Revision Date 01-20-2020

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

SAFETY DATA SHEET

Product Name	**HB-747 Closed Loop Treatment**
Synonyms	n/a
CAS Number	mixture
Product Use	Industrial Water Treatment Compound Closed Recirculating Loop Corrosion & Scale Inhibitor

Company	H & B Industries, Inc.
Address	PO Box 29838 Dallas, TX 75220
Telephone	214-350-1984
Emergency	**INFOTRAC (800) 535-5053 US & Canada**
Emergency	**-CHEMTREC (USA) 800-424-9300**

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview: DANGER: Causes severe skin burns and eye damage. Toxic if swallowed. Very toxic to aquatic life.
Keep out of reach of children. Avoid contact with skin, eyes and clothing.
Skin: Causes severe skin burns and eye damage.
Eyes: Causes serious eye damage.
Inhalation: Avoid breathing vapors or mist. Prolonged or excessive inhalation may cause respiratory tract irritation or burns of the mucous membranes.
Ingestion: Toxic if swallowed.
Chronic exposure: No known carcinogenic effects.

SYMBOLS

Precautionary Statements

Read label before use. Keep away from children.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, eye and face protection. Avoid release to the enviroment.
Use only outdoors or in well-ventilated areas.

3. Composition / Information on Ingredients

Component	CAS Number	Weight %
sodium hydroxide	1310-73-2	< 3.0
sodium nitrite	7632-00-0	< 25.0

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret. This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4. FIRST AID MEASURES

from source of exposure to fresh air.

Inhalation Ingestion
Ingestion may cause methemoglobinemia. Initial manifestation of methemoglobinemia is cyanosis, characterized by navy lips, tongue and mucous membranes, with skin color being slight gray. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia. Seek medical attention. Do not induce vomiting unless directed by medical personnel.

Skin
Causes severe eye irritation and burns. Flush immediately with large amounts of water for at least 15 minute s.
Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.

Eye
Causes skin irritation and burns. Flush immediately with large amounts of water while removing contaminated clothing.
Wash contaminated clothing before reuse.

Possible nasal irritation. Remove exposed person. Local exhaust ventilation may be necessary to control ventilation for confined spaces. Use explosion proof ventilation equipment.

SECTION 5. FIREFIGHTING MEASURES

Suitable Extinguishing Meida
Use dry chemical, foam, or carbon dioxide to extinguish fire. Water may be ineffective but should be used to cool fire- exposed containers, structures and to protect personnel. Use water to dilute spills and to flush them away from sources of ignition.

Fire Fighting Procedures
Do not flush down sewers or other drainage systems. Exposed firefighters must wear NIOSH approved positive pressure self contained breathing apparatus with full mask and full protective clothing.

Unusual Fire and Explosion Hazards
Keep away from strong acids and strong oxidizers.

Combustion Products
Irritating substances may be emitted upon thermal decomposition. Thermal decomposition products may include nitrogen oxides.

6. Accidental Release Measures

Use suitable safety equipment including nitrile gloves and safety glasses. Stop leak if possible to do so without risk.

Small spills clean up with sand or other noncombustible absorbent material and place into containers for later disposal. Large spills contain with dike ahead of spill for later disposal. (See Section 8) Flush with water to clean contaminated area.
Do not flush to sewer or waterways. Prevent release to the environment if possible.

7. Handling and Storage

Handling
Do not get in eyes, on skin or clothing. Do not breathe vapor or mists. Keep container closed. Use with adequate ventilation. Use good personal hygiene practices. Wash hands before eating, drinking or smoking. Remove contaminated clothing and clean before re-use.

Storage
Store in tightly closed containers in cool, dry, well-ventilated area away from heat, sources of ignition and incompatibles. Ground lines and equipment to reduce possibility of static spark initiated fire. Store between 0 C (32 F) - 37.7 C (100 F). Best if stored out of direct sunlight. Keep container closed and upright when not in use. Protect container against physical damage.

8. Exposure Controls / Personal Protection

Exposure Limits
Component: sodium hydroxide - ceiling occupational exposure limit = 2 mg/m^3, ; Occupational exposure limit is based on irritation effects and its adjustment to compensate for unsual work schedules is not required.

Engineering Controls

Personal Protective Equipment (PPE)

Protection	Wear chemical saftey goggles (glasses). Have eye wash stations available where eye contact can occur.
Skin Protection	Avoid skin contact. Wear gloves impervious to conditions of use. Additional protection may be necessary to prevent skin contact including apron, face shield or boots.
Respiratory Protection	If exposure limits are exceeded, NIOSH approved repiratory protection should be worn. For unknown concentrations and for oxygen deficient atmospheres use a NIOSH approved air supplied respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Flash Point	> 93 C (200 F)	**Lower Flammability Limit**	N/A
Autoignition Temperature	N/A	**Upper Flammability Limit**	N/A
Boiling Point	100 C	**Specific Gravity (g/mL @ 25 C)**	1.150 - 1.170
Melting Point	N/A	**% Volatile**	N/A
Vapor Pressure	N/A	**Evaporation Rate (water=1)**	1
Vapor Density (Air=1)	N/A	**Viscosity (cP)**	1 - 25
Solubility in water	soluble	**Octanol/Water Partition Coefficient**	N/A
Pour Point	0 C / 32 F	**pH (neat @ 25 C)**	12.20 - 13.20
Odor	characteristic	**Molecular Weight**	mixture
Appearance	clear dark red liquid		

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability Stable

Possibility of Hazarous Reactions Hazardous polymerization will not occur

Conditions to Avoid None known

Incompatible Materials strong acids, strong bases, strong oxidizers

Hazardous Decomposition The following may form during or at extremely high temperatures: Oxides of nitrogen

Signs and Symptoms of Overexposure

11. Toxicological Information

Eye and nasal irritation with itching of the skin.

