MATERIAL SAFETY DATA SHEET

Date Printed: 02/23/2006
Date Updated: 02/02/2006
Version 1.11

Section 1 - Product and Company Information

Product Name	SODIUM HYDROXIDE, REAGENT GRADE, >=98%
Product Number	S5881
Brand	SIAL
Company	World Precision Instruments, Inc.
Street Address	175 Sarasota Center Blvd.
City, State, Zip, Country	Sarasota FL 34240 US
Technical Phone:	941-371-1003
Emergency Phone:	941-371-1003
Fax:	941-377-5428

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
SODIUM HYDROXIDE	1310-73-2	No

Formula	NaOH
Synonyms	Caustic soda * Hydroxyde de sodium (French) * Lewis-red devil lye * Natriumhydroxid (German) * Natriumhydroxyde (Dutch) * Soda lye * Sodio(idrossido di) (Italian) * Sodium hydrate * Sodium hydroxide (ACGIH:OSHA) * Sodium(hydroxyde de) (French) * White caustic
RTECS Number:	WB4900000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Corrosive.
Causes severe burns.
Exothermic in contact with water

HMIS RATING

HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 2
SPECIAL HAZARD(S): Water reactive

NFPA RATING

HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 2
SPECIAL HAZARD(S): Water reactive

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is

conscious. Call a physician immediately.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

EXPLOSION DATA
Sensitivity to Mechanical Impact: Contact with aluminum, tin and zinc liberates hydrogen gas. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts.

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Use extinguishing media appropriate to surrounding fire conditions.
Unsuitable: Do not use water.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Store in a cool dry place.
Incompatible Materials: Do not allow contact with water

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	Ceiling	co2 MG/M3
USA	MSHA Standard	Ceiling	co2 MG/M3
USA	OSHA.	PEL	8H TWA 2 MG/M3
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH	Ceiling	co2 MG/M3/15M

EXPOSURE LIMITS

Country	Source	Type	Value
Poland USA	OSHA.	NDS PEL	2 mg/m3
Poland USA	ACGIH	NDSCh TLV	0.5 MG/M3
			2 mg/m3
Poland		NDSP	1 MG/M3

Section 9 - Physical/Chemical Properties

Appearance
Physical State: Solid
Color: White
Form: Pellets

Property	Value	At Temperature or Pressure
Molecular Weight	40 AMU	
pH	13.0 - 14.0	
BP/BP Range	1,390 °C	
MP/MP Range	318 °C	
Freezing Point	N/A	
Vapor Pressure	< 18 mmHg	20 °C
Vapor Density	> 1 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	2.13 g/cm3	
Bulk Density	2.13 kg/l	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	

Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.
Conditions of Instability: Heat of solution is very high, and with limited amounts of water, violent boiling may occur Absorbs carbon dioxide from air. Never add water to this material, always add this material to water
Conditions to Avoid: Do not allow water to enter container because of violent reaction.
Materials to Avoid: Strong oxidizing agents, Strong acids, Organic materials.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Sodium/sodium oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes burns.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes burns.
Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Inhalation may result in spasm, inflammation and edema of the larynxand bronchi, chemical pneumonitis, and pulmonary edema.

TOXICITY DATA

Intraperitoneal
Mouse
40 MG/KG

LD50

IRRITATION DATA
Skin
Rabbit
500 mg
24 HR
Remarks: Severe irritation effect
Eyes
Rabbit
0.5 mg
24 HR
Remarks: Severe irritation effect

Eyes
Monkey
1 %
24H
Remarks: Severe irritation effect

Skin
Rabbit
500 mg
24H
Remarks: Severe irritation effect

Eyes
Rabbit
0.4 mg
Remarks: Mild irritation effect

Eyes
Rabbit
1 %
Remarks: Severe irritation effect

Eyes
Rabbit
0.05 mg
24H
Remarks: Severe irritation effect

Eyes
Rabbit
1 mg
24H
Remarks: Severe irritation effect

Eyes
Rabbit
1 mg
30S
Remarks: Rinsed

CHRONIC EXPOSURE - MUTAGEN

Species: Hamster
Dose: 10 MMOL/L
Cell Type: lung
Mutation test: Cytogenetic analysis

Species: Hamster

Dose: 16 MMOL/L
Cell Type: ovary
Mutation test: Cytogenetic analysis

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Sodium hydroxide, solid
UN#: 1823
Class: 8
Packing Group: Packing Group II
Hazard Label: Corrosive
PIH: Not PIH

IATA
Proper Shipping Name: Sodium hydroxide, solid
IATA UN Number: 1823
Hazard Class: 8
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: C
Indication of Danger: Corrosive.
R: 35
Risk Statements: Causes severe burns.
S: 26-37/39-45
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Corrosive.
Risk Statements: Causes severe burns.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Exothermic in contact with water

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS

contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.