



Respiratory or skin sensitization : Not classified.  
Germ cell mutagenicity : Not classified.  
Carcinogenicity : Not classified.  
Reproductive toxicity : Not classified.  
Specific target organ systemic toxicity (single exposure)  
: Category1.  
Specific target organ systemic toxicity (repeated exposure)  
: Not classified.  
Aspiration hazard : Not classified.

#### ENVIRONMENTAL HAZARDS

Hazardous to the aquatic environment (acute hazard) : Not classified.  
Hazardous to the aquatic environment (chronic hazard) : Not classified.

#### GHS LABEL MARK

Pictogram or symbol :



Signal word : Danger

HAZARD INFORMATION : Eye irritancy.  
Causes damage to organs (respiratory apparatus).  
May cause damage to organs through prolonged or repeated exposure (lung).  
Skin irritancy.  
There is a possibility of stimulating the respiratory organ when dust is generated, by dryness.  
Weak stimulativeness may be felt to the skin and an eye.

#### CAUTIONS

Prevention measure : Do not eat, drink or smoke when using this product.

Use only in a well-ventilated area.

Do not breathe dust.

After handling, the hand is washed well.

Storage : Keep in the airtight container.

Disposal : Dispose of contents and containers appropriately in accordance with related regulations.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Mixture

Name	Chemical formula	CAS NO.
Alumina	$A\ 1\ 2\ O\ 3$	1344-28-1
Water	$H\ 2\ O$	7732-18-5

### 4. FIRST-AID MEASURES

Inhalation : Excessive exposure may cause cough, mucus production, shortness of breath.

Remove victim to fresh air immediately. Obtain medical attention if breathing difficulty persists beyond 15 minutes.

Ingestion : This material is not expected to be an ingestion hazard; no known human or animal health effects. If swallowed, obtain medical attention.

Eyes contact : Safety goggles recommended. May cause eye irritation. Rinse eyes with water for 20-30 minutes, retracting eyelids often. Obtain medical attention if pain or redness persist.

Skin contact : Rubber gloves recommended. May cause drying of skin. Otherwise, this material is not expected to be a skin irritant; no known human or animal health effects data.

Expected acute and late symptom : cough, eyes redden, skin redden

### 5. FIRE-FIGHTING MEASURES

Extinguishing media : Incombustible(normal condition).

Prohibited extinguishing media : No data.

Hazardous combustion product : No data.

Particular fire fighting : Move containers from fire area.

If it is not possible to move the container, apply water to cool surrounding areas.

Protection fire fighters : Wear protective equipment to avoid contact with body or inhalation of mist or dust.

Use self-contained breathing apparatus to avoid dust or fumes generated during fire fighting.

### 6. ACCIDENTAL RELEASE MEASURES

Cautions for persons : In the case of indoor, perform enough ventilation until processing is over.

Declare off-limits other than the person concerned.

Wear appropriate protective equipment at work.

Avoid contact with skin and inhalation of dust.

Work from windward, and let the safe place evacuate in people of the lee.

Cautions for environment : Protect a product from flowing out in rivers, because do not affect the environment.

Removal method : Scoop up or absorb material.

Disposal should be in accordance with all applicable local, state and federal laws and regulations. Consult your attorney or appropriate regulatory officials for information regarding disposal requirements.

Prevent dust being generated by dryness.

## 7. HANDLING AND STORAGE

Handling : Use with adequate ventilation to meet exposure limits as listed in Section 8. Selection of appropriate respirator(dust respirator) should be based on the actual or potential airborne contaminants and their concentrations present. Use of protective gloves and eyewear is recommended to avoid irritation to the skin and eyes.

Storage : Keep the suspension in its original packing.  
In case of settlement, the powder can easily be dispersed by simple agitation.  
Keep in the dark and cool place(0~40°C) in its airtight container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters : No data.

Limit value : No data.

### ※Alumina

Limit value	: ACGIH (2005)	TLV-TWA	10 mg/m <sup>3</sup> (Total)
			5 mg/m <sup>3</sup> (Respirable)
	OSHA	PEL-TWA	10 mg/m <sup>3</sup> (Total)
			5 mg/m <sup>3</sup> (Respirable)

※Potassium Hydroxide

Limit value : ACGIH (2005) TLV-TWA C 2 mg/m<sup>3</sup>

Personal protection equipment

Eyes protection : Safety goggle

Skin protection : Protective cloth and globes

Respiration protection : Dust mask

Hygiene measure : Wash hands after the handling well.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Liquid

Color : White

pH : 11~13

Melting point : 2072°C(Alumina)

Flash point : Incombustible.

Combustibleness : Incombustible.

Explosion range : No data.

Vapor pressure : No data.

Steam density : No data.

Specific gravity : 1.17(product) , 3.9(Alumina)

Solubility : Insoluble in water(Alumina)

Self-ignite point : Incombustible

Decomposition temperature : No data.

Burning quality : Incombustible.

Viscosity : No data.

10. STABILITY AND REACTIVITY

Stability : Stable under normal condition.

Possibility of hazard and toxicity : There is a possibility of reacting to aluminum, titanium, zinc, chromium, and those alloys, and generating hydrogen gas.

Avoid condition : Generation of dust by dryness.

Incompatible material : aluminum, titanium, zinc, chromium, and those alloys

Degraded product of hazard and toxicity : hydrogen gas.

#### 1 1 . TOXICOLOGICAL INFORMATION

Acute toxicity(Oral)	: No Data
	LD <sub>50</sub> ≥ 5000mg/kg (Alumina : rat)
	LD <sub>50</sub> ≥ 5000mg/kg (Potassium Hydroxide : rat : calculated value)
Skin corrosion/irritation	: Category2. Include classification 1B.
Serious eye damage /eye irritation	: Category2B Include classification 1.
Respiratory or skin sensitization	: No data.
Germ cell mutagenicity	: No data.
Carcinogenicity	: No data.
Reproductive toxicity	: No data.
Specific target organ systemic toxicity (single exposure)	: Category1 (respiratory apparatus) Include classification 1.
Specific target organ systemic toxicity (repeated exposure)	: No data.
Aspiration hazard	: No data.

#### 1 2 . ECOLOGICAL INFORMATION

Hazardous to the aquatic environment (acute hazard)	: No data.
Hazardous to the aquatic environment (chronic hazard)	: No data.
Mobility	: Insoluble, settles easily.
Degradation	: Inert mineral product.
Bioaccumulation	: None.
Ecotoxicity	: None.

#### 1 3 . DISPOSAL CONSIDERATIONS

Product	: Can be eliminated with regular industrial washes.
Used packing	: Empty and possibly wash with water before recycling. Pay attention to eventual local regulation.

#### 1 4 . TRANSPORT INFORMATION

International /national regulation	: Not applicable.
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#### 1 5 . REGULATORY INFORMATION

Industrial Safety and Health Act	: Article 57-2 , Appended table 9(Aluminum oxide)
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Pollutant Release and Transfer Register : NA

#### 1 6 . OTHER INFORMATION

This sheet is given in addition to the technical data sheets.

The information contained herein is given in good faith, according to our up-to-date knowledge.

The use of this product for unusual application may possibly present a risk.

The user must know and apply the regulation of his own activity and is responsible for the good use of this product in respect to the statutory information given in this sheet.

Nevertheless, this sheet is not exhaustive and the user must pay attention to other regulations relative to the storage or using of this product.

Information herein is given in good faith as authoritative and valid; however, no warranty, express or implied, can be made.