



Be Right™

SAFETY DATA SHEET

Issue Date 05-Mar-2018

Revision Date 05-Mar-2018

Version 1.1

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1. IDENTIFICATION

Product identifier

Product Name N-(1-Naphthyl)ethylenediamine Dihydrochloride

Other means of identification

Product Code(s) 1124224

Safety data sheet number M01122

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use.

Uses advised against None.

Restrictions on use None.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company P.O.Box 389 Loveland, CO 80539 USA +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service +1(515)232-2533 - 8am - 4pm CST

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

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

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word - Warning



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Hazard statements

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary statements

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards Known

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name N-(1-Naphthyl)ethylenediamine Dihydrochloride
Chemical Family Aromatic Halogenated Amines.
Formula C₁₂H₁₄N₂ • 2ClH
CAS No 1465-25-4

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No.	Percent Range	HMRIC #
N-(1-Naphthyl)ethylenediamine dihydrochloride	1465-25-4	100%	-

4. FIRST AID MEASURES

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
Hazardous combustion products	Nitrogen oxides. Hydrogen chloride.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. ACCIDENTAL RELEASE MEASURES

U.S. 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.
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Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.
Other Information	Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

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 Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Flammability class Not applicable

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 Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection Wear suitable gloves. Impervious gloves.

Eye/face protection If splashes are likely to occur, wear safety glasses with side-shields.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

General Hygiene Considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not

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allow into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	powder
Odor	Not determined
Color	Off-white
Odor threshold	No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	259.20 g/mole	
pH	No data available	
Melting point/freezing point	188 °C / 370 °F	
Boiling point / boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable at 20 °C / 68 °F	
Vapor density (air = 1)	Not applicable	
Specific gravity (water = 1 / air = 1)	No data available	
Partition Coefficient (n-octanol/water)	log K _{ow} = -0.45	Estimation through KOWWIN v1.68 part of the Estimation Programs Interface (EPI) Suite™
Soil Organic Carbon-Water Partition Coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	

Solubility(ies)

Water solubility

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

Solubility in other solvents

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
Ethyl alcohol	Soluble	> 1000 mg/L	25 °C / 77 °F
Dilute Hydrochloric Acid	Soluble	> 1000 mg/L	25 °C / 77 °F
Ethyl alcohol	Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

Other Information

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Metal Corrosivity

Steel Corrosion Rate
Aluminum Corrosion Rate

Not applicable
Not applicable

Volatile Organic Compounds (VOC) Content

This Product is by Weight 100% an Individual Pure Chemical Substance

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
N-(1-Naphthyl)ethylenediamine dihydrochloride	1465-25-4	No data available	-

Explosive properties

Upper explosion limit
Lower explosion limit

No data available
No data available

Flammable properties

Flash point

Not applicable

Flammability Limit in Air

Upper flammability limit:
Lower flammability limit:

No data available
No data available

Oxidizing properties

No data available.

Bulk density

No data available

Particle Size

No information available

Particle Size Distribution

No information available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None
Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

Conditions to avoid

None known based on information supplied.

Incompatible materials

Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

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Hazardous Decomposition Products

Nitrogen oxides. Hydrogen chloride. Hydrogen chloride.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation	May cause irritation of respiratory tract.
Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms Redness. May cause redness and tearing of the eyes.

Aggravated Medical Conditions	Skin disorders. Eye disorders. Respiratory disorders.
Toxicologically synergistic products	None known.
Toxicokinetics, metabolism and distribution	This Product is by Weight 100% an Individual Pure Chemical Substance.

