

SAFETY DATA SHEET

This safety data sheet complies with the requirements of: SS586: 2008 (2014)

Issue Date 07-Jun-2021 Revision Date 28-Jun-2023 Version 1.5

Section 1: IDENTIFICATION

Product identifier

Product Name HNB Dilution Solvent

Other means of identification

Product Code(s) 2305042

Proper shipping name Not regulated

Safety data sheet number M01015

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended Use Water Analysis. Laboratory reagent.

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address Supplier

Hach Company, P.O.Box 389, Loveland, HACH SEA Headquarters,

CO 80539, USA, +1(970) 669-3050 1 Science Park Road, #05-09, East Wing, The Capricorn, Singapore Science Park II,

Singapore 117528, TEL (65) - 62659381

Emergency telephone number

Chemtrec 1-800-424-9300

Section 2: HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral	Category 4
Specific target organ toxicity (repeated exposure)	Category 2

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word - Warning

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Hazard statements

H302 - Harmful if swallowed

H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P330 - Rinse mouth

P501 - Dispose of contents/ container to an approved waste disposal plant

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P314 - Get medical advice/attention if you feel unwell

Other Hazards Known

Causes mild skin irritation

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Mixture

Substance

Not applicable

<u>Mixture</u>

Chemical name Formula		EC No (EU Index No)	CAS No	Percent Range
Ethylene glycol	C ₂ H ₆ O ₂	(603-027-00-1) 203-473-3	107-21-1	30 - 40%

Section 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.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids.

Consult a physician.

Skin contact Wash skin with soap and water.

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.

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Most important symptoms and effects, both acute and delayed

Symptoms See Section 11 for additional Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

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 Carbon monoxide, Carbon dioxide.

Special protective equipment for

fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required. Evacuate

personnel to safe areas.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

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 Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder,

sawdust). Take up mechanically, placing in appropriate containers for disposal.

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

Section 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Ensure adequate

ventilation.

Conditions for safe storage, including any incompatibilities

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

of children.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limits

Chemical name	Singapore	OSHA PEL	ACGIH TLV	NIOSH
Ethylene glycol	STEL: 50 ppm	(vacated) Ceiling: 50	STEL: 50 ppm vapor	NDF
(30 - 40%)	STEL: 127 mg/m ³	ppm	fraction	
CAS#: 107-21-1		(vacated) Ceiling: 125	STEL: 10 mg/m ³	
		mg/m³	inhalable particulate	
			matter, aerosol only	
			TWA: 25 ppm vapor	
			fraction	

Biological occupational exposure limits

Chemical name	CAS No	Singapore
Ethylene glycol	107-21-1	NDF
30 - 40%		

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.

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protectionNo special protective equipment required.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

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

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

Thermal hazards None under normal processing.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid

Appearance viscous Color colorless

aqueous solution

Odor sweet Odor threshold .1 ppm

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<u>Property</u> <u>Values</u> <u>Remarks • Method</u>

Molecular weight No data available

pH 5.8

Melting point / freezing point -14 °C / 6.8 °F

Initial boiling point and boiling range 104 °C / 219.2 °F

Evaporation rate 0.9 (water = 1)

Vapor pressure 21.002 mm Hg / 2.8 kPa at 25 °C / 77 °F

Relative vapor density 0.76

Specific gravity - VALUE 1 1.04

Partition coefficient $log K_{ow} = -0.16$

Soil Organic Carbon-Water Partition

Coefficient

 $log K_{oc} = -0.08$

Autoignition temperature No data available

Decomposition temperature No data available

Dynamic viscosity 1.7 cP (mPa s) at 26.7 °C / 80.06 °F

Kinematic viscosity 1.635 cSt (mm²/s) at 26.7 °C / 80.06 °F

Solubility(ies)

Water solubility

Water solubility classification	Water solubility_	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Acid	Soluble	> 1000 mg/L	25 °C / 77 °F
Acetone	Soluble	> 1000 mg/L	25 °C / 77 °F
Glycerol	Soluble	> 1000 mg/L	25 °C / 77 °F
Pyridine	Soluble	> 1000 mg/L	25 °C / 77 °F
Ketones	Soluble	> 1000 mg/L	25 °C / 77 °F

