

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 /

Rules and Regulations

Date of issue: 12/05/2015 Revision date: Version: 1.0

CLM-8315-S

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product form : Mixtures

Product name : DESETHYLHYDROXYATRAZINE (RING-13C3,99%)100 UG/ML IN

80%H2O/20%DIETHYLAMINE

Product code : CLM-8315-S

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses 1.2.1

Industrial/Professional use spec : For professional use only.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.

50 Frontage Road Andover, MA 01810

USA: 1-800-322-1174 Int: 1-978-749-8000 <u>cilsales@isotope.com</u> www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours) International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Irrit. 2 Eye Dam. 1 H318 Resp. Sens. 1 H334 Skin Sens. 1 H317

Full text of H-phrases: see section 16

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

T; Xn; Xi; R20/21/22-38-41-42/43-52 Full text of R-phrases: see section 16

Classification (GHS-US)

Flam. Liq. Not classified

Skin Irrit. 2 H315 Eye Dam. 1 H318 Resp. Sens. 1 H334 Skin Sens. 1 H317

Adverse physicochemical, human health and environmental effects

No additional information available

10/12/2015 EN (English US) 1/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)





GHS05

Signal word (CLP) : Danger

Hazardous ingredients : DIETHYLAMINE UNLABELED
Hazard statements (CLP) : H315 - Causes skin irritation

H317 - May cause an allergic skin reaction H318 - Causes serious eye damage

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

Precautionary statements (CLP) : P261 - Avoid breathing mist, spray

P264 - Wash both hands thoroughly after handling

P272 - Contaminated work clothing should not be allowed out of the workplace P280 - Wear eye protection, face protection, protective clothing, protective gloves

P284 - Wear respiratory protection

P302+P352 - IF ON SKIN: Wash with plenty of water/...

P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing

GHS-US labeling

Hazard pictograms (GHS-US)





GHS05

GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H315 - Causes skin irritation

H317 - May cause an allergic skin reaction H318 - Causes serious eye damage

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

Precautionary statements (GHS-US) : P261 - Avoid breathing mist, spray

P264 - Wash Both hands thoroughly after handling

P272 - Contaminated work clothing should not be allowed out of the workplace P280 - Wear eye protection, face protection, protective clothing, protective gloves

P284 - Wear respiratory protection

P302+P352 - IF ON SKIN: Wash with plenty of soap and water

P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable

for breathing

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
P321 - Specific treatment (see Hazard pictograms (CLP) on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention

P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

P362 - Take off contaminated clothing and wash before reuse P362+P364 - Take off contaminated clothing and wash it before reuse P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

10/12/2015 EN (English US) 2/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

3.2. Mixtures			
Name	Product identifier	%	Classification according to Directive 67/548/EEC
WATER UNLABELED	(CAS No) 7732-18-5 (EC no) 231-791-2	84.97079	Not classified
DIETHYLAMINE UNLABELED	(CAS No) 109-89-7 (EC no) 203-716-3	15.01858	Xn; R20/21/22 T; R24 Xi; R38 Xi; R41 R42 R43 F; R11
DESETHYLHYDROXYATRAZINE (RING-13C3, 99%)	(CAS No) 19988-24-0 (Unlabeled)	0.01062	Not classified
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
WATER UNLABELED	(CAS No) 7732-18-5 (EC no) 231-791-2	84.97079	Not classified
DIETHYLAMINE UNLABELED	(CAS No) 109-89-7 (EC no) 203-716-3	15.01858	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335
DESETHYLHYDROXYATRAZINE (RING-13C3, 99%)	(CAS No) 19988-24-0 (Unlabeled)	0.01062	Not classified
Name	Product identifier	%	Classification (GHS-US)
DIETHYLAMINE UNLABELED	(CAS No) 109-89-7	15.01858	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 Aquatic Acute 3, H402

Full text of R-, H- and EUH-phrases: see section 16

No additional information available

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: 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.
First-aid measures after ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mout with water. Consult a physician.
4.2. Most important symptoms and eff	ects, both acute and delayed
Symptoms/injuries after inhalation	: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Harmful if swallowed.
4.3. Indication of any immediate medic	cal attention and special treatment needed

10/12/2015 EN (English US) 3/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Firefighting measures

5.1. Extinguishing media

suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable liquid and vapor.

