


Safety Data Sheet

Caustic Soda Flakes

Section 1. Chemical Product and Company Identification		Page Number: 1	
Trade Name:	Caustic Soda Flakes	CAS #:	1310-73-2
Synonym:	Caustic Soda Chips, Scales	EC #:	215-185-5
Chemical Name:	Sodium Hydroxide, Solid	Index #:	011-002-00-6
Chemical Formula:	NaOH	UN #:	1823
Molecular Weight:	40	Packaging Group:	II
Chemical Family:	Alkali	EMERGENCYCALL:	+1-703-527-3887
Manufacturer Information:	Tianjin BRG Products Co., Ltd. Address: Kangning Tower B, Xikang Ave., Heping Dist., Tianjin, 300070 Tel #: +86-22-23528561 Fax #: +86-22-23523959 Website: www.brgproduct.com		

Section 2. Hazards Identification	
Pictogram	
Signal word:	Danger
Hazard statements	<p>H314: Causes severe skin burns and eye damage.</p> <p>H290: May be corrosive to metals.</p> <p>H318: Causes serious eye damage.</p> <p>H402: Harmful to aquatic life.</p> <p>These Hazard statements will vary based on the concentration and nature of each chemical</p>
Precautionary statement(s)	
Continued to Next Page	
Caustic Soda Flakes	Page Number: 2

Prevention	Wash thoroughly after handling. Wear protective gloves, protective clothing, eye protection, and face protection.
Response	<p>If swallowed: Rinse mouth. Do NOT induce vomiting.</p> <p>If on Skin (or hair): Remove immediately all contaminated clothing. Rinse skin with water.</p> <p>If inhaled: Remove person to fresh air and keep comfortable for breathing.</p> <p>If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.</p> <p>Wash contaminated clothing before reuse.</p>
Storage	Store locked up.
Disposal:	Dispose of contents and container in accordance with government regulations.
Hazard(s) not otherwise classified (HNOC)	None known
Supplemental information	None

Section 3. Composition and Information on Ingredients

Ingredients Name	CAS Number	TWA(mg/m ³)	CEIL(mg/m ³)	% By Weight or Volume
Sodium Hydroxide	1310-73-2	2	2	100

Section 4. First Aid Measures

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.
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.
Serious Skin Contact:	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Serious 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.
Ingestion:	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Continued to Next Page

Serious Ingestion:	Not available.
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Section 5. Fire and Explosion Data

Flammability of the Product:	Non-flammable
Auto-Ignition Temperature:	Not applicable
Flash Points:	Not applicable
Flammable Limits:	Not applicable
Products of Combustion:	Not applicable
Fire Hazards in Presence of Various Substances:	Not applicable
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:	Not applicable

Special Remarks on Fire Hazards

Sodium hydroxide + zinc metal dust causes ignition of the latter. Under proper conditions of temperature, pressure and state of division, it can ignite or react violently with a cetaldehyde, ally alcohol, allyl chloride, benzene-1,4-diol, chlorine trifluoride, 1,2 dichlorethylene, nitroethane, nitromethane, nitroparaffins, nitropropane, cinnamaldehyde, 2,2-dichloro-3,3-dimethylbutane. Sodium hydroxide in contact with water may generate enough heat to ignite adjacent combustible materials. Phosphorous boiled with NaOH yields mixed phosphines which may ignite spontaneous in air. Sodium hydroxide and cinnamaldehyde + heat may cause ignition

Special Remarks on Explosion Hazards

Sodium hydroxide reacts to form explosive products with ammonia + silver nitrate. Benzene extract of allyl benzenesulfonate prepared from allyl alcohol, and benzene sulfonyl chloride in presence of aquesous sodium hydroxide, under vacuum distillation, residue darkened and exploded. Sodium Hydroxide + impure tetrahydrofuran, which can contain peroxides, can cause serious explosions. Dry mixtures of sodium hydroxide and sodium tetrahydroborate liberate hydrogen explosively at 230-270 °C. Sodium Hydroxide reacts with sodium salt of trichlorophenol + methyl alcohol + trichlorobenzene + heat to cause an explosion.

Section 6. Accidental Release Measures

Small Spill:	Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.
Large Spill:	Corrosive solid. 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 sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Continued to Next Page

Section 7. Handling and Storage

Precautions :	Keep locked up. Keep container dry. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, acids, alkalis, moisture.
Storage:	Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store in high moisture area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls :	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection:	Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
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.
Exposure Limits:	STEL: 2 (mg/m ³) from ACGIH (TLV) [United States]TWA: 2 CEIL: 2 (mg/m ³) from OSHA (PEL) [United States]CEIL: 2 (mg/m ³) from NIOSH Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance:	Solid
Odor:	Odorless.
Taste:	Not available.
Color:	White
Molecular Weight:	40 g/mole
pH (1% soln/water):	13.5 [Basic.]
Boiling Point:	1388°C (2530.4°F)
Melting Point:	323°C (613.4°F)
Heat Capacity:	2.01 J/g.K (25 °C)
Heat of Fusion:	167.5 J/g(25 °C)
Standard Heat of Formation:	10.67 kJ/g(25 °C)
Critical Temperature:	Not available.
Specific Gravity:	1.15 (Water = 1)
Vapor Pressure:	Not applicable.
Vapor Density:	Not applicable.
Volatility:	Not applicable.
Odor Threshold:	Not applicable.
Water/Oil Dist. Coeff.:	Not applicable.
Ionicity (in Water):	Not applicable.

