



N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 19/06/2017

Revision date:

Version: 1.0

ULM-10264

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

1.1. Product identifier

Product form : Substance
Substance name : N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%
EC No : 204-689-0
CAS No : 124-20-9
Product code : ULM-10264
Formula : $\text{NH}_2(\text{CH}_2)_3\text{NH}(\text{CH}_2)_4\text{NH}_2$
Synonyms : 1,8-Diamino-4-azaooctane / Spermidine

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

1.2.1. Relevant identified uses

Main use category : Professional use
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

USA: 1-800-322-1174 Int: 1-978-749-8000

cilsales@isotope.com 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 Corr. 1A H314

Eye Dam. 1 H318

Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

C; R35

Xi; R41

Full text of R-phrases: see section 16

GHS-US classification

Skin Corr. 1A H314

Eye Dam. 1 H318

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Causes severe skin burns and eye damage. Causes serious eye damage.

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%

ULM-10264

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 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

Hazard statements (CLP) :

: H314 - Causes severe skin burns and eye damage

Precautionary statements (CLP) :

: P260 - Do not breathe dust, fume, gas, spray, mist, vapors
P264 - Wash hands, forearms and face thoroughly after handling
P280 - Wear protective clothing, protective gloves
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
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
P310 - Immediately call a doctor, a POISON CENTER

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) :

: Danger

Hazard statements (GHS-US) :

: H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) :

: P260 - Do not breathe dust, fume, gas, mist, spray, vapors
P264 - Wash hands, forearms and face thoroughly after handling
P280 - Wear protective clothing, protective gloves
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
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
P310 - Immediately call a doctor, a POISON CENTER
P321 - Specific treatment (see Hazardous component(s) for labeling on this label)
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%	(CAS No) 124-20-9 (EC No) 204-689-0 (EC Index No)	100	C; R35 Xi; R41
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%	(CAS No) 124-20-9 (EC No) 204-689-0 (EC Index No)	100	Skin Corr. 1A, H314 Eye Dam. 1, H318

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%

ULM-10264

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

Name	Product identifier	%	GHS-US classification
N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95% (Main constituent)	(CAS No) 124-20-9	100	Skin Corr. 1A, H314 Eye Dam. 1, H318

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: Causes severe skin burns and eye damage.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Alcohol resistant foam. Dry chemical. Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Firefighting instructions	: Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Wear respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment. Avoid breathing dust, mist or spray. Avoid dust formation. Ensure there is adequate ventilation. Evacuate the danger area.
Emergency procedures	: Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust, fume, gas, mist, spray, vapors.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Soak up with inert absorbent material (for example sand, sawdust, a universal binder, silica gel).
Methods for cleaning up	: Mechanically recover the product. This material and its container must be disposed of in a safe way, and as per local legislation.
Other information	: Dispose of materials or solid residues at an authorized site.

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%

ULM-10264

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid dust formation. Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin and eyes. Do not breathe dust, fume, gas, mist, spray, vapors, Aerosols. Wear personal protective equipment.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store locked up. Store in a well-ventilated place. Keep container tightly closed.
- Storage conditions : Store in freezer (-20°C). Protect from light, air and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

- Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Ensure good ventilation of the work station.
- Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



- Materials for protective clothing : Wear suitable protective clothing and gloves.
- Hand protection : Wear suitable protective clothing and gloves.
- Eye protection : Wear eye protection. Chemical goggles or face shield with safety glasses. Safety glasses.
- Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.
- Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Liquid. clear.
- Molecular mass : 145.25 g/mol
- Color : Colorless.
- Odor : No data available
- Odor threshold : No data available
- pH : 12 - 13.5 at 145 g/l at 25 °C (77 °F)
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : 22 - 25 (72 - 77 °F)
- Freezing point : Not applicable
- Boiling point : No data available
- Flash point : 112 °C (234 °F) - closed cup
- Auto-ignition temperature : Not applicable
- Decomposition temperature : No data available
- Flammability (solid, gas) : Non flammable
- Vapor pressure : No data available
- Relative vapor density at 20 °C : No data available
- Relative density : Not applicable
- Specific gravity / density : 0.925 g/ml at 20 °C (68 °F)

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%

ULM-10264

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Solubility	: Water: 145 g/l at 20 °C (68 °F) - completely soluble
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Acids. Acid chlorides. Acid anhydrides. Oxidizing agent.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95% (124-20-9)

Additional information	Inhalation :. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
------------------------	--

Skin corrosion/irritation	: Causes severe skin burns and eye damage. pH: 12 - 13.5 at 145 g/l at 25 °C (77 °F)
Serious eye damage/irritation	: Causes serious eye damage. pH: 12 - 13.5 at 145 g/l at 25 °C (77 °F)
Respiratory or skin sensitization	: Not classified
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
Potential Adverse human health effects and symptoms	: 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. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: Causes severe skin burns and eye damage.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%

ULM-10264

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

Product/Packaging disposal recommendations: : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No.(DOT) : 2735
DOT NA no. UN2735

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Polyamines, liquid, corrosive, n.o.s.
(4-Azaoctamethylenediamine)
Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
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)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
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

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%

ULM-10264

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

14.3. Additional information

Emergency Response Guide (ERG) Number : 153
Other information : No supplementary information available.
Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

Overland transport

Packing group (ADR) : II
Class (ADR) : 8 - Corrosive substances
Hazard identification number (Kemler No.) : 80
Classification code (ADR) : C7
Hazard labels (ADR) : 8 - Corrosive substances



Orange plates :



Tunnel restriction code (ADR) : E
Limited quantities (ADR) : 11
EAC : 2X
APP : B
Excepted quantities (ADR) : E2

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other : 52 - Stow "separated from" acids
MFAG-No : 153

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L
Civil Aeronautics Law : Corrosive substances

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

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

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95% (124-20-9)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%

ULM-10264

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2. International regulations

CANADA

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95% (124-20-9)

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

N-(3-AMINOPROPYL) BUTANE-1,4-DIAMINE UNLABELED CHEMICAL PURITY 95%(124-20-9)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

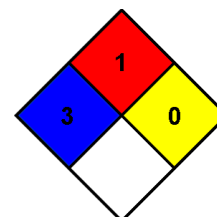
Full text of R-, H- and EUH-phrases:

Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
R35	Causes severe burns
R41	Risk of serious damage to eyes
C	Corrosive
Xi	Irritant

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 1 Slight Hazard

Physical : 0 Minimal Hazard

CIL Multi-Solvent 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