Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

Product identifier:

Identification as on the label/Trade name: Liebermann Reagent

Relevant identification uses of the substance and uses advised against:

Identified uses: The Liebermann Reagent is designed to identify unknown substances.
Uses advised against: No other uses are advised.

Details of the supplier of the Safety Data Sheet:

TN Scientific LLC
Knoxville, TN
37931 USA

Emergency telephone numbers:

24-hour Emergency Contact:
CHEMTREC 24-hour: +1-800-424-9300

Section 2: Hazards Identification

Classification of the substances or mixture:
The mixture is classified according to: Regulation EC 1272/2008 [EU-GHS/CLP]

Hazard classes/Hazard categories:	Hazard Statement:
Acute Toxicity (Category 4)	H302
Skin Corrosive (Category 1A)	H314
Aquatic Acute (Category 2)	H401

Label elements:

Hazard pictograms:

Signal Word: Danger.
Hazard Statements:
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H401 Toxic to aquatic life.
Precautionary Statements:
P260 Do not breathe dusts or mists.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local regulations.

Section 4: First-Aid Measures

Description of first aid measures:

Inhalation: Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Ingestion: Wash out mouth with water. In the event of swallowing, induce patient to drink plenty of water. Get medical attention immediately.
Skin contact: Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact: Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Most important symptoms and effects, both acute and delayed:
On the skin: Causes poorly healing wounds. Strong caustic effect on skin and mucous membranes.
On the eye: Burns, risk of blindness. Strong caustic effect.
After inhalation: Burns of the mucous membranes, coughing and dyspnea.
Indication of any immediate medical attention and special treatment needed: Treat symptomatically.

Section 5: Fire-Fighting Measures

Extinguisher media:

Suitable extinguishing media: In case of fire, use water spray (fog), foam, dry chemical or CO_2
Unsuitable extinguishing media: None known.
Special exposure hazards: In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products: Decomposition products may include the following materials: sulfur oxides.
Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and Self- Contained Breathing Apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment (see section 8).
Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for containment and cleaning up:

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7: Handling and Storage

Precautions for safe handling:

Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous.

Conditions for safe storage, including incompatibilities:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Separate from alkalis. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8: Exposure Controls and Personal Protection

Control parameters:

Occupational exposure limits:

CAS No.	Ingredient	Value
7664-93-9	Sulphuric acid	LTEL: 0.05 mg/m^3

Exposure controls:

Appropriate engineering controls: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures, such as personal protective equipment:

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. 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. Recommended: Combination filter, e.g. DIN 3181 ABEK or Self-Contained Breathing Apparatus (SCBA)

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations <1 hour (breakthrough time): Fluorinated rubber - FKM

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: Tightly-fitting goggles and face shield.

Skin protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: chemical-resistant protective suit.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Environmental exposure controls: Technical measures: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance (form): Liquid.
Color: Transparent yellow / brown
Odor: Odorless.
Odor threshold: No data available.
pH (concentration): ~1
Melting point/range (°C): No data available.
Boiling point/range (°C): No data available.
Flash point (°C): No data available.
Evaporation rate: No data available.
Flammability (solid, gas): No data available.
Upper/lower flammability/explosive limits: No data available.
Vapor pressure: No data available.
Vapor density: No data available.
Relative density: ~1.2
Water solubility (g/L): Soluble.
n-Octanol/Water partition coefficient: No data available.
Auto-ignition temperature: No data available.
Viscosity, dynamic: