



**Substance name: Potassium hydroxyoctaoxodizincatedichromate(1-)**  
**EC number: 234-329-8**  
**CAS number: 11103-86-9**

**MEMBER STATE COMMITTEE  
SUPPORT DOCUMENT FOR IDENTIFICATION OF  
POTASSIUM  
HYDROXYOCTAOXODIZINCATEDICHROMATE(1-)  
AS A SUBSTANCE OF VERY HIGH CONCERN BECAUSE OF ITS  
CMR<sup>1</sup> PROPERTIES**

**Adopted on 24 November 2011**

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<sup>1</sup> CMR means carcinogenic, mutagenic or toxic for reproduction

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**Substance Name:** Potassium hydroxyoctaoxodizincatedichromate(1-)

**EC Number(s):** 234-329-8

**CAS Number(s):** 11103-86-9

- The substance is identified as a substance meeting the criteria of Article 57 (a) of Regulation (EC) 1907/2006 (REACH) owing to its classification as carcinogen category 1A<sup>2</sup> which corresponds to classification as carcinogen category 1<sup>3</sup>.

### **Summary of how the substance meets the Carcinogen 1A criteria**

Potassium hydroxyoctaoxodizincatedichromate(1-) is covered by index number 024-007-00-3 ‘zinc chromates including zinc potassium chromate’ of Regulation (EC) No 1272/2008 and classified in Annex VI, part 3, Table 3.1 (the list of harmonised classification and labelling of hazardous substances) as carcinogen, Carc. 1A (H350: “May cause cancer”). The corresponding classification in Annex VI, part 3, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) No 1272/2008 is carcinogen, Carc. Cat. 1 (R45: “May cause cancer”).

Therefore, this classification of potassium hydroxyoctaoxodizincatedichromate(1-) in Regulation (EC) No 1272/2008 shows that it meets the criteria for classification as carcinogen in accordance with Article 57 (a) of REACH.

**Registration dossier of the substance submitted: yes**

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<sup>2</sup> Classification in accordance with Regulation (EC) No 1272/2008 Annex VI, part 3, Table 3.1 List of harmonised classification and labelling of hazardous substances.

<sup>3</sup> Classification in accordance with Regulation (EC) No 1272/2008, Annex VI, part 3, Table 3.2 List of harmonised classification and labelling of hazardous substances (from Annex I to Council Directive 67/548/EEC).

## JUSTIFICATION

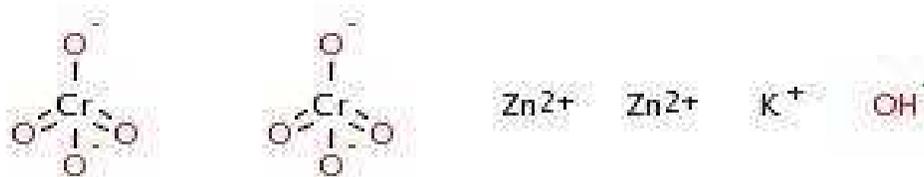
### 1 IDENTITY OF THE SUBSTANCE AND PHYSICAL AND CHEMICAL PROPERTIES

#### 1.1 Name and other identifiers of the substance

**Table 1: Substance identity**

<b>EC number:</b>	234-329-8
<b>EC name:</b>	Potassium hydroxyoctaoxodizincatedichromate(1-)
<b>CAS number (EC inventory):</b>	11103-86-9
<b>CAS name:</b>	Potassium zinc chromate hydroxide (KZn <sub>2</sub> (CrO <sub>4</sub> ) <sub>2</sub> (OH))
<b>IUPAC name:</b>	
<b>Index number in Annex VI of the CLP Regulation:</b>	024-007-00-3
<b>Molecular formula:</b>	Cr <sub>2</sub> HO <sub>9</sub> Zn <sub>2</sub> .K
<b>Molecular weight:</b>	418.9
<b>Synonyms</b>	Zinc potassium chromate ; Potassium zinc chromate hydroxide; Chromate(1-) hydroxyoctaoxodizincatedi-, potassium; Potassium dizinc salt; Potassium zinc hydroxide dioxido(dioxo)chromium; Chromic acid, potassium zinc salt (2:2:1); C.I. Pigment yellow 36:1; Buttercup yellow; Citron yellow; Zinc yellow
<b>Main trade names</b>	Zinc chromate CZ20/CZ40; Zinc chromate CZ40, Habicor ZPC 2266 AT, Habicor ZPC 2267 AT

**Structural formula:**



**1.2 Composition of the substance**

**Name:** Potassium hydroxyoctaoxodizincatedichromate(1-)

**Description:** The substance potassium hydroxyoctaoxodizincatedichromate(1-) is a mono constituent inorganic substance having the following characteristics and physical-chemical properties.