Product Acute Toxicity Data

Oral Exposure Route
Dermal Exposure Route
Inhalation (Dust/Mist) Exposure Route
Inhalation (Vapor) Exposure Route
Inhalation (Gas) Exposure Route

This Product is by Weight 100% an Individual Pure Chemical Substance
If available, see ingredient data below
If available, see ingredient data below
If available, see ingredient data below
If available, see ingredient data below
If available, see ingredient data below

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

Not applicable

ATEmix (oral)	No information available
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Ingredient Acute Toxicity Data

Oral Exposure Route
Dermal Exposure Route
Inhalation (Dust/Mist) Exposure Route
Inhalation (Vapor) Exposure Route
Inhalation (Gas) Exposure Route

If available, see data below
If available, see data below
If available, see data below
If available, see data below
If available, see data below

Product Specific Target Organ Toxicity Single Exposure Data

Oral Exposure Route
Dermal Exposure Route
Inhalation (Dust/Mist) Exposure Route
Inhalation (Vapor) Exposure Route
Inhalation (Gas) Exposure Route

If available, see ingredient data below
If available, see ingredient data below
If available, see ingredient data below
If available, see ingredient data below
If available, see ingredient data below

Ingredient Specific Target Organ Toxicity Single Exposure Data

Oral Exposure Route
Dermal Exposure Route

If available, see data below
If available, see data below

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Inhalation (Dust/Mist) Exposure Route
Inhalation (Vapor) Exposure Route
Inhalation (Gas) Exposure Route

If available, see data below
If available, see data below
If available, see data below

Aspiration toxicity

If available, see data below

Kinematic viscosity

Not applicable

Product Skin Corrosion/Irritation Data

This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Ingredient Skin Corrosion/Irritation Data

If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
N-(1-Naphthyl)ethylenediamine dihydrochloride (100%) CAS#: 1465-25-4	None reported	Guinea pig	None reported	None reported	Skin irritant	ERMA (New Zealand's Environmental Risk Management Authority)

Product Serious Eye Damage/Eye Irritation Data

This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Ingredient Eye Damage/Eye Irritation Data

No data available

Sensitization Information

Product Sensitization Data

Skin Sensitization Exposure Route

This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Respiratory Sensitization Exposure Route

This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Ingredient Sensitization Data

Skin Sensitization Exposure Route

If available, see data below.

Respiratory Sensitization Exposure Route

If available, see data below.

Chronic Toxicity Information

Product Specific Target Organ Toxicity Repeat Dose Data

Oral Exposure Route

If available, see ingredient data below.

Dermal Exposure Route

If available, see ingredient data below.

Inhalation (Dust/Mist) Exposure Route

If available, see ingredient data below.

Inhalation (Vapor) Exposure Route

If available, see ingredient data below.

Inhalation (Gas) Exposure Route

If available, see ingredient data below.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Oral Exposure Route

If available, see data below

Dermal Exposure Route

If available, see data below

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Inhalation (Vapor) Exposure Route

If available, see data below

Inhalation (Gas) Exposure Route

If available, see data below

Product Carcinogenicity Data

Oral Exposure Route

If available, see ingredient data below

Dermal Exposure Route

If available, see ingredient data below

Inhalation (Dust/Mist) Exposure Route

If available, see ingredient data below

Inhalation (Vapor) Exposure Route

If available, see ingredient data below

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Inhalation (Gas) Exposure Route

If available, see ingredient data below

Ingredient Carcinogenicity Data

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA
N-(1-Naphthyl)ethylenediamine dihydrochloride	1465-25-4	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	Does not apply

Oral Exposure Route

If available, see data below

Dermal Exposure Route

If available, see data below

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Inhalation (Vapor) Exposure Route

If available, see data below

Inhalation (Gas) Exposure Route

If available, see data below

Product Germ Cell Mutagenicity *in vitro* Data

This Product is by Weight 100% an Individual Pure Chemical Substance. If available, see ingredient data below.

