Hydrazine monohydrate: sc-215152

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Hydrazine monohydrate
Product Number: sc-215152

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800

Emergency: ChemWatch
Within the US & Canada: 877–715–9305
Outside the US & Canada: +800 2436 2255 (1–800-CHEMCALL) or call +613 9573 3112

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Combustible Liquid, Carcinogen, Target Organ Effect, Highly toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Skin sensitiser, Corrosive

Target Organs

Nerves, Blood, Liver, Kidney

GHS Classification

Flammable liquids (Category 4) Acute toxicity, Oral (Category 3) Acute toxicity, Inhalation (Category 3) Acute toxicity, Dermal (Category 3) Skin corrosion (Category 1B) Serious eye damage (Category 1) Skin sensitization (Category 1) Carcinogenicity (Category 1B) Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H227	Combustible liquid
H301 + H311	Toxic if swallowed or in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H331	Toxic if inhaled
H350	May cause cancer
H400	Very toxic to aquatic life

Precautionary statement(s)

P201	Obtain special instructions before use
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P273	Avoid release to the environment
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	2

Physical hazards:	0
NFPA Rating	
Health hazard:	4
Fire:	2
Reactivity Hazard:	0
Potential Health Effects	
Inhalation	May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	Toxic if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Hydrazinium hydroxide
Formula: $N_2H_4 \cdot H_2O$
Molecular Weight: 50.06

CAS-No.	*EC-No.*	*Index-No.*	*Concentration*
Hydrazine monohydrate			
7803-57-8	206-114-9	007-008-00-3	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.
Hazardous combustion products
Hazardous decomposition products formed under fire conditions. – nitrogen oxides (NOx)
Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – No smoking. Take measures to prevent the build up of electrostatic charge.
Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store at room temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Hydrazine monohydrate	7803-57-8	TWA	0.01 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Upper Respiratory Tract cancer Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption			
		TWA	0.1 ppm 0.1 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		TWA	1 ppm 1.3 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Skin designation The value in mg/m3 is approximate.			
		C	0.03 ppm 0.04 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A 2 hour ceiling value			

Personal protective equipment
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin and body protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Liquid	Density	1.032 g/cm3 at 25 °C (77 °F)
pH	no data available	Water solubility	no data available
Boiling point	120.1 °C (248.2 °F) – lit.	Odor	no data available
Flash point	74 °C (165 °F)	Odor Threshold	no data available
Ignition temperature	no data available	Evaporation rate	no data available
Lower explosion limit	no data available	Vapor pressure	7 hPa (5 mmHg) at 25 °C (77 °F)
Upper explosion limit	no data available	Autoignition temperature	no data available
Partition coefficient: n-octanol/water	no data available		
Relative vapor density	no data available		

Melting point/freezing point: Melting point/range: -51.7 °C (-61.1 °F) - lit.

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
no data available
Conditions to avoid
Heat, flames and sparks. Heat, flames and sparks.
Materials to avoid
Oxidizing agents, Oxygen, Copper, Organic materials, Zinc
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions – nitrogen oxides (NOx)
Other decomposition products – no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD50
LD50 Oral – rat – 129 mg/kg
Remarks:
Behavioral: Excitement.
Behavioral: Muscle contraction or spasticity.
Inhalation LC50
Dermal LD50
Other information on acute toxicity
no data available
Skin corrosion/irritation
Extremely corrosive and destructive to tissue.
Serious eye damage/eye irritation
no data available
Respiratory or skin sensitization
May cause allergic skin reaction.
Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.
Carcinogenicity
This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.
Possible human carcinogen

IARC:	2B – Group 2B: Possibly carcinogenic to humans (Hydrazine monohydrate)
NTP:	Reasonably anticipated to be a human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Hydrazine monohydrate)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Teratogenicity

no data available

Specific target organ toxicity – single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity – repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential Health Effects

Inhalation	May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	Toxic if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	Toxic if swallowed.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects

no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish

LC50 – Leuciscus idus melanotus – 0.75 mg/l – 48.0 h

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2030

Class: 8 (6.1)

Packing group: II

Proper shipping name: Hydrazine aqueous solution

Reportable Quantity (RQ): 1 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG
UN number: 2030
Class: 8 (6.1)
Packing group: II
EMS-No: F-A, S-B
Proper shipping name: HYDRAZINE, AQUEOUS SOLUTION
Marine pollutant: No
IATA
UN number: 2030
Class: 8 (6.1)
Packing group: II
Proper shipping name: Hydrazine, aqueous solution
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

OSHA Hazards
Combustible Liquid, Carcinogen, Target Organ Effect, Highly toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Skin sensitiser, Corrosive

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:
Hydrazine monohydrate CAS-No. 7803–57–8

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313: CAS-No.
Hydrazine monohydrate CAS-No. 7803–57–8

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
Hydrazine monohydrate CAS-No. 7803–57–8

Pennsylvania Right To Know Components
Hydrazine monohydrate CAS-No. 7803–57–8

New Jersey Right To Know Components
Hydrazine monohydrate CAS-No. 7803–57–8

California Prop. 65 Components
WARNING! This product contains a chemical known to the State of California to cause cancer.
Hydrazine monohydrate CAS-No. 7803–57–8

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

6/26/2012