



1 – PRODUCT IDENTIFICATION

PRODUCT NAME: THERMAL ELITE LPN

PRODUCT USE: Water Treatment

Uses advised against

Processes involving extreme heat use advised against.

Processes involving the use of incompatible substances - refer to section 10.

Processes where workers who may be pregnant or breastfeeding could potentially come into direct contact with the undiluted product.

Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).

Any use involving aerosol formation or vapour or dust release in excess of the assigned workplace exposure limits where workers are exposed without suitable respiratory protective equipment (RPE).

The product is intended exclusively for industrial and professional use.

COMPANY:

Blue Ocean Solids, LLC

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24 HOUR EMERGENCY PHONE NUMBER: INFOTRAC: 1-800-535-5053 (NORTH AMERICA)

SDS DATE: 7/1/2020

SHELF LIFE: 2 years

2 – HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:



GHS03 Flame over circle

Ox. Sol. 3 H272 May intensify fire; oxidizer.



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed..



GHS08 Health hazard

Repr. 2. H361 Suspected of damaging fertility or the unborn child.



GHS05 Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



LABEL ELEMENTS

GHS LABEL ELEMENTS

The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms GHS03, GHS05, GHS06, GHS08

Signal word Danger

Hazard-determining components of labeling:

- Sodium nitrite
- Sodium hydroxide
- Cyclohexylamine
- 2-diethylaminoethanol

Hazard statements

- May intensify fire; oxidizer
- Causes severe skin burns and eye damage.
- Suspected of damaging fertility or the unborn child.

Precautionary statements

- Take any precaution to avoid mixing with combustibles.
- Do not eat, drink or smoke when using this product.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection.
- If on skin: Wash with plenty of water.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Classification system:

NFPA ratings (scale 0 - 4)



Health = 3
Fire = 1
Reactivity = 0

The substance possesses oxidizing properties.

HMIS-ratings (scale 0 - 4)



Health = 3
Fire = 0
Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.



3 – COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

DANGEROUS COMPONENTS:

7632-00-0	Sodium nitrite	500-100%
1310-73-2	Sodium hydroxide	2.5 – 10%
108-91-8	Cyclohexylamine	≤ 2.5%
100-37-8	2-diethylaminoethanol	≤ 2.5%

4 – FIRST-AID MEASURES

Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact:

DO NOT DELAY!

Immediately wash with water.

If skin irritation continues, consult a doctor.

After eye contact:

DO NOT DELAY!

Check for and remove any contact lenses.

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing:

DO NOT DELAY!

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Information for doctor:

Risk of pulmonary edema. Symptoms can appear later.

Danger of methaemoglobin formation after ingestion.

Treatment: Treat according to symptoms (decontamination, vital functions), treat with toluonium chloride to reverse methaemoglobinanaemia.

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

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 – FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents: Water.

For safety reasons unsuitable extinguishing agents:

Foam

Carbon Dioxide

ABC powder

Use only water!



Special hazards arising from the substance or mixture

Strong oxidizer. Contact with combustible or flammable substances may cause fire.

Not combustible but enhances combustion of other substances.

Many reactions may cause fire or explosion.

Gives off irritating or toxic fumes (or gases) in a fire.

Advice for firefighters

Protective equipment:

Do not inhale explosion gases or combustion gases.

Wear self-contained respiratory protective device.

Wear fully protective suit.

6 – ACCIDENTAL RELEASES MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid formation of dust.

Ensure adequate ventilation

Wear protective equipment. Keep unprotected persons away.

Environmental precautions:

Do not allow to penetrate the ground/soil.

Do not allow product to reach sewage system or any water course in the undiluted form.

Methods and material for containment and cleaning up:

Pick up mechanically.

Do not use combustible materials such as paper towels to clean up spills.

