



The Power to Question

# SAFETY DATA SHEET

Santa Cruz Biotechnology, Inc.

Revision date 30-Mar-2017

Version 1.6

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

Product Name Ammonium hydroxide solution  
Product Code SC-214535

### Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

### Details of the supplier of the safety data sheet

Santa Cruz Biotechnology, Inc.  
10410 Finnell Street  
Dallas, TX 75220  
831.457.3800  
800.457.3801  
scbt@scbt.com

### Emergency telephone number

Chemtrec  
1.800.424.9300 (Within USA)  
+1.703.527.3887 (Outside USA)

## 2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification

Acute toxicity - Oral  
Skin corrosion/irritation  
Serious eye damage/eye irritation  
Specific target organ toxicity (single exposure)

Category 4  
Category 1 Sub-category B  
Category 1  
Category 3

### Label elements

Signal word  
Hazard statements

Danger  
Harmful if swallowed  
Causes severe skin burns and eye damage  
May cause respiratory irritation. May cause drowsiness or dizziness

Symbols/Pictograms



Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Do not breathe dust/fume/gas/mist/vapors/spray  
Wear protective gloves/protective clothing/eye protection/face protection  
Use only outdoors or in a well-ventilated area



Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician  
 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/physician  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Immediately call a POISON CENTER or doctor/physician  
 Call a POISON CENTER or doctor/physician if you feel unwell  
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
 Rinse mouth  
 Do NOT induce vomiting  
 Store locked up Store in a well-ventilated place. Keep container tightly closed  
 Dispose of contents/container to an approved waste disposal plant

Precautionary Statements - Storage

Precautionary Statements - Disposal

**Hazards not otherwise classified (HNOC)**

Hazards not otherwise classified (HNOC) Not applicable

**Other Information**

<b>NFPA</b>	Health hazards	3		<b>HMIS</b>	Health hazards	3
	Flammability	0			Flammability	0
	Stability	0			Physical hazards	0
	Physical and chemical properties	-			Personal protection	-

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

CAS No 1336-21-6  
 Molecular Weight 35.05  
 Formula NH<sub>4</sub>OH

Chemical Name	CAS No	Weight %	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	70 - 90	> 90 mL/kg ( Rat )	-	-
Ammonium hydroxide	1336-21-6	10 - 30	= 350 mg/kg ( Rat )	-	-

**4. FIRST AID MEASURES**

**First Aid Measures**

General advice Immediate medical attention is required.  
 Eye contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.  
 Skin Contact Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.  
 Inhalation Remove to fresh air Call a physician or poison control center immediately If not breathing, give artificial respiration If breathing is difficult, give oxygen  
 Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.



Self-protection of the first aider      Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

### Most important symptoms and effects, both acute and delayed

Symptoms      No information available.

### Indication of any immediate medical attention and special treatment needed

Note to physicians      Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Suitable Extinguishing Media      Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media      None.

### Specific hazards arising from the chemical

Specific hazards arising from the chemical      The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Hazardous combustion products      Nitrogen oxides (NO<sub>x</sub>).

### Explosion data

Sensitivity to Mechanical Impact      No information available.

Sensitivity to Static Discharge      No information available.

### Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters      As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Personal precautions      Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

### Environmental precautions

Environmental precautions      Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

### Methods and material for containment and cleaning up

Methods for containment      Prevent further leakage or spillage if safe to do so.

Methods for cleaning up      Soak up with inert absorbent material. Clean contaminated surface thoroughly. Dike far ahead of liquid spill for later disposal. Take up mechanically, placing in appropriate containers for disposal. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

## 7. HANDLING AND STORAGE



### Precautions for safe handling

#### Advice on safe handling

Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Noxious vapor/odor.

### Conditions for safe storage, including any incompatibilities

#### Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Store at room temperature.

#### Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

### Appropriate engineering controls

#### Engineering Controls

Ensure adequate ventilation, especially in confined areas

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Tight sealing safety goggles. Face protection shield.

#### Skin and Body Protection

Wear protective gloves and protective clothing.

#### Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

#### General Hygiene Considerations

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	liquid
Appearance	No information available
Odor	No information available

<u>Property</u>	<u>Values</u>
pH	No information available
Melting point/freezing point	-60 °C
Boiling point	38 °C
Flash point	No information available
Density	0.9 g/mL
Evaporation rate	No information available
Upper flammability limits	27%
Lower flammability limit	16%
Vapor pressure	115 mmHg
Vapor density	1.2
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available



Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

## 10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Exposure to air or moisture over prolonged periods.
Incompatible materials	Incompatible with strong acids and bases. Incompatible with oxidizing agents.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating and toxic gases and vapors. Nitrogen oxides (NOx).

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

### Information on toxicological effects

Symptoms	No information available.
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### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
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### Numerical measures of toxicity - Product Information

Unknown acute toxicity	No information available
The following values are calculated based on chapter 3.1 of the GHS document	
ATEmix (oral)	1250 mg/kg

## 12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Ammonium hydroxide 1336-21-6	-	8.2: 96 h Pimephales promelas mg/L LC50	-	0.66: 48 h Daphnia pulex mg/L EC50 0.66: 48 h water flea mg/L EC50

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability	No information available.
Bioaccumulation	No information available.
Mobility	No information available.



### 13. DISPOSAL CONSIDERATIONS

Disposal of wastes This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).  
 Contaminated packaging Do not reuse container.  
 Other Information Waste codes should be assigned by the user based on the application for which the product was used.  
 US EPA Waste Number D002  
 California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Ammonium hydroxide 1336-21-6	Toxic Corrosive

### 14. TRANSPORT INFORMATION

#### DOT

UN/ID no UN2672  
 Hazard Class 8  
 Packing Group III  
 Proper shipping name Ammonia solution  
 Description UN2672, Ammonia solution, 8, III, Marine pollutant  
 Marine pollutant This product contains a chemical which is listed as a marine pollutant according to DOT  
 Emergency Response Guide Number 154

#### IMDG

UN/ID no UN2672  
 Hazard Class 8  
 Packing Group III  
 Proper shipping name Ammonia solution  
 Description UN2672, Ammonia solution, 8, III, Marine pollutant  
 EmS-No F-A, S-B  
 Marine pollutant This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

#### IATA

UN/ID no UN2672  
 Hazard Class 8  
 Packing Group III  
 Proper shipping name Ammonia solution  
 Description UN2672, Ammonia solution, 8, III

### 15. REGULATORY INFORMATION

#### International Inventories

All of the components in the product are on the following Inventory lists

TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC) Philippines (PICCS)

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Water	X	X	-	X	-	-	X	X	X	X
Ammonium hydroxide	X	X	-	X	-	X	X	X	X	X



X - Listed

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

## US Federal Regulations

### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

### SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

### CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ammonium hydroxide 1336-21-6	1000 lb			X

## US State Regulations

### California Proposition 65

This product does not contain any Proposition 65 chemicals.

### U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ammonium hydroxide 1336-21-6	X	X	X

## 16. OTHER INFORMATION

Revision note

No information available

### Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**