Corr. 1A	H271 H332 H302 H314	GHS03 GHS05 GHS07 Dgr	H271 H332 H302 H314		Ox. Liq. 1; H271: C ≥ 70 %**** Ox. Liq. 2; H272: 50 % ≤ C < 70 % ***** Skin Corr. 1A; H314: C ≥ 70 % Skin Corr. 1B; H314: 50 % ≤ C < 70 % Skin Irrit. 2; H315: 35 % ≤ C < 50 % Eye Dam. 1; H318: 8 % ≤ C < 50 % Eye Irrit. 2; H319: 5 % ≤ C < 8 % STOT SE 3; H335; C ≥ 35 %	B

#### Acute oral toxicity

An acute oral toxicity study with a 35 % aqueous solution and rats has been done by FMC (1983). This study was reliable without restriction and it resulted in LD50 values of 1193 (males) and 1270 mg/kg bw (females), respectively. The average LD50 value is 1232 mg/kg bw and this value results in an ATE value of the substance hydrogen peroxide of 431 mg/kg bw. This ATE value of 431 mg/kg bw can be used for the classification of mixtures which contain the ingredient hydrogen peroxide in an aqueous solution.

Based on the ATE value of 431 mg/kg bw, aqueous hydrogen peroxide solutions (containing only hydrogen peroxide and water) are classified in category 4 for acute oral toxicity if the concentration of hydrogen peroxide is equal to or higher than 22 %. This is based on the formula included in section 3.1.3.6.1 of the CLP Regulation.



# Peroxygens Sector Group

## Acute inhalation toxicity

There are no reliable acute inhalation toxicity studies available which show that hydrogen peroxide should be classified. However based on Annex VI of the CLP Regulation hydrogen peroxide has a minimum classification in category 4 for acute inhalation toxicity. For this reason it is proposed to use the ATE values mentioned in Table 3.1.2 of the CLP Regulation for the classification of mixtures which contain hydrogen peroxide. For acute toxicity category 4 the ATE value is 11 mg/l for a vapour of hydrogen peroxide, while the ATE is 1,5 mg/l for a dust/mist of hydrogen peroxide.

Based on the ATE value of 1,5 mg/l, aqueous hydrogen peroxide solutions (containing only hydrogen peroxide and water) are classified in category 4 for acute inhalation toxicity if the concentration of hydrogen peroxide is equal to or higher than 30 %. This is based on the formula included in section 3.1.3.6.1 of the CLP Regulation.

## Environment

Regulation 286/2011<sup>1</sup> (amending CLP Regulation 1272/2008) modifies the criteria for classification of long-term hazards to the environment. Existing data on chronic aquatic toxicity for hydrogen peroxide<sup>2</sup> indicate that the substance hydrogen peroxide should be classified as aquatic chronic category 3. To determine if a mixture, which contains the substance hydrogen peroxide, should be classified as aquatic chronic category 3, the classification criteria of chapter 4.1.3 of Regulation 286/2011 should be used.

Aqueous hydrogen peroxide solutions (containing only hydrogen peroxide and water) are classified in category 3 for chronic aquatic toxicity if the concentration of hydrogen peroxide is equal to or higher than 63 %. This is based on the bridging principles of the CLP Regulation.

## Classification of hydrogen peroxide solutions manufactured by CEFIC members

All aqueous hydrogen peroxide solutions, manufactured by the members of the Cefic Peroxygens Sector Group, will be classified and labelled according to the Annex of this document (modification of the existing Annex VI of Regulation 1272/2008).

For additional information, please contact Maria Ruiz-Cuevas, [MCU@cefic.be](mailto:MCU@cefic.be)

Brussels, August 2015

---







<sup>1</sup> Commission Regulation (EU) No 286/2011 of 10 March 2011 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, OJ L 83/1, 30.03.2011.

<sup>2</sup> Chronic toxicity of hydrogen peroxide to *Daphnia magna* in a continuous exposure, flow-through test system, Meinertz JR, Greseth SL, Gaikowski MP and Schmid t LJ, Science of the Total Environment 392 (2008), pp. 225-232. NOEC= 0.63 mg/L.



# Peroxygens Sector Group

## Annex: Classification and Labelling of aqueous Hydrogen Peroxide solutions according to CLP Regulation

$C \geq 70\%$	Oxidizing liquid 1: H271 (May cause fire or explosion; strong oxidizer). Skin corrosive 1A: H314 (Causes severe skin burns and eye damage). Eye Damage 1: H318 (Causes serious eye damage). STOT single exposure 3: H335 (May cause respiratory irritation). Acute Toxic 4: H302 (Harmful if swallowed). Acute Toxic 4: H332 (Harmful if inhaled). Chronic aquatic toxicity 3: H412 (Harmful to aquatic life with long lasting effects).	 Danger
$63\% \leq C < 70\%$	Oxidizing liquid 2: H272 (May intensify fire; oxidiser). Skin corrosive 1B: H314 (Causes severe skin burns and eye damage). Eye Damage 1: H318 (Causes serious eye damage). STOT single exposure 3: H335 (May cause respiratory irritation). Acute Toxic 4: H302 (Harmful if swallowed). Acute Toxic 4: H332 (Harmful if inhaled). Chronic aquatic toxicity 3: H412 (Harmful to aquatic life with long lasting effects).	 Danger
$50\% \leq C < 63\%$	Oxidizing liquid 2: H272 (May intensify fire; oxidiser). Skin corrosive 1B: H314 (Causes severe skin burns and eye damage). Eye Damage 1: H318 (Causes serious eye damage). STOT single exposure 3: H335 (May cause respiratory irritation). Acute Toxic 4: H302 (Harmful if swallowed). Acute Toxic 4: H332 (Harmful if inhaled).	 Danger
$35\% \leq C < 50\%$	Skin irritant 2: H315 (Causes skin irritation). Eye Damage 1: H318 (Causes serious eye damage). STOT single exposure 3: H335 (May cause respiratory irritation). Acute Toxic 4: H302 (Harmful if swallowed). Acute Toxic 4: H332 (Harmful if inhaled).	 Danger
$30\% \leq C < 35\%$	Eye Damage 1: H318 (Causes serious eye damage). Acute Toxic 4: H302 (Harmful if swallowed). Acute Toxic 4: H332 (Harmful if inhaled).	 Danger
$22\% \leq C < 30\%$	Eye Damage 1: H318 (Causes serious eye damage). Acute Toxic 4: H302 (Harmful if swallowed).	 Danger
$8\% \leq C < 22\%$	Eye Damage 1: H318 (Causes serious eye damage).	 Danger
$5\% \leq C < 8\%$	Eye Irritant 2 : H319 (Causes serious eye irritation).	 Warning
$C < 5\%$	Not hazardous.	

Remark: According to CLP Regulation, precautionary statements shall be selected in accordance with the criteria laid down in Part 1 of Annex IV taking into account the hazard statements and the intended or identified use or uses of the substance or mixture. Precautionary statements are therefore not harmonised.