Other information

Metal Corrosivity

Steel Corrosion RateNo data availableAluminum Corrosion RateNo data available

Volatile Organic Compounds (VOC) Content

See ingredients information below

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Ethylene glycol	107-21-1	No data available	Χ

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Explosive properties

Upper explosion limitNo data availableLower explosion limitNo data available

Flammable properties

Flash point $> 115 \, ^{\circ}\text{C} \, / \, 239 \, ^{\circ}\text{F}$

Method CC (closed cup)

Flammability Limit in Air

Upper flammability limit:No data availableLower flammability limit:No data available

Oxidizing properties No data available.

Bulk density

No data available

Section 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 oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

Section 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation No known effect based on information supplied.

Eye contact No known effect based on information supplied.

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Skin contact No known effect based on information supplied.

Ingestion Harmful if swallowed.

Symptoms No information available.

Acute toxicity

Harmful if swallowed

Mixture

No data available.

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

Unknown Acute Toxicity

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

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	1,561.50
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Skin Corrosion/Irritation Data

Test data reported below.

C	hemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
	Ethylene glycol (30 - 40%) CAS#: 107-21-1	Open Irritation Test	Rabbit	555 mg	None reported	Mild skin irritant	RTECS

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Eye Damage/Eye Irritation Data

Test data reported below.

Chemical name	Test method	Species	Reported	Exposure	Results	Key literature

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			dose	time		references and sources for data
Ethylene glycol (30 - 40%) CAS#: 107-21-1	Standard Draize Test	Rabbit	500 mg	24 hours	Mild eye irritant	RTECS

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Sensitization Data

Test data reported below.

Skin Sensitization Exposure Route

Chemical name	Test method	Species	Results	Key literature references and sources for data
Ethylene glycol (30 - 40%) CAS#: 107-21-1	Based on human experience	Human	Not confirmed to be a skin sensitizer	IUCLID

STOT - single exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

Test data reported below.

Oral Exposure Route

STOT - repeated exposure

May cause damage to organs.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
Ethylene glycol	Human	768 mg/kg	None reported	Gastrointestinal	RTECS
(30 - 40%)	TDLo			Diarrhea	
CAS#: 107-21-1				Brain and Coverings	
				Convulsions or effect on seizure	
				threshold	
				Coma	

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture

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No data available.

Ingredient Carcinogenicity Data

No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Ethylene glycol	107-21-1	-	-	-	-

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	Does not apply

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

No data available.

Substance invitro Data

Test data reported below.

Chemical name	Test	Cell Strain	Reported	Exposure	Results	Key literature
			dose	time		references and sources for data
						sources for data
Ethylene glycol	DNA inhibition	Human lymphocyte	320 mmol/L	None reported	Positive test result for	RTECS
(30 - 40%)					mutagenicity	
CAS#: 107-21-1						

Mixture invivo Data

No data available.

Substance invivo Data

Test data reported below.

Oral Exposure Route

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Ethylene glycol (30 - 40%) CAS#: 107-21-1	Cytogenetic analysis	Rat	1200 mg/kg	None reported	Positive test result for mutagenicity	RTECS

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Reproductive Toxicity Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data

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Ethylene glycol (30 - 40%) CAS#: 107-21-1	Mouse TD∟₀	1700 mg/kg	None reported	Growth statistics (e.g. % reduced weight gain) Specific Developmental	RTECS
				Abnormalities Hepatobiliary system	
				Musculoskeletal system	

Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
Ethylene glycol	Mouse	1 mg/L	6 hours	Effects on Embryo or Fetus	RTECS
(30 - 40%)	TCLo			Fetotoxicity (except death e.g.	
CAS#: 107-21-1				stunted fetus) Effects on	
				Fertility Post-implantation	
				mortality (e.g. dead and/or	
				resorbed implants per total	
				number of implants)	

Aspiration hazard

Based on available data, the classification criteria are not met.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity Based on available data, the classification criteria are not met.

Unknown aquatic toxicity 0% of the mixture consists of components(s) of unknown hazards to the aquatic

environment.

Mixture

Aquatic Acute Toxicity
No data available.