Continued to Next Page

Dispersion Properties:	See solubility in water.
Solubility:	Easily soluble in cold water

Section 10. Stability and Reactivity Data

Stability:	The product is stable.
Instability Temperature:	Not available.
Conditions of Instability:	Incompatible materials, moisture, moist air
Incompatibility with various substances	Highly reactive with metals. Reactive with oxidizing agents, reducing agents, acids, alkalis, moisture.
Corrosivity:	Not available.
Special Remarks on Reactivity	<p>Hygroscopic. Much heat is evolved when solid material is dissolved in water. Therefore cold water and caution must be used for this process. Sodium hydroxide solution and octanol + diborane during a work-up of a reaction mixture of oxime and diborane in tetrahydrofuran is very exothermic, a mild explosion being noted on one occasion.</p> <p>Reactive with water, acids (mineral, non-oxidizing, e.g. hydrochloric, hydrofluoric acid, muriatic acid, phosphoric), acids (mineral, oxidizing e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), aldehydes (e.g. acetaldehyde, acrolein, chloralhydrate, formaldehyde), carbamates (e.g. carbanolate, carbofuran), esters (e.g. butyl acetate, ethyl acetate, propylformate), halogenated organics (dibromoethane, hexachlorobenzene, methyl chloride, trichloroethylene), isocyanates (e.g. methyl isocyanate), ketones (acetone, acetophenone, MEK, MIBK), acid chlorides, strong bases, strong oxidizing agents, strong reducing agents, flammable liquids, powdered metals and metals (i.e. aluminum, tin, zinc, hafnium, Raney nickel), metals (alkali and alkaline e.g. cesium, potassium, sodium), metal compounds (toxic e.g. beryllium, lead acetate, nickel carbonyl, tetraethyl lead), nitrides (e.g. potassium nitride, sodium nitride), nitriles (e.g. acetonitrile, methyl cyanide), nitro compounds (organic e.g. nitrobenzene, nitromethane), acetic anhydride, chlorohydrin, chlorosulfonic acid, ethylene cyanohydrin, glyoxal, hydrosulfuric acid, oleum, propiolactone, acrylonitrile, phosphorus pentoxide, chloroethanol, chloroform-methanol, tetrahydroborate, cyanogen azide, 1,2,4,5-tetrachlorobenzene, cinnamaldehyde. Reacts with formaldehyde hydroxide to yield formic acid, and hydrogen.</p>
Special Remarks on Corrosivity	Very caustic to aluminum and other metals in presence of moisture.
Polymerization	Will not occur

Section 11. Toxicological Information

Routes of Entry:	Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.
Toxicity to Animals:	<p>LD₅₀: 40 mg/kg [Intraperitoneal-Mouse]. 1350 mg/kg [Skin-Rabbit]. 104-340 mg/kg [Oral-Rat].</p> <p>LC₅₀: 45 mg/L.96hr [Fish].</p>

Continued to Next Page

Chronic Effects on Humans:	MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells.
Other Toxic Effects on Humans:	Extremely hazardous in case of inhalation (lung corrosive).Very hazardous in case of skin contact (corrosive, irritant, permeater), of eye contact (corrosive), of ingestion,
Special Remarks on Toxicity to Animals:	Not available.
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:	Acute Potential Health Effects: Skin: May be harmful if absorbed through skin. Causes severe skin irritation and burns. May cause deep enterating ulcers of the
	skin. Eyes: Causes severe eye irritation and burns. May cause chemical conjunctivitis and corneal damage. 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:	Not available.
BOD5 and COD:	Not available.
Products of Biodegradation:	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation:	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation:	Not available.

Section 13. Disposal Considerations	
Waste Disposal:	Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information	
DOT Classification:	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Identification	Sodium hydroxide, solid UN NO: 1823 PG: II
Special Provisions for Transport	Air transport: IATA/ICAO- Class 8, UN 1823, PG II.
Continued to Next Page	

DOT (Pictograms)



Section 15. Regulatory Information

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.

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.):

Health Hazard	3
Fire Hazard	0
Reactivity	2
Personal Protection	j

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

	 <p>Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.</p>
	 <p>Splash goggles.</p>

Section 16. Other Information

Prepared By	<i>Li Lianyou, 2015-4-7</i>
Notice to Reader	All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Tianjin Yuanlong Chemical Industry Co., Ltd., assumes no responsibility for the completeness or accuracy of the information contained herein.

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