Explosion hazard : May form flammable/explosive vapor-air mixture.

Reactivity : Not available.

5.3. Advice for firefighters

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.1.2. For emergency responders

No additional information available

6.2. 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.

6.3. Methods and material for containment and cleaning up

For containment : 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.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before

breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a dry and well-ventilated place.

Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DIETHYLAMINE UNLABELED (109-89-7)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	5.0000000000 ppm Eye & Upper Respiratory Tract irritation. Not classifiable as a human carcinogen
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	15.0000000000 ppm Eye & Upper Respiratory Tract irritation. Not classifiable as a human carcinogen
USA OSHA	OSHA PEL (TWA) (ppm)	10.0000000000 ppm USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (STEL) (ppm)	25.0000000000 ppm USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000

8.2. Exposure controls

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

10/12/2015 EN (English US) 4/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture.

Physical state : Liquid

Appearance : Liquid.

Molecular mass : 18.02 g/mol

Color : Colourless.

Odor : No data available.

Odor threshold : No data available : 9 - 10 at 25 °C (77 °F) : No data available Relative evaporation rate (butyl acetate=1) : 0.0 °C (32.0 °F) Melting point : No data available Freezing point Boiling point 100.0 °C (212.0 °F) Flash point : No data available : No data available Self ignition temperature Decomposition temperature : No data available

Flammability (solid, gas) : Highly flammable liquid and vapor

Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : No data available
Density : 1 g/ml at 20 °C (68 °F)
Solubility : Water: Completely miscible

Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Not available.

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Not available.

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

No data available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

DIETHYLAMINE UNLABELED (109-89-7)

LD50 oral rat	540 mg/kg

10/12/2015 EN (English US) 5/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DIETHYLAMINE UNLABELED (109-89-7)	
LD50 dermal rabbit	577 mg/kg
LC50 inhalation rat (ppm)	4000 ppm - 4h
ATE (oral)	540.000 mg/kg body weight
ATE (dermal)	577.000 mg/kg body weight
ATE (dust, mist)	1.500 mg/l/4h
WATER UNLABELED (7732-18-5)	
LD50 oral rat	> 90000 mg/kg
Skin corrosion/irritation	: Causes skin irritation.
	pH: 9 - 10 at 25 °C (77 °F)
Serious eye damage/irritation	: Causes serious eye damage.
	pH: 9 - 10 at 25 °C (77 °F)
Respiratory or skin sensitization	: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Symptoms/injuries after skin contact	: Causes skin irritation.

SECTION 12: Ecological information

Symptoms/injuries after eye contact

Symptoms/injuries after ingestion

12.1. Toxicity

DIETHYLAMINE UNLABELED (109-89-7)	
LC50 fish 1	25 - 198 mg/l Orcorhynchus mykiss (Rainbow trout) - 96h
EC50 Daphnia 1	56 mg/l Daphnia manga (Water flea) - 48h
ErC50 (algae)	20 mg/l 96h

: Causes serious eye damage.

: Harmful if swallowed.

12.2. Persistence and degradability

DESETHYLHYDROXYATRAZINE (RING-13C3, 99%) (19988-24-0 (Unlabeled))	
Persistence and degradability	Not available.
WATER UNLABELED (7732-18-5)	
Persistence and degradability	Not available.

12.3. Bioaccumulative potential

DESETHYLHYDROXYATRAZINE (RING-13C3,99%)100 UG/ML IN 80%H2O/20%DIETHYLAMINE	
Log Pow	No data available
DIETHYLAMINE UNLABELED (109-89-7)	

Log Pow	0.58
Bioaccumulative potential	Not available.

DESETHYLHYDROXYATRAZINE (RING-13C3, 99%) (19988-24-0 (Unlabeled))	
Bioaccumulative potential	Not available.

