GHS Classification

ID813 Lithium hydroxide monohydrate

CAS 1310-66-3 Date Classified: Jun. 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	–	–	–	Non-flammable materials. Although it absorbs moisture and generates heat from air, it does not result in ignition.
12	Substances and mixtures, which in contact with water, emit flammable gases	Not classified	–	–	–	If water is contacted, it will react violently, but what is generated is heat of solution and flammable gases does not occur. (GESTIS (2006))
13	Oxidizing liquids	Not applicable	–	–	–	Solid (GHS definition)
14	Oxidizing solids	Not classified	–	–	–	Although it contains oxygen, lithium is a stable metal in monovalence, and lithium hydroxide does not give oxygen to other substances generally.
15	Organic peroxides	Not applicable	–	–	–	Inorganic substance
16	Corrosive to metals	Classification not possible	–	–	–	Hommmel has a description that "Since aluminum and zinc receive corrosive effects, it is not suitable as a container. The corrosive effects becomes strong remarkably, when moisture or waters exists. Steels, stainless steels, glass, ceramics and many synthetics are durable as a container. " However, the corrosion velocity data against aluminum is not found out and it cannot be classified. Category 1 is presumed.

Health Hazards

	Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	Category 3 based on SPECIES: Rat; ENDPOINT: LD50;:210mg/kg; REFERENCE SOURCE: RTECS (2000)
1	Acute toxicity (dermal)	Classification not possible	–	–	–	There is no data, so it cannot be classified. It is a strong corrosive substance and an experiment of dermal absorption exposure cannot be performed.
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Solid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Classification not possible	–	–	–	It is a nonvolarility solid and inhalation exposure test with vapor cannot be done.
1	Acute toxicity (inhalation: dust, mist)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	Category 3 because of SPECIES: Rat; ENDPOINT: LC50; VALUE: 0.96mg/L/4H
2	Skin corrosion / irritation	Category 1B	Corrosion	Danger	Causes severe skin burns and eye damage	The data of the animal examination was not able to be found out. But description of each collections of hazard data, such as ICSC (1998), HSFS (2004), and GESTIS (2006), had expression of "causing a burn on the skin,", and it was set as Category 1. It is set as a class 8 and PG II in the U.N. dangerous object shipping regulations. It is set to Category1B for the purpose of transportation.
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Although the animal data was not able to be found out, collections of hazard data (such as ICSC (1998) and GESTIS (2006)), have description "severe burns is caused." Since it was also set as Category 1 in skin corrosivity, it was set as "Category 1".
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	(Respiratory sensitization)–; (Skin sensitization)–	(Respiratory sensitization)–; (Skin sensitization)–	(Respiratory sensitization)–; (Skin sensitization)–	There is no information and we could not classify it. It is alkaline metal hydroxide and it is converted into salt in the body. We think that it has no any sensitizing property.
5	Germ cell mutagenicity	Classification not possible	–	–	–	Classification not possible due to lack of data
6	Carcinogenicity	Classification not possible	–	–	–	Classification not possible due to lack of data
7	Toxic to reproduction	Classification not possible	–	–	–	Classification not possible due to lack of data

8	Specific target organs/systemic toxicity following single exposure	Category 1 (inhalation, respiratory)	Health hazard	Danger	Cause damage to organs (inhalation, respiratory)	ICSC (1998), HSFS (2004), etc. have descriptions about respiratory irritation and lung edema. Therefore we adopted "inhalation, respiratory system". Although they are the priority 2 literature, we classified it into "Category 1" because they have descriptions that the characteristic within the guidance value to Category 1 was found in animal experiments.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (inhalation, respiratory organs); Category 2 (oral, liver, hematopoietic system)	Health hazard	Danger; Warning	Causes damage to organs (inhalation, respiratory organs) through prolonged or repeated exposure; May cause damage to organs (oral, liver, hematopoietic system) through prolonged or	In the animal experiment, the effects on the respiratory system was seen within the guidance value of Category 1 (RTECS (2000)). Moreover, since the bronchitis accompanied by a cough, inflammation, and respiratory distress was indicated in HSFS (2004), it was classified into "Category 1 (inhalation and respiratory system)." Moreover, the effects on liver and the hematopoietic systems in oral administration at very lower than the guidance value of Category 1 are described (RTECS (2000)), but it adopted as "Category 2 (oral, liver, hematopoietic systems)" since there was doubt of error in inputting the unit of RTECS.
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)	Classification not possible	–	–	–	No data available
11	Hazardous to the aquatic environment (chronic)	Classification not possible	–	–	–	No data available.