110 data available.

Aquatic Chronic Toxicity

No data available.

Substance

Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Mixture

No data available.

Bioaccumulation

Mixture

No data available.

Partition coefficient $log K_{ow} = -0.16$

Mobility

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Soil Organic Carbon-Water Partition Coefficient

 $log K_{oc} = -0.08$

Other adverse effects

No information available.

Section 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.

Section 14: TRANSPORT INFORMATION

Note: No special precautions necessary.

IMDG

UN number or ID number
Transport hazard class(es)
Packing Group
Marine pollutant
Special precautions for user

Not regulated
Not regulated
Not applicable
Not applicable

ADR

UN number or ID number
Proper shipping name
Transport hazard class(es)
Packing Group
Environmental hazards
Not regulated
Not regulated
Not applicable

Special precautions for user None

<u>IATA</u>

UN number or ID number
Transport hazard class(es)
Packing group
Environmental hazards
Not regulated
Not regulated
Not applicable

Special precautions for user None

Additional information

Section 15: REGULATORY INFORMATION

Regulatory information

Singapore

Arms and Explosives Act

Not applicable.

Chemical Weapons Prohibition Act

Not applicable.

Environmental Protection and Management (Hazardous Substances) Regulations

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Not applicable.

Environmental Public Health Act

Dispose of waste product or used containers according to local regulations.

Fire Safety (Petroleum and Flammable Materials) Regulations

Not applicable.

Hazardous Waste (Control of Export, Import and Transit) Act

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

Misuse of Drugs Act

Not applicable.

POISON

Not applicable.

Strategic Goods (Control) Act

Not applicable.

Workplace Safety and Health Act

See section 8 for national exposure control parameters. Comply with the health and safety at work laws.

Pre-employment screening and appropriate health surveillance

Not applicable

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

TSCA Complies **DSL/NDSL** Complies **EINECS/ELINCS** Complies Complies **ENCS** Complies **IECSC** Complies **KECL - Existing substances** Complies **PICCS** Complies **TCSI AICS** Complies Complies **NZIoC**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

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

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NZIoC - New Zealand Inventory of Chemicals

Section 16: OTHER INFORMATION

Classification Guidance Used

Product is a mixture classified and labelled according to EC1272/2008.

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

SVHC: Substances of Very High Concern for Authorization:

Key literature references and sources for data

ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS (Chemical Carcinogenesis Research Information System)

CDC (Center for Disease Control)

CEPA (Canadian Environmental Protection Agency)

CICAD CICAD (Concise International Chemical Assessment Documents)

ECHA ECHA (The European Chemicals Agency)
EEA EEA (European Environment Agency)
EPA EPA (Environmental Protection Agency)

ERMA (New Zealands Environmental Risk Management Authority)

ECOSARS Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

FDA FDA (Food & Drug Administration)

GESTIS GESTIS (Information System on Hazardous Substances of the German Social Accident

Insurance)

HSDB (Hazardous Substances Data Bank)

INERIS INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM IPCS INCHEM (International Programme on Chemical Safety)
IUCLID IUCLID (The International Uniform Chemical Information Database)
NITE Japan National Institute of Technology and Evaluation (NITE)

NIH NIH (National Institutes of Health)

NIOSH NIOSH (National Institute for Occupational Safety and Health)
LOLI LOLI (List of Lists - An International Chemical Regulatory Database)

NDF no data

NICNAS Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH IDLH Immediately Dangerous to Life or Health

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

PEEN (Pan European Ecological Network)

RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS (Screening Information Dataset) for High Volume Chemicals

SYKE The Finnish Environment Institute (SYKE)
USDA USDA (United States Department of Agriculture)
USDC USDC (United States Department of Commerce)

WHO (World Health Organization)

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Ceiling Limit Value MAC Maximum Allowable Concentration

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

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regulations.

SKN* Skin designation SKN+ Skin sensitization Respiratory sensitization RSP+ Hazard Designation R Reproductive toxicant C Carcinogen

Μ mutagen

Prepared By Hach Product Compliance Department

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Restrictions on use None

Training Advice Get medical advice/attention if you feel unwell

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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.

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.**

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End of Safety Data Sheet

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