The following list contains the Material Safety Data Sheets you requested. Please scoll down to view the requested MSDS(s).

Product	MSDS	Distributor	Format	Language	Quantity
1124224	N/A	Hach Company	ROWGHS	English	1

Total Enclosures: 1

World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

MSDS No: M01122

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: N-(1-Naphthyl)ethylenediamine Dihydrochloride
Catalog Number: 1124224

Hach Company	Emergency Telephone Numbers:
P.O.Box 389	(Medical and Transportation)
Loveland, CO USA 80539	(303) 623-5716 24 Hour Service
(970) 669-3050	(515)232-2533 8am - 4pm CST

MSDS Number: M01122
Chemical Name: 1,2-Ethanediamine, N-1-naphthalenyl-, dihydrochloride
CAS Number: 1465-25-4
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: $C_{12}H_{14}N_2 \cdot 2ClH$
Chemical Family: Aromatic Halogenated Amines
Intended Use: Laboratory Use

2. HAZARDS IDENTIFICATION

GHS Classification:
Hazard categories: Skin Corrosion/Irritation: Skin Irrit. 2 Serious Eye Damage/Eye Irritation:Eye Irrit. 2 Specific Target Organ Toxicity - Single Exposure: STOT SE 3
GHS Label Elements:
WARNING

Hazard statements: Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Precautionary statements: Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves / protective clothing / eye protection / face protection. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
HMIS:
Health: 2
Flammability: 1
Reactivity: 0
Protective Equipment: X - See protective equipment, Section 8.
NFPA:
Health: 2
Flammability: 1
Reactivity: 0
Symbol: Not applicable
WHMIS Hazard Classification: Class D, Division 2, Subdivision B - Toxic material (other toxic effects)
WHMIS Symbols: Other Toxic Effects

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

N-(1-Naphthyl)ethylenediamine Dihydrochloride

CAS Number: 1465-25-4
Chemical Formula: $C_{12}H_{14}N_2 \cdot 2ClH$
GHS Classification: Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT Single 3, H335
Percent Range (Trade Secret): 100.0
Percent Range Units: weight / weight
PEL: 15 mg/m^3 as total dust; 5 mg/m^3 as respirable dust
TLV: 10 mg/m^3 as inhalable dust; 3 mg/m^3 as respirable dust

WHMIS Symbols: Other Toxic Effects

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.
Advice to doctor: Treat symptomatically.
Eye Contact: Immediately flush eyes with water for 15 minutes. Check for and remove any contact lenses. Call physician if irritation develops.
Skin Contact (First Aid): Wash skin with plenty of water. Call physician if irritation develops. Remove contaminated clothing.
Inhalation: Remove to fresh air. Give artificial respiration if necessary. If you feel unwell, contact a physician
Ingestion (First Aid): Induce vomiting using syrup of ipecac or by sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.

5. FIRE FIGHTING MEASURES

Flammable Properties: Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria.
Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance.
Extinguishing Media: Use media appropriate to surrounding fire conditions
Extinguishing Media NOT To Be Used: Not applicable
Fire / Explosion Hazards: May react violently with: strong oxidizers
Hazardous Combustion Products: Toxic fumes of: nitrogen oxides. hydrogen chloride

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:
Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.
Containment Technique: Stop spilled material from being released to the environment. Releases of this material may contaminate the environment.
Clean-up Technique: If permitted by regulation, Sweep up material. Dispose of material in government approved hazardous waste facility. Otherwise, Pick up spill for disposal and place in a closed container Dispose of in accordance with local, state and federal regulations or laws.
Evacuation Procedure: Evacuate as needed to perform spill clean-up.
DOT Emergency Response Guide Number: Not applicable

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin clothing Wash thoroughly after handling. Use with adequate ventilation. Do not breathe dust. Maintain general industrial hygiene practices when using this product.
Storage: Keep container tightly closed when not in use. Keep this product in its original container when not in use. Store in a cool, dark, dry place. Protect from: light Keep away from: oxidizers
Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields

Skin Protection: lab coat nitrile gloves In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it.