Ingredient Germ Cell Mutagenicity *in vitro* Data

If available, see data below

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
N-(1-Naphthyl)ethylenediamine dihydrochloride (100%) CAS#: 1465-25-4	Mutation in microorganisms	<i>Salmonella typhimurium</i>	0.8 mg/plate	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Product Germ Cell Mutagenicity *in vivo* Data

Oral Exposure Route

If available, see ingredient data below

Dermal Exposure Route

If available, see ingredient data below

Inhalation (Dust/Mist) Exposure Route

If available, see ingredient data below

Inhalation (Vapor) Exposure Route

If available, see ingredient data below

Inhalation (Gas) Exposure Route

If available, see ingredient data below

Ingredient Germ Cell Mutagenicity *in vivo* Data

Oral Exposure Route

If available, see data below

Dermal Exposure Route

If available, see data below

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Inhalation (Vapor) Exposure Route

If available, see data below

Inhalation (Gas) Exposure Route

If available, see data below

Product Reproductive Toxicity Data

Oral Exposure Route

If available, see ingredient data below

Dermal Exposure Route

If available, see ingredient data below

Inhalation (Dust/Mist) Exposure Route

If available, see ingredient data below

Inhalation (Vapor) Exposure Route

If available, see ingredient data below

Inhalation (Gas) Exposure Route

If available, see ingredient data below

Ingredient Reproductive Toxicity Data

Oral Exposure Route

If available, see data below

Inhalation (Dust/Mist) Exposure Route

If available, see data below

Inhalation (Vapor) Exposure Route

If available, see data below

Inhalation (Gas) Exposure Route

If available, see data below

12. ECOLOGICAL INFORMATION

Ecotoxicity Not considered to be harmful to aquatic life

Product Ecological Data

This Product is by Weight 100% an Individual Pure Chemical Substance

Aquatic toxicity

Fish

If available, see ingredient data below

Crustacea

If available, see ingredient data below

Algae

If available, see ingredient data below

Ingredient Ecological Data

Aquatic toxicity

Fish

If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N-(1-Naphthyl)ethyle nedianine dihydrochloride (100%) CAS#: 1465-25-4	96 hours	None reported	LC ₅₀	33673 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

Crustacea

If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N-(1-Naphthyl)ethyle nedianine dihydrochloride (100%) CAS#: 1465-25-4	48 Hours	None reported	LC ₅₀	15251 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

Algae

If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
N-(1-Naphthyl)ethyle nedianine dihydrochloride (100%) CAS#: 1465-25-4	96 hours	None reported	EC ₅₀	4461 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

Other Information

Persistence and degradability

Product Biodegradability Data

This Product is by Weight 100% an Individual Pure Chemical Substance.

Ingredient Biodegradability Data

Chemical name	Test method	Biodegradation	Exposure time	Results
N-(1-Naphthyl)ethyle nedianine dihydrochloride (100%) CAS#: 1465-25-4	OECD Test No. 303: Simulation Test - Aerobic Sewage Treatment -- A: Activated Sludge Units; B: Biofilms	None reported	None reported	Not readily biodegradable

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Bioaccumulation

Product Bioaccumulation Data

This Product is by Weight 100% an Individual Pure Chemical Substance.

Partition Coefficient (n-octanol/water)

log K_{ow} = -0.45

Ingredient Bioaccumulation Data

Mobility

Soil Organic Carbon-Water Partition Coefficient

No data available

Water solubility

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging

Do not reuse empty containers.

Special instructions for disposal

Mix with combustible solvent. Incinerate material at an E.P.A. approved hazardous waste facility.

14. TRANSPORT INFORMATION

U.S. DOT

Not regulated

TDG

Not regulated

IATA

Not regulated

IMDG

Not regulated

Note:

No special precautions necessary.

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 reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

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TSCA Complies
DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

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
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

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	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

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U.S. State Right-to-Know Regulations

U.S. EPA Label Information

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Not applicable

NFPA and HMIS Classifications

NFPA	Health hazards - 2	Flammability - 0	Instability - 0	Physical and Chemical Properties -
HMIS	Health hazards - 2	Flammability - 0	Physical Hazards - 0	Personal protection - X - See section 8 for more information

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH	Immediately Dangerous to Life or Health
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
NDF	no data

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

Prepared By Hach Product Compliance Department

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Revision Note None

Disclaimer

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.

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End of Safety Data Sheet