**Degree of purity:** 97.0 % (w/w)

**Table 2: Constituents**

Constituent	Typical concentration	Concentration range	Remarks
Potassium hydroxyoctaoxodizincatedichromate(1-) EC n°: 234-329-8	ca. 97.0 % (w/w)		Source: MSDS Zinc chromate CZ20/CZ/40 <a href="http://www.sncz.net">www.sncz.net</a>

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**Table 3: Impurities (depending on the manufacturers or importers)**

Impurities	Typical concentration	Concentration range	Remarks
Barium chromate EC n°: 233-660-5	2.9 % (w/w)	/	Source: MSDS Zinc chromate CZ20/CZ/40 <a href="http://www.sncz.net">www.sncz.net</a>
Strontium chromate EC n°: 232-142-6	0.1 % (w/w)	/	Source: MSDS Zinc chromate CZ20/CZ/40 <a href="http://www.sncz.net">www.sncz.net</a>

**Table 4: Additives**

Additives	Typical concentration	Concentration range	Remarks
<i>none</i>	/	/	/

### 1.3 Physico-chemical properties

**Table 5: Overview of physicochemical properties**

Property	Value	Remarks
Physical state at 20°C and 101.3 kPa	Green-yellow powder, odourless	
Melting/freezing point	The substance doesn't melt but decomposes at 500 °C	
Boiling point	n/a	
Vapour pressure	n/a	
Relative density	3.5 g/cm <sup>3</sup> at 20 °C	
Water solubility	0.5 to 1.5 g/L at 20°C	Very soluble in acids and ammonia salts. Slightly soluble in alkalines.
Partition coefficient n-octanol/water (log value)	n/a inorganic compound	
Dissociation constant	n/a	
Oxidising properties	The substance is not an oxidising solid according to the CLP.	
Granulometry	Particle size mass median diameter is 2.41 µm	

## 2 HARMONISED CLASSIFICATION AND LABELLING

Potassium hydroxyoctaoxodizincatedichromate(1-) is covered by index number 024-007-00-3 ‘zinc chromates including zinc potassium chromate’ in Annex VI, part 3, Tables 3.1 and 3.2 of Regulation (EC) No 1272/2008 as follows:

**Table 6: Classification according to part 3 of Annex VI, Table 3.1 (list of harmonised classification and labelling of hazardous substances) of Regulation (EC) No 1272/2008**

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)		
Carc. 1A Acute Tox. 4* Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H350 H302 H317 H400 H410	GHS08 GHS07 GHS09 Dgr	H350 H302 H317 H410		A
<p><u>Key:</u>            Carc. 1 A: Carcinogenicity            Acute Tox. 2, Tox. 3, Tox. 4: Acute toxicity            Skin Sens.1: Skin sensitization            Aquatic Acute 1, Aquatic Chronic 1: Hazardous to the aquatic environment            H302: Harmful if swallowed            H317: May cause an allergic skin reaction            H350: May cause cancer            H400: Very toxic to aquatic life            H410: Very toxic to aquatic life with long lasting effects            GHS08: Health hazard            GHS07: Exclamation mark            GHS09: Environment            Dgr: Danger</p> <p>Note A :            Without prejudice to Article 17(2) of Regulation (EC) No 1272/2008, the name of the substance must appear on the label in the form of one of the designations given in Part 3 of Annex VI to that Regulation.            In that Part, use is sometimes made of a general description such as “... compounds” or “... salts”. In this case, the supplier who places such a substance on the market is required to state on the label the correct name, due account being taken of Section 1.1.1.4 of Annex VI to Regulation (EC) No 1272/2008.            In accordance with Regulation (EC) No 1272/2008, where a substance is included in Part 3 of Annex VI to that Regulation, the labelling elements relevant for each specific classification covered by the entry in that Part shall be included in the label, together with the applicable label elements for any other classification not covered by that entry, and any other applicable label elements in accordance with Article 17 of that Regulation.            For substances belonging to one particular group of substances included in Part 3 of Annex VI to Regulation (EC) No 1272/2008, the labelling elements relevant for each specific classification covered by the entry in that Part shall be included in the label, together with the applicable label elements for any other classification not covered by that entry, and any other applicable label elements in accordance with Article 17 of that Regulation.            For substances belonging to more than one group of substances included in Part 3 of Annex VI to Regulation (EC) No 1272/2008, the labelling elements relevant for each specific classification covered by both entries in that Part shall be included in the label, together with the applicable label elements for any other classification not covered by that entry, and any other applicable label elements in accordance with Article 17 of that Regulation. In cases where two different classifications are given in the two entries for the same hazard class or differentiation, the classification reflecting the more severe classification shall be used.’</p>					