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin clothing Wash thoroughly after handling. Use with adequate ventilation. Do not breathe: dust Protect from: light Keep away from: oxidizers

TLV: 10 mg/m^3 as inhalable dust; 3 mg/m^3 as respirable dust

PEL: 15 mg/m^3 as total dust; 5 mg/m^3 as respirable dust

For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Off-white powder

Physical State: Solid

Molecular Weight: 259.20

Odor: Not determined

Odor Threshold: Not available

pH: Not determined

Metal Corrosivity:

Corrosivity Classification: Not classified as corrosive to metals according to GHS criteria.

Steel: Not applicable

Aluminum: Not applicable

Specific Gravity/ Relative Density (water = 1; air =1): Not determined

Viscosity: Not applicable

Solubility:

Water: Very soluble in hot water, slightly soluble in cold water

Acid: Very soluble in dilute HCl

Other: Very soluble in 95% alcohol, slightly soluble in absolute alcohol

Partition Coefficient (n-octanol / water): KOWWIN Estimation: log K_{ow} = -0.45

Coefficient of Water / Oil: Not available

Melting Point: 188 °C (370 °F)

Decomposition Temperature: Not available

Boiling Point: Not applicable

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Evaporation Rate (water = 1): Not applicable

Volatile Organic Compounds Content: Not applicable

Flammable Properties: Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria.

Flash Point: Not applicable

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Autoignition Temperature: Not determined

Explosive Properties:

Not classified according to GHS criteria.

Oxidizing Properties:

Not classified according to GHS criteria.

Reactivity Properties:

Not classifed as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

Gas under Pressure:

Not classified according to GHS criteria.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Mechanical Impact: None reported
Static Discharge: None reported.
Reactivity / Incompatibility: Incompatible with: oxidizers acids acid chlorides acid anhydrides
Hazardous Decomposition: Toxic fumes of: nitrogen oxides hydrogen chloride
Conditions to Avoid: Excess moisture Exposure to light. Contact with oxidizers Incompatibles Poor Ventilation

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No information available
Toxicologically Synergistic Products: None reported
Acute Toxicity: Quantitative structure-activity relationship (QSAR) Estimation Estimation of Toxicity Hazard (Chronic Oral Route) Cramer Classification - Class 3 NOEL (mg/kg bw/day): 0.15; human exposure threshold (mg/person/day): 0.09 Cramer Classification exposure threshold assumes 60 kg body weight (Adapted from Munro et al. 1996. Food Chem. Toxicol. 34: 829) Toxtree (Ideaconsult, Ltd) Health effects are not known. Route Data Given Below Based on classification principles, the classification criteria are not met. Data insufficient for classification
Intraperitoneal Mouse LD50 = 150 mg/kg
Specific Target Organ Toxicity - Single Exposure (STOT-SE): Target Organs Respiratory Tract
Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): No data found Based on classification principles, the classification criteria are not met.
Skin Corrosion/Irritation: Irritating to skin.
Eye Damage: Irritating to eyes.
Sensitization: No data found. Based on classification principles, the classification criteria are not met.
CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): Quantitative structure-activity relationship (QSAR) Estimation Benigni / Bossa rules for mutagenicity and carcinogenicity No Alerts for carcinogenic acitivity Toxtree (Ideaconsult, Ltd) Summary of findings reported in the literature follow. Based on classification principles, the classification criteria are not met. Data insufficient for classification
Mutation in S. typhimurium at 0.8 mg/plate.
IARC Listed: No
NTP Listed: No
O.S.H.A. Listed: No
Symptoms/Effects:
Ingestion: None reported Toxic properties unknown. Toxicological properties have not been fully investigated
Inhalation: May cause: irritation of nose and throat respiratory tract irritation
Skin Absorption: None Reported May be absorbed through skin. Toxic properties unknown. Toxicological properties have not been fully investigated
Chronic Effects: None reported
Medical Conditions Aggravated: None reported