Send for recovery or disposal in suitable receptacles.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Protective Action Criteria for Chemicals

PAC-1:		
7632-00-0	Sodium nitrite	6.4 mg/m ³
1310-73-2	Sodium hydroxide	0.5 mg/m ³
100-37-8	2-diethylaminoethanol	6 ppm
108-91-8	Cyclohexylamine	1.8 ppm
PAC-2:		
7632-00-0	Sodium nitrite	71 mg/m ³
1310-73-2	Sodium hydroxide	5 mg/m ³
100-37-8	2-diethylaminoethanol	83 ppm
108-91-8	Cyclohexylamine	8.6 ppm
PAC-2:		
7632-00-0	Sodium nitrite	240 mg/m ³
1310-73-2	Sodium hydroxide	50 mg/m ³
100-37-8	2-diethylaminoethanol	500 ppm
108-91-8	Cyclohexylamine	30 ppm



7 – HANDLING AND STORAGE

Handling:

Precautions for safe handling

Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form. Safety showers and eye wash facilities should be available at the work area. Prevent formation of dust. The product must only be handled by authorized, trained and experienced professionals under strictly controlled conditions.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Prevent any seepage into the ground. Do not store on combustible materials such as wooden floors or wooden pallets.

Information about storage in one common storage facility: Store away from oxidizing agents.

Further information about storage conditions:

Keep receptacle tightly sealed. Protect from heat and direct sunlight. Store in cool, dry conditions in well sealed receptacles.

Specific end use(s) No further relevant information available.

8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the remaining constituent has no known exposure limits.

Table with 2 columns: Constituent Name and Exposure Limits (PEL, REL, TLV). Rows include Sodium hydroxide, Cyclohexylamine, and 2-diethylaminoethanol.

Additional Occupational Exposure Limit Values for possible hazards during processing:

Table with 2 columns: Constituent Name and Exposure Limits (PEL, REL, TLV). Row includes Sodium hydroxide.



Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

Select PPE appropriate for the operations taking place taking into account the product properties.

General protective and hygienic measures:

Do not breath dust.

Do not eat, drink, smoke or sniff while working.

Take note of assigned Workplace Exposure Limits.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Pregnant women should strictly avoid inhalation or skin contact.

A safe system of work must be formulated and followed to ensure that workers who may be pregnant or breastfeeding do not come into direct contact with the product.

Ensure that eyewash stations and safety showers are close to the workstation location.

Breathing equipment:

Use suitable respiratory protective device in case of insufficient ventilation.

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Tightly sealed goggles



Body protection:
 Impervious protective clothing
 Body protection must be chosen depending on product properties, activity and possible exposure.

9 – PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Solid
Color:	Whitish
Odor:	Mild
Odor threshold:	Not determined

pH-value (40 g/l) at 20 °C (68 °F):	11.4
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Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

Flash point:	>93 °C (>199.4 °F)
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Flammability (solid, gaseous):	Not determined.
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Decomposition temperature:	Not determined.
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Auto igniting:	Product is not self-igniting.
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Danger of explosion:	Product does not present an explosion hazard.
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Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

Vapor Pressure:	Not applicable.
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Density at 20° C (68° F):	1.9 g/cm ³ (15.8555 lbs/gal)
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Relative Density:	Not determined.
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Vapor Density:	Not applicable.
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Evaporation Rate:	Not applicable
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Solubility in / Miscibility with Water:	Soluble.
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Partition Coefficient (n-octanol/water):	Not determined.
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Viscosity:

Dynamic:	Not applicable.
Kinematic:	Not applicable.

Other Information	NOTE: The physical data presented above are typical values and should not be construed as a specification.
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10 – STABILITY AND REACTIVITY

Reactivity No further relevant information available.

Chemical stability

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Possibility of hazardous reactions

May explode on heating excessively.
 The product decomposes on contact with acids producing toxic fumes (nitrogen oxides).



The product is a strong oxidant and reacts with combustible and reducing materials causing fire and explosion hazard.

Conditions to avoid No further relevant information available.

Incompatible materials:

- Combustible materials.
- Strong oxidizing agents.
- Strong acids.
- Reducing agents.

Hazardous decomposition products:

- Phosphorus compounds
- Carbon monoxide and carbon dioxide
- Nitrogen oxides (NOx)

11 – TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Primary irritant effect:

on the skin: Strong caustic effect on skin and mucous membranes.

on the eye:

- Strong caustic effect.
- Strong irritant with the danger of severe eye injury.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

- Toxic
- Corrosive
- Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

ROUTES OF EXPOSURE: The component substances can variously be absorbed into the body by inhalation, through the skin and by ingestion.

