Potassium Hydroxide Flakes

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Substance name:	Potassium Hydroxide
REACH Reg. No.:	Not available.
CAS No.:	1310-58-3
EC No.:	Not available.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses:	Mainly used in alkaline batteries industry, high-class detergents and cosmetics. Industrial soaps, potassium chemicals, medicine intermediate, synthetic rubber, ABS resin, natural rubber latex, dyestuffs, zymolysis and food additive and so on.
Uses advised against:	Not available.

1.3 Details of the supplier of the SDS

Company name (Manufacturer):	Tianjin Yuanlong Chemical Industry Co., Ltd
Address:	Room 605, Kangning Tower B, Xikang Ave., Heping District, Tianjin, China
Postcode:	300070
E-mail:	info@yuanlongchem.com
Telephone:	+86-22-23528561
Fax:	+86-22-23523959
Emergency telephone number	+86-22-23528561

Section 2: Composition/information on ingredients

2.1 Substance information

Ingredients Name	CAS Number	TWA(mg/m3)	CEIL(mg/m3)	% By Weight or Volume
Potassium Hydroxide	1310-58-3	2	2	≥90 - ≤100%

Section 3: Hazards identification

3.1 Potential Acute Health Effects

Very hazardous in case of skin contact (corrosive, irritant, permeator), eye contact (irritant, corrosive), ingestion, or inhalation. The amount of tissue damage depends on length of contact and the concentration (solutions). Eye contact can result in corneal damage or blindness. Skin contact can produce severe burns with deep ulcerations and permanent scarring. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce pulmonary edema (severe, life threatening lung injury, choking, unconsciousness or death. Exposure of the eye is characterized by irritation or blindness. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Ingestion can result in severe pain, burning of the mouth, throat, esophagus, vomiting, diarrhea, collapse or death.

3.2 Potential Chronic Health Effects

CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

3.3 Other hazards

No information available.

Section 4: First aid measures

4.1 Eye Contact

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

4.2 Skin Contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

4.3Serious Skin Contact

Follow above directions. Flush skin with water for up to 60 minutes. Seek medical attention.

4.4Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

4.5Serious Inhalation

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

4.6Ingestion

Do not induce vomiting. Rinse mouth and give as much water as possible to dilute material. Loosen clothing such as a collar, tie, belt or waistband. If vomiting occurs, have victim lean forward with head down, rinse mouth and administer more water, keeping a clear airway. Seek immediate medical attention.

4.7Serious Ingestion

Follow above directions. Never give anything by mouth to an unconscious person. If victim is not breathing give artificial respiration. Do not use mouth-to mouth method if victim ingested or inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Seek immediate medical attention.

Section 5: Fire-fighting measures

Flammability of the Product	Non-flammable
Auto-Ignition Temperature	Not applicable
Flash Points	Not applicable
Flammable Limits	Not applicable
Products of Combustion	Potassium oxide fumes.
Fire Hazards in Presence of Various Substances	Potassium hydroxide in contact with water and acids may generate enough heat to ignite adjacent combustible materials. Can react with metals such as aluminum, tin, and zinc to form flammable hydrogen gas.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Dry chemical, carbon dioxide, water spray, or alcohol resistant foam. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Wear full chemical protective clothing. if tank, rail car, or tank truck is involved in a fire, isolate for 800 meters (1/2 mile) in all directions. Extinguish fire from maximum distance.

Special Remarks on Fire Hazards	Potassium hydroxide in contact with zinc metal dust will ignite. Under certain conditions of temperature, pressure and state, it can ignite or react violently with acetaldehyde, ally alcohol, allyl chloride, benzene 1,4 diol, chlorinetrifluoride, 1,2 dichloroethylene, nitroethane, nitromethane, nitroparaffins, nitropropane, cinnamaldehyde, 2,2-dichloro-3, 3-dimethylbutane. Phosphorus boiled with potassium hydroxide yields a product that may ignite spontaneously in air. See Section 10- Special Remarks on Reactivity.
Special Remarks on Explosion Hazards	Potassium hydroxide reacts to form explosive products with ammonia and silver nitrate. Benzene extract of allyl benzenesulfonate prepared from allyl alcohol and benzene sulfonyl chloride in presence of aqueous potassium hydroxide may darken and explode. Potassium hydroxide and impure tetrahydrofuran, which can contain peroxides, can cause serious explosions. Dry mixtures of potassium hydroxide and tetrahydroborate liberates hydrogen explosively at 230-270 deg. C.