WATER UNLABELED (7732-18-5)	
Log Pow	No data available
Bioaccumulative potential	Not available.

12.4. Mobility in soil

10/12/2015 EN (English US) 6/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DIETHYLAMINE UNLABELED (109-89-7)		
Ecology - soil	Not available.	
DESETHYLHYDROXYATRAZINE (RING-13C3, 99%) (19988-24-0 (Unlabeled))		
Ecology - soil	Not available.	
WATER UNLABELED (7732-18-5)		
Ecology - soil	Not available.	

Results of PBT and vPvB assessment

No additional information available

Other adverse effects

No additional information available

SECTION 13: Disposal considerations

Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local

environmental control regulations.

Waste disposal recommendations : Comply with local regulations for disposal.

Additional information : Handle empty containers with care because residual vapors are flammable.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

UN number

UN-No.(DOT) : 3266 DOT NA no. UN3266

UN proper shipping name

DOT Proper Shipping Name : Corrosive liquid, basic, inorganic, n.o.s.

Department of Transportation (DOT) Hazard : 8 - Class 8 - Corrosive material 49 CFR 173.136

Classes

Hazard labels (DOT) : 8 - Corrosive



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) II - Medium Danger

DOT Special Provisions (49 CFR 172.102) : B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are

not authorized.

IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.

T11 - 6 178.274(d)(2) Normal..... 178.275(d)(3)

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154 DOT Packaging Non Bulk (49 CFR 173.xxx) : 202 DOT Packaging Bulk (49 CFR 173.xxx) : 242

Additional information 14.3.

: No supplementary information available. Other information

10/12/2015 EN (English US) 7/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Overland transport

Packing group (ADR) : II

Class (ADR) : 8 - Corrosive substances

Hazard identification number (Kemler No.) : 80
Classification code (ADR) : C5

Danger labels (ADR) : 8 - Corrosive substances



Orange plates

80 3266

Tunnel restriction code : E
Limited quantities (ADR) : 1L
EAC : 2X
APP : B
Excepted quantities (ADR) : E2

Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a

passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this

section is exceeded.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters",52 - Stow "separated from" acids

MFAG-No : 154

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 1 L

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 30 L

CFR 175.75)

Civil Aeronautics Law : Corrosive substances

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

DIETHYLAMINE UNLABELED (109-89-7)	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

15.2. International regulations

CANADA

DESETHYLHYDROXYATRAZINE (RING-13C3,99%)100 UG/ML IN 80%H2O/20%DIETHYLAMINE

Listed on the Canadian DSL (Domestic Substances List) inventory.

10/12/2015 EN (English US) 8/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2.1. National regulations

No additional information available

15.3. US State regulations

DESETHYLHYDROXYATRAZINE (RING-13C3,99%)100 UG/ML IN 80%H2O/20%DIETHYLAMINE()	
State or local regulations	U.S Pennsylvania - RTK (Right to Know) List U.S New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

DIETHYLAMINE UNLABELED (109-89-7)

- U.S. Massachusetts Right To Know List U.S. Pennsylvania RTK (Right to Know) List
- U.S. New Jersey Right to Know Hazardous Substance List

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Full text of R-, H- and EUH-phrases::

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Flam. Liq. 2	Flammable liquids Category 2
Resp. Sens. 1	Respiratory sensitisation Category 1
Skin Irrit. 2	skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H311	Toxic in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
R11	Highly flammable
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R24	Toxic in contact with skin
R38	Irritating to skin
R41	Risk of serious damage to eyes
R42	May cause sensitization by inhalation
R43	May cause sensitization by skin contact
R52	Harmful to aquatic organisms
F	Highly flammable
Т	Toxic
Xi	Irritant
Xn	Harmful

NFPA health hazard

: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

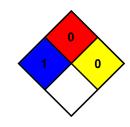
NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions,

and are not reactive with water.



10/12/2015 EN (English US) 9/10

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard
Physical : 0 Minimal Hazard

CIL Mixture SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

10/12/2015 EN (English US) 10/10