Absorption of significant amounts of sodium nitrite may cause nausea, headache, dizziness, weakness and shortness of breath. In severe cases methaemoglobinaemia and a lowering of blood pressure may occur and could prove fatal. Symptoms may include a greyish-blue discoloration of the skin and mucous membranes, rapid shallow breathing, lowered blood pressure and increased heart rate. Exposure may result in death. The effects may be delayed. Medical observation is indicated.

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.



12 – ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability The organic portion of the product is biodegradable.

Behavior in environmental systems:

Bioaccumulative potential Product is not expected to bioaccumulate.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Very toxic for fish

Additional ecological information:

General notes:

- Water hazard class 2 (Self-assessment): hazardous for water
- Do not allow product to reach ground water, water course or sewage system.
- Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- Danger to drinking water if even small quantities leak into ground.
- Very toxic for aquatic organisms.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13 – DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation:

Recommended Hierarchy of Controls:

- Minimize waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Contact waste processors for recycling information.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

Uncleaned packaging:

Recommendation:

Container remains hazardous when empty. Continue to observe all precautions.

Containers, even those that are “empty,” may contain residues that can develop flammable and/or hazardous gases and vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

Recommended cleansing agent: Water, if necessary with cleansing agents.





14 – TRANSPORT INFORMATION

UN-Number

DOT, ADR, IMDG, IATA

UN3084



UN proper shipping name	
DOT	Corrosive solids, oxidizing, n.o.s. (SODIUM HYDROXIDE, SODIUM NITRITE)
ADR	3084 Corrosive solids, n.o.s. (SODIUM HYDROXIDE, SODIUM NITRITE), ENVIRONMENTALLY HAZARDOUS
IMDG	CORROSIVE SOLID, OXIDIZING N.O.S. (SODIUM HYDROXIDE, SODIUM NITRITE), MARINE POLLUTANT
IATA	CORROSIVE SOLID, OXIDIZING, N.O.S. (SODIUM HYDROXIDE, SODIUM NITRITE)
Transport hazard class(es)	
DOT	
	
Class	8 Corrosive substances
Label	8, 5.1
ADR	
	
Class	8 Corrosive substances
Label	8+5.1
IMDG	
	
Class	8 Corrosive substances
Label	8/5.1
IATA	
	
Class	8 Corrosive substances
Label	8 (5.1)
Packing Group	
DOT, ADR, IMDG, IATA	II
Environmental hazards:	Product contains environmentally hazardous substances: Sodium nitrite
Marine pollutant:	Symbol (fish and tree)
Special marking (ADR):	Symbol (fish and tree)



Special precautions for user	Warning: Corrosive substances
Hazard identification number (Kemler code):	85
EMS Number:	F-A,S-Q
Segregation groups	Alkalis
Stowage Category	E
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional Information:	
ADR	
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
IMDG	
Limited quantities (LQ)	1 kg
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
UN "Model Regulation":	UN 3084 CORROSIVE SOLIDS, OXIDIZING, N.O.S. (SODIUM HYDROXIDE, SODIUM NITRITE), 8 (5.1), II, ENVIRONMENTALLY HAZARDOUS

15 – REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
Sara

Section 355 (Extremely hazardous substances):	
108-91-8	Cyclohexylamine

Section 313 (Specific toxic chemical listing):	
7632-00-0	Sodium nitrite

TSCA (Toxic Substances Control Act):	
All components have the value ACTIVE.	

Hazardous Air Pollutants	
None of the ingredients is listed.	

Proposition 65

Chemicals known to cause cancer:	
None of the ingredients is listed.	

Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	



Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Cancerogenity Categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value)

108-91-8	Cyclohexylamine	A4
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NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms GHS03, GHS05, GHS06, GHS08

Signal word Danger

Hazard-determining components of labeling:

- Sodium nitrite
- Sodium hydroxide
- Cyclohexylamine
- 2-diethylaminoethanol

Hazard statements

- May intensify fire; oxidizer
- Toxic if swallowed.
- Causes severe skin burns and eye damage.
- Suspected of damaging fertility or the unborn child.

Precautionary statements

- Take any precaution to avoid mixing with combustibles.
- Do not eat, drink or smoke when using this product.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection.
- If on skin: Wash with plenty of water.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

• **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 – OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Date of preparation / last revision 7/1/2020

Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)



IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Ox. Sol.3: Oxidizing solids – Category 3
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Repr. 2: Reproductive toxicity – Category 2