Ethylenediamine: sc-215004

MATERIAL SAFETY DATA SHEET

1 Identification of substance:

Product Name: **Ethylenediamine**

Catalog Number: sc-215004

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 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

Classification of the substance or mixture

GHS02 Flame

H226 Flammable liquid and vapour.

GHS08 Health hazard

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

GHS05 Corrosion

H314 Causes severe skin burns and eye damage.

GHS07

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H317 May cause an allergic skin reaction.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive

R34: Causes burns.

Xn; Harmful

R21/22: Harmful in contact with skin and if swallowed.

Xi; Irritant

R42/43: May cause sensitization by inhalation and skin contact.

R10: Flammable.

Information concerning particular hazards for human and environment: Not applicable

Label elements

Labelling according to EU guidelines:
The product has been classified and marked in accordance with directives on hazardous materials.

Code letter and hazard designation of product:
C Corrosive

Risk phrases:
10 Flammable.
21/22 Harmful in contact with skin and if swallowed.
34 Causes burns.
42/43 May cause sensitization by inhalation and skin contact.

Safety phrases:
23 Do not breathe gas/fumes/vapour/spray.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately.
Hazard description:
WHMIS classification
B3 - Combustible liquid
D2A - Very toxic material causing other toxic effects
E - Corrosive material

Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

HEALTH	3
FIRE	3
REACTIVITY	1

Health (acute effects) = 3
Flammability = 3
Reactivity = 1

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
107-15-3 Ethylenediamine
Identification number(s):
EC number: 203-468-6
Index number: 612-006-00-6

4 First aid measures

Description of first aid measures
General information
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Immediately remove any clothing soiled by the product.
After inhalation
In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air and to be sure call for a doctor.
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact
Call a doctor immediately.
Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Drink lots of water.
Information for doctor
Most important symptoms and effects, both acute and delayed
No further relevant information available.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Firefighting measures

Extinguishing media
Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water.
Special hazards arising from the substance or mixture
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Possibly Hydrogen cyanide (HCN)
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions:
Do not allow to enter sewers/ surface or ground water.
Do not allow to penetrate the ground/soil.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Keep away from ignition sources.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Prevent formation of aerosols.
Information about protection against explosions and fires:
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Store away from oxidizing agents.
Store away from air.
Further information about storage conditions:
Store under dry inert gas.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers. Store at room temperature.
This product is air sensitive.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:	
107-15-3 Ethylenediamine (100.0%)	
PEL ()	25 mg/m³, 10 ppm
REL ()	25 mg/m³, 10 ppm
TLV ()	25 mg/m³, 10 ppm Skin

Additional information:
The exposure limits that were valid when the MSDS was created were used.
No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Use suitable respirator when high concentrations are present.
Protection of hands:
Impervious gloves
Alkaline resistant gloves
Check protective gloves prior to each use for their proper condition.

Material of gloves
The selection of suitable gloves not only depends on the material, but also on quality.
Quality will vary from manufacturer to manufacturer.
Eye protection:
Gauze goggles
Safety glasses
Tightly sealed goggles
Full face protection
Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Liquid
Formula:	C2H8N2
Weight:	60.10
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	8-11°C (46-52 °F)
Boiling point/Boiling range:	117°C (243 °F)
Sublimation temperature / start:	Not determined
Flash point:	38°C (100 °F)
Flammability (solid, gaseous)	Not applicable.
Ignition temperature:	385°C (725 °F)
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
Explosion limits:	
Lower:	2.7 Vol %
Upper:	16.6 Vol %
Vapor pressure at 20°C (68 °F):	12 hPa (9 mm Hg)
Density at 20°C (68 °F):	0.899 g/cm³ (7.502 lbs/gal)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible
Segregation coefficient (n-octonol/water):	Not determined.
Viscosity:	
dynamic at 25°C (77 °F):	1.54 mPas
kinematic:	Not determined.
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity
Chemical stability
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions
Reacts with strong acids
Reacts with oxidizing agents
Incompatible materials:
Reducing agents
Air
Hazardous decomposition products:
Nitrogen oxides
Corrosive gases/vapors
Carbon monoxide and carbon dioxide
Possibly Hydrogen cyanide (HCN)

11 Toxicological information

Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
Oral	LD50	1200 mg/kg (rat)
Dermal	LD50	656 mg/kg (rabbit)
Inhalative	LC50	300 mg/m3 (mouse)

Primary irritant effect:
on the skin: *Corrosive effect on skin and mucous membranes.*
on the eye: *Strong corrosive effect.*
Sensitization:
Sensitization possible through inhalation.
Sensitization possible through skin contact.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
Danger through skin absorption.
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.
ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute and/or other multiple dose toxicity data for components in this product.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive and/or mutation data for components in this product.

12 Ecological information

Toxicity
Acquatic toxicity: *No further relevant information available.*
Persistence and degradability *No further relevant information available.*
Behavior in environmental systems:
Bioaccumulative potential *No further relevant information available.*
Mobility in soil *No further relevant information available.*
Additional ecological information:
General notes:
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
Do not allow material to be released to the environment without proper governmental permits.
Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*
Other adverse effects *No further relevant information available.*

13 Disposal considerations

Waste treatment methods
Recommendation *Consult state, local or national regulations to ensure proper disposal.*

Uncleaned packagings:
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agent: *Water, if necessary with cleansing agents.*

14 Transport information

UN-Number	
DOT, ADR, IMDG, IATA	*UN1604*
UN proper shipping name	
DOT, IMDG, IATA	*ETHYLENEDIAMINE*
ADR	*1604 ETHYLENEDIAMINE*
Transport hazard class(es)	
DOT, IMDG, IATA	
 	
Class	*8 Corrosive substances.*
Label	*8+3*
ADR	
 	
Class	*8 (CF1) Corrosive substances*
Label	*8+3*
Packing group	
DOT, ADR, IMDG, IATA	*II*
Environmental hazards:	
Marine pollutant:	*No*

Special precautions for user	Warning: Corrosive substances
Danger code (Kemler):	83
EMS Number:	F-E,S-C
Segregation groups	Alkalis
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	UN1604, ETHYLENEDIAMINE, 8 (3), II

15 Regulatory information

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

Product related hazard informations:
The product has been classified and marked in accordance with directives on hazardous materials.

Hazard symbols:
C Corrosive

Risk phrases:
10 Flammable.
21/22 Harmful in contact with skin and if swallowed.
34 Causes burns.
42/43 May cause sensitization by inhalation and skin contact.

Safety phrases:
23 Do not breathe gas/fumes/vapour/spray.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:
For use only by technically qualified individuals.
This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations
REACH - Pre-registered substances Substance is listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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.

03/25/2013