**Table 7: Classification according to part 3 of Annex VI, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Council Directive 67/548/EEC) of Regulation (EC) No 1272/2008**

Classification	Labelling	Concentration Limits	Notes
Carc. Cat. 1; R45 Xn; R22 R43 N; R50-53	T; N R: 45-22-43-50/53 S: 53-45-60-61		AE
<p><u>Key:</u>            Carc.: Carcinogenic            Xn: Harmful            N: Dangerous for the environment            R22: Harmful if swallowed            R43: May cause sensitization skin contact            R45: May cause cancer            R50-53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment            S53: Avoid exposure - obtain special instructions before use            S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)            S60: This material and its container must be disposed of as hazardous waste            S61: Avoid release to the environment. Refer to special instructions/Safety data sheets</p> <p>Note A:            The name of the substance must appear on the label in the form of one of the designations given in Annex I (see Article 23(2)(a)). In Annex I, use is sometimes made of a general description such as "... compounds" or "... salts". In this case, the manufacturer or any other person who markets such a substance is required to state on the label the correct name, due account being taken of the chapter entitled "Nomenclature" of the Foreword: Example: for BeCl<sub>2</sub> (Einecs No 232-116-4): beryllium chloride.            The Directive also requires that the symbols, indications of danger, R- and S-phrases to be used for each substance shall be those shown in Annex I (Article 23(2)(c), (d) and (e)). For substances belonging to one particular group of substances included in Annex I, the symbols, indications of danger, R and S-phrases to be used for each substance shall be those shown in the appropriate entry in Annex I. For substances belonging to more than one group of substances included in Annex I, the symbols, indications of danger, R and S-phrases to be used for each substance shall be those shown in both the appropriate entries given in Annex I. In cases where two different classifications are given in the two entries for the same hazard, the classification reflecting the more severe hazard classification is used.</p> <p>Note E:            Substances with specific effects on human health that are classified as carcinogenic, mutagenic and/or toxic for reproduction in categories 1 or 2 are ascribed Note E if they are also classified as very toxic (T+), toxic (T) or harmful (Xn). For these substances, the risk phrases R20, R21, R22, R23, R24, R25, R26, R27, R28, R39, R68 (harmful), R48 and R65 and all combinations of these risk phrases shall be preceded by the word 'Also'.</p>			

### **3 ENVIRONMENTAL FATE PROPERTIES**

*Not relevant for the identification of the substance as SVHC in accordance with Article 57(a).*

### **4 HUMAN HEALTH HAZARD ASSESSMENT**

Contrary to five other hexavalent chromium compounds (potassium dichromate, ammonium dichromate, sodium chromate, chromium trioxide, and sodium dichromate) potassium hydroxyoctaoxodizincatedichromate(1-) was not placed on the third list of substances for assessment within the European Union's (EU) Existing Substances Regulation (ESR) 793/93 and consequently was not subjected to a human risk assessment.

### **5 ENVIRONMENTAL HAZARD ASSESSMENT**

*Not relevant for the identification of the substance as SVHC in accordance with Article 57(a).*

### **6 CONCLUSIONS ON THE SVHC PROPERTIES**

#### **6.1 PBT, vPvB assessment**

*Not relevant for the identification of the substance as SVHC in accordance with Article 57 (a).*

#### **6.2 CMR assessment**

Potassium hydroxyoctaoxodizincatedichromate(1-) is covered by index number 024-007-00-3 'zinc chromates including zinc potassium chromate' of Regulation (EC) No 1272/2008 and classified in Annex VI, part 3, Table 3.1 (the list of harmonised classification and labelling of hazardous substances) as carcinogen, Carc. 1A (H350: "May cause cancer"). The corresponding classification in Annex VI, part 3, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) No 1272/2008 is carcinogen, Carc. Cat. 1 (R45: "May cause cancer").

Therefore, this classification of potassium hydroxyoctaoxodizincatedichromate(1-) in Regulation (EC) No 1272/2008 shows that it meets the criteria for classification as carcinogen in accordance with Article 57 (a) of REACH.

#### **6.3 Substances of equivalent level of concern assessment.**

*Not relevant for the identification of the substance as SVHC in accordance with Article 57 (a).*

## **7 REFERENCES**

EU, 2006. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

EU, 2007. Corrigendum to Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. Official Journal of the European Union, L136: 3-280.

EU, 2009. Regulation (EC) No 552/2009 of 22 June 2009 amending Regulation (EC) No 1907/2006 as regards of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards Annex XVII. Official Journal of the European Union, L164: 7-31.

EU, 2008. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006