Acute Toxicity LD50 (oral, rat) (sodium nitrite) 85 mg/kg
LC50 (inhalation, rat) (sodium nitrite) 5.5 mg/L / 4h
LD50 (oral, sodium hydroxide): Acute: 273 mg/kg [Rat]. 365 mg/kg [Rat]

Eyes	May cause redness and irritation
Skin	May cause redness and irritation
Inhalation	No significant irritation expected from a single short-term exposure
Ingestion	Low ingestion hazard in normal use.

Chronic Toxicity None known

Eyes	None known
Skin	None known
Inhalation	None known
Ingestion	Repeated ingestion or swallowing large amounts may cause diarrhea or vomiting

12. Ecological Information

Ecotoxicity Acute Effects:

LC50 (fish) (sodium nitrite): 0.56 - 1.78 mg/L (96 hr) EC50 (daphnia) (sodium nitrite): 12.5 - 100 mg/L (48 hr)

Bioaccumlation Potential: (sodium nitrite) Log Pow -3.7 (@ 25 C)

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other state and local regulations. Dispose in accordance with local, provincial and federal regulations at a licensed hazardous waste disposal facility. It is the responsibility of the end user to determine if the material meets the criteria of hazardous waste at the time of disposal. Empty containers that have not been rinsed and purged, contain residual material and must be disposed of or recycled in accordance with local regulations.

United States Department of Transportation (U.S. DOT)
UN2922, Corrosive Liquids, Toxic, N.O.S. (sodium hydroxide and sodium nitrite), 8 (6.1), PG III

International Maritime Dangerous Goods (IMO / IMDG)
Corrosive Liquids, Toxic, N.O.S., 8 (6.1), UN2922, PG III (contains sodium hydroxide and sodium nitrite)

Interntational Air Transport Association (IATA)
UN2922, Corrosive Liquids, Toxic, N.O.S. (sodium hydroxide and sodium nitrite), 8 (6.1), PG III

Transportation of Dangerous Goods (TDG)
UN2922, Corrosive Liquids, Toxic, N.O.S. (sodium hydroxide and sodium nitrite), 8 (6.1), PG III

Agreement on Dangerous Goods by Road (ADR)
Corrosive Liquids, Toxic, N.O.S., 8 (6.1), UN2922, PG III (contains sodium hydroxide and sodium nitrite)

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):
UN2319, TERPENE HYDROCARBONS, N.O.S., 3, III

IATA (International Air Transport Association):
UN2319, TERPENE HYDROCARBONS, N.O.S., 3, III

IMDG (International Maritime Dangerous Goods):
UN2319, TERPENE HYDROCARBONS, N.O.S., 3, III, Marine Pollutant (D-LIMONENE) , Flash Point:46 °C(115 °F)

Special Notes: : Materials included in Class 3, Flammable Liquids, No subsidi- ary, Packing Group III, having a flashpoint greater than 37.8 °C and are packaged in small means of containment (<450 L), may be shipped as Not-Regulated when solely transported by

15. Regulatory Information

U.S. Federal Regulations

Clean Air Act (CCA) This product does not contant any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61)

EPA SARA Title III Chemical Listings

Section 302 Extremely Hazardous Substances (40 CFR 355) None
Section 304 CERCLA Hazardous Substances (40 CFR 302) sodium hydroxide
sodium nitrite

Section 311/312 Hazard Class (40 CFR 370)

Acute: Yes **Chronic:** No **Fire:** No Yes

Section 313 T Section 313 Toxic Chemicals (40CFR372)

U.S. State Regulations

Massachusetts / New Jersey / Pennsylvania

sodium nitrite regulated by MA / NJ / PA Right-to-Know laws-Know laws

International Regulations

DSL EINECS AICS IECSC KECL NZIoC PICCS

Canadian Environmental Protection Act

Canadian Workplace Hazardous Materials Information System (WHMIS)

Chemical Inventories TSCA

B / Toxic material causing immediate and serious toxic effects Class D2B / Toxic material causing other toxic effects

All of the components of this product are included on the Canadian Domestic Substances list (DSL).

Class E / Corrosive Material

All ingredients are on the inventory. All ingredients are on the inventory. All ingredients are on or exempted from the inventory. All ingredients are on the inventory. All ingredients are on the inventory. All ingredients are on the inventory. All ingredients are on the inventory. All ingredients are on the inventory.

Class D

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SECTION16. OTHER INFORMATION

National Fire Protection Association (NFPA) Ratings This information is intended solely for individuals trained in the NFPA. **Health:** **2** 0 - LEAST **Flammability:** **0** 1 - SLIGHT **Reactivity:** **1** 2 - MODERATE **Other** **-** 3 - HIGH 4 - EXTREME

Revisions Date January 20, 2020While H&B Industries, Inc. believes this data is accurate as of revision date, we make no warranty with respect to the data and we expressly disclaim all liability for reliance there on. The data is offered solely for your information, investigation, and verification.

Abbreviations and acronyms:

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances

MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	N/A	Not Available