Section 6: Accidental release measures

6.1 Small Spill

Absorb or cover with dry earth, sand, or other non-combustible material and transfer to waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Flush area with water.

6.2 Large Spill

Evacuate area. Remove all ignition sources and ventilate area. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into surface water, sewers, basements or confined areas; dike if needed. Notify appropriate government, occupational health and safety and environmental authorithies. Neutralize the residue with a dilute solution of acetic acid.
Call fire department immediately.

Section 7: Handling and storage

7.1 Precautions

Use with adequate ventilation. Do not breathe dust. When mixing, never add water to this product.
Instead, always add sodium hydroxide to water and provide agitation.
Use cold water and stir in small amount in slowly. Avoid contact with skin and eyes.

7.2 Storage

Hygroscopic. Keep container tightly closed and dry. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F). Keep away from incompatibles such as oxidizing agents, reducing agents, metals, acids, alkalis, water and organic materials.

Section 8 : Exposure controls/personal protection

8.1 Engineering Controls

Use process enclosures, ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use local exhaust ventilation to keep exposure to airborne contaminants below the exposure limit. Eye wash and safety showers are necessary.

8.2 Personal Protection

Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Face shield. Provide an emergency eye wash and shower station.

8.3 Personal Protection in Case of a Large Spill

Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

8.4 Exposure Limits

STEL: 2 (mg/m3) from ACGIH (TLV) [United States]TWA: 2 CEIL: 2 (mg/m3) from OSHA (PEL) [United States]CEIL: 2 (mg/m3) from NIOSH Consult local authorities for acceptable exposure limits.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state and appearance:	Solid
Odor:	Odorless.
Taste:	Not available.
Color:	White
Molecular Weight:	56.11 g/mole
pH (1% soln/water):	13
Boiling Point:	Decomposition temperature: 13840C
Melting Point:	380°C (716°F)
Critical Temperature:	Not available.
Specific Gravity:	2.044 (Water = 1) at 200C
Vapor Pressure:	Not available.
Vapor Density:	Not available.

Volatility:	Not available.
Odor Threshold:	Not applicable.
Water/Oil Dist. Coeff.:	Not applicable.
Ionicity (in Water):	Not applicable.
Dispersion Properties:	See solubility in water.
Solubility:	Easily soluble in cold water

9.2 Other information

No data available.

Section 10: Stability and reactivity

10.1 Stability

The product is stable under normal conditions.

10.2 Instability Temperature

No decomposition if used and stored according to specifications.

10.3 Incompatibility with various substances

Avoid contact with organic materials, acids, water, flammable liquids, organic halogens, amphoteric metals and nitro compounds. Reactive with oxidizing agents, reducing agents. See Special Remarks on Reactivity.

10.4 Corrosivity

Corrosive to aluminum, tin, zinc, copper and most alloys in which they are present. Corrosive to steel at temperatures above 140^0C.

10.5 Special Remarks on Reactivity

Hygroscopic. Much heat is evolved when solid material is dissolved in water. Therefore cold water and caution must be used for this process. Reactive with water, all mineral acids, all organic acids, aldehydes, carbamates, esters, organic halogens, ketones, acid chlorides, strong bases, oxidizing agents, reducing agents, flammable liquids, powdered metals metals, metal compounds, nitrides, nitriles, nitro compounds, acetic anhydride chlorohydrin, chlorosulfonic acid, ethylene cyanohydrin, glyoxal, hydrosulfuric acid, oleum, propiolactone, acylonitrile, phosphorous pentoxide, chloroethanol, chloroform-methanol, tetrahydroborate, cyanogen azide,1,2,4,5 tetrachlorobenzene, cinnamaldehyde, formaldehyde hydroxide. Produces hydrogen gas when it reacts with sodium tetrahydroborate or certain metals such as aluminum, tin, zinc. Can form spontaneously flammable chemicals upon contact with 1,2-dichloroethylene, trichloroehylene, or tetrachloroethane. Can produce carbon monoxide upon contact with solutions of sugars, such as fructose, lactose.

