

GHS Classification

ID737

Zinc oxide

CAS 1314-13-2

Date Classified: Apr. 20, 2006 (Environmental Hazards: Mar. 31, 2006)

Physical Hazards

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Explosives	Not applicable	-	-	-	There are no chemical groups associated with explosive properties present in the molecules.
2 Flammable gases	Not applicable	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Not applicable	-	-	-	Solid (GHS definition)
7 Flammable solids	Not classified	-	-	-	Non-combustible substance
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	Non-combustible
11 Self-heating substances and mixtures	Not classified	-	-	-	Not combustible
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Not classified because of a water-insoluble substance practically
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not classified	-	-	-	It reacts at a high temperature with metals such as magnesium and aluminum with a higher ionization tendency (ICSC (2004), but does not meet the definition of oxidativity.
15 Organic peroxides	Not applicable	-	-	-	Inorganic substance
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to solid substances are not available.

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Not classified	-	-	-	Not classified because of SPECIES: Rat; ENDPOINT: LD50; >5000 mg/kg; REFERENCE SOURCE: EU-RAR 43 (2004)
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: dust, mist)	Category 5	-	Warning	May be harmful if inhaled	The vapor pressure around room temperature is very low. Since it was data of 5.7 or more mg/L in the rat (EU-RAR 43 (2004)), it was set as category 5.
2 Skin corrosion / irritation	Not classified	-	-	-	Since the experiment of the rabbit quoted shows no stimulation as a result (ACGIH (2003) and EU-RAR 43 (2004)), it was classified as "out of Category".
3 Serious eye damage / eye irritation	Not classified	-	-	-	In the report of three affairs currently recorded and selected by EU-RAR (2004), two affairs had a very slight stimulus and one affair did not stimulate. And EU-RAR (2004) had judged no stimulating. So it was set as "Outside of Category ."
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	Since there is no data, respiratory sensitization cannot be classified. Skin sensitization was put outside of the division according to the comprehensive judgment of EU-RAR (2004).
5 Germ cell mutagenicity	Classification not possible	-	-	-	In the result of the in vivo chromosomal aberration test it gave positive although it was doubtful, and for the in vitro results we found both positive results and negative results. We have no enough data for which we can judge.
6 Carcinogenicity	Not classified	-	-	-	U.S. EPA is considering it as Group D. Since there was nothing that suggests carcinogenicity also to an animal data, it considered as "Category Outside."
7 Toxic to reproduction	Not classified	-	-	-	Not classified following to the overall judgment (EU-RAR, 2004)
8 Specific target organs/systemic toxicity following single exposure	Category 1 (inhalation, systemic toxicity)	Health hazard	Danger	Cause damage to organs (inhalation, systemic toxicity)	Since producing metal FUMU heat by inhalations of fine dusts was known, it is classified into "Category 1." Respiratory irritation is not acknowledged (EU-RAR 43 (2004)).

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (inhalation, lung)	Health hazard	Danger	Causes damage to organs (inhalation, lung) through prolonged or repeated exposure	Since the effect on lungs was seen in repetitive inhalation exposure to the guinea pigs and the rat, it was classified into "Category 1."
10	Aspiration hazard	Classification not possible	-	-	-	No data available

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification	
11	Hazardous to the aquatic environment (acute)	Category 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 72-hour EC50=0.17mg/L (zinc-oxide concentration equivalent: 0.21mg/L) of algae (Selenastrum) (EHC221, 2001).
11	Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Classified into Category 1, since acute toxicity was Category 1, and it is a metallic compound, behavior in water is unknown, though less bioaccumulative (BCF=217 (existing chemical safety inspections data)).