12. ECOLOGICAL INFORMATION

Product Ecological Information: ECOSARS Estimation: 96 hr Fish LC50 = 33673 mg/L; 48 hr Daphnid LC50 = 15251 mg/L: 96 hr Green algae EC50 = 4461 mg/L
No ecological data available for this product. Ecological structure-activity relationship (SAR) Estimation (ECOSAR U.S. EPA 2009) SAR Class Neutral Organics Based on classification principles, not classified as hazardous to the environment. No bioaccumulation potential Mobility in soil: No data available
CEPA Categorization: Not Persistent Not Bioaccumulative Inherently toxic to aquatic organisms
BIOWIN Estimation: Not Readily Biodegradable; KOWWIN Estimation: log K_{ow} = -0.45
Ingredient Ecological Information: --
Not applicable

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: Not applicable
Special Instructions (Disposal): Mix with combustible solvent. Incinerate material at an E.P.A. approved hazardous waste facility.
Empty Containers: Working in a well-ventilated area, Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. In the US, rinsate from empty containers is classified as

hazardous waste and should be disposed of at an E.P. A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste. Dispose of empty container as normal trash.
NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

D.O.T.:
D.O.T. Proper Shipping Name: Not Currently Regulated
--
Hazard Class: Not applicable
Subsidiary Risk: NA
ID Number: NA
Packing Group: Not applicable
T.D.G.:
Proper Shipping Name: Not Currently Regulated
--
Hazard Class: Not applicable
Subsidiary Risk: NA
UN Number/PIN: Not applicable
Packing Group: Not applicable
I.C.A.O.:
I.C.A.O. Proper Shipping Name: Not Currently Regulated
--
Hazard Class: Not applicable
Subsidiary Risk: NA
ID Number: Not applicable
Packing Group: Not applicable
I.M.O.:
Proper Shipping Name: Not Currently Regulated
--
Hazard Class: Not applicable
Subsidiary Risk: NA
ID Number: Not applicable
Packing Group: Not applicable
Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:
O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)
E.P.A.:
S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard
S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.
--
302 (EHS) TPQ (40 CFR 355): Not applicable
304 CERCLA RQ (40 CFR 302.4): Not applicable
304 EHS RQ (40 CFR 355): Not applicable
Clean Water Act (40 CFR 116.4): Not applicable
RCRA: Contains no RCRA regulated substances.
State Regulations:
California Prop. 65: No Prop. 65 listed chemicals are present in this product.
Identification of Prop. 65 Ingredient(s): Not applicable
California Perchlorate Rule CCR Title 22 Chap 33: Not applicable

Trade Secret Registry: Not applicable

National Inventories:

U.S. Inventory Status: TSCA Listed: Yes

CAS Number: 1465-25-4

Canadian Inventory Status: DSL Listed: Yes

EEC Inventory Status: EINECS Listed: Yes

Australian Inventory (AICS) Status: Listed

New Zealand Inventory (NZIoC) Status: Listed

Korean Inventory (KECI) Status: Not listed - exempt. Quantity < 100 kg per annum.

Japan (ENCS) Inventory Status: Listed

China (PRC) Inventory (MEP) Status: Listed

16. OTHER INFORMATION

References: TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989. Technical Judgment. Vendor Information. NIOSH Registry of Toxic Effects of Chemical Substances, 1985-86. Cincinnati: U.S. Department of Health and Human Services, April, 1987.

Complete Text of H phrases referred to in Section 3: H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation.

Revision Summary: . Substantially Revised MSDS Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

Date of MSDS Preparation:

Day: 09

Month: June

Year: 2014

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

CCOHS Evaluation Note: It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3).

Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.