10.6 Special Remarks on Corrosivity

Very caustic to aluminum and other metals in presence of moisture.

10.7 Polymerization

Will not occur

Section 11: Toxicological information

Routes of Entry:	Absorbed through skin. Eye contact. Inhalation. Ingestion.
Toxicity to Animals:	LD50: 273 mg/kg [Rat] LD50: 500 mg/kg [Rabbit.]
Chronic Effects on Humans:	MUTAGENIC EFFECTS: Mutagenic on mammals under test situations.
Other Toxic Effects on Humans:	Extremely hazardous in case of inhalation (lung corrosive).Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion,
Special Remarks on Toxicity to Animals:	Moderately toxic to aquatic life.
Special Remarks on Chronic Effects on Humans:	May affect genetic material. Investigation as a mutagen (cytogenetic analysis)
Special Remarks on other Toxic Effects on Humans:	Immediately dangerous to life or health at 10 mg/ m3 Acute Potential Health Effects: Skin: May be harmful if absorbed through skin. Causes severe skin irritation and burns. May cause deep penetrating ulcers of the skin. Eyes: Causes severe eye irritation and burns. May cause blindness. Inhalation: Harmful if inhaled. Causes severe irritation of the respiratory tract and mucous membranes with coughing, burns, breathing difficulty, and possible coma. Irritation may lead the chemical pneumonitis and pulmonary edema. Causes chemical burns to the respiratory tract and mucous membranes. Ingestion: May be fatal if swallowed. May cause severe and permanent damage to the digestive tract. Causes severe gastrointestinal tract irritation and burns. May cause perforation of the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause corrosion and permanent destruction of the esophagus and digestive tract.

Section 12: Ecological information

Ecotoxicity:	LC50: 80 mg/L for 96 hr at 25° C [Gambusia affinis]; 165 mg/L for 24 hr [Poecilia reticulata]; 160 mg/L for 24 hr [Carassius auratus]

BOD5 and COD:	Not available.
Products of Biodegradation:	Inorganic, no biodegradation.
Toxicity of the Products of Biodegradation:	Not applicable.
Special Remarks on the Products of Biodegradation:	Not available.

Section 13: Disposal considerations

13.1 Waste Disposal

If this product becomes a waste it could meet the criteria of a hazardous waste as defined by the Resource Conservation Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste. Consult local, state, federal regulations for specific requirements. Harmful to aquatic life at low concentrations. Do not contaminate domestic or irrigation water supplies or bodies of water.

Section 14: Transport information

DOT Classification:	Class 8: Corrosive material
Identification	Potassium hydroxide, solid UN1813 Packing group: II
Special Provisions for Transport	Air transport: IATA/ICAO- Class 8, UN1813, Packing group: II
DOT (Pictograms)	

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

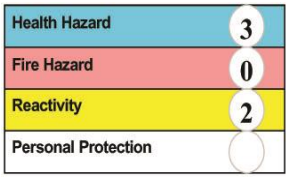
Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances. SARA Section 311 and 312: The product is to be reported under the Immediate (Acute) and Reactive Health Hazards. DSL: This product is on the Domestic Substances List of Canada. On the Air Contaminants Regulatory List and the Registered Pesticide List.
Other Classifications	WHMIS (Canada) CLASS E: Corrosive solid

DSCL (EEC)

R35- Causes severe burns.

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.S28- After contact with skin, wash immediately with plenty of water S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.S38- In case of insufficient ventilation, wear suitable respiratory equipment.S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.)



National Fire Protection Association (U.S.A.)

Health
Flammability
Reactivity
Specific hazard

WHMIS (Canada)(Pictograms):

DSCL (Europe)(Pictograms):

ADR (Europe)(Pictograms):

Protective Equipment:

Gloves.

Synthetic apron.

Vapor and dust respirator. Be sure touse an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

Section 16: Other information

16.1 Revision Information:

Date of the previous revision: Not applicable.
Date of this revision: 1/12/2022
Revision summary: The first new SDS

16.2 Declare to reader

The information in this Safety Data Sheet (SDS) was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable. According to REACH Article 31(5), the SDS shall be supplied in an official language of the Member State(s) where the substance or mixture is placed on the market, unless the recipient Member State(s) concerned provide otherwise. It should also be noted that this SDS is applicable to the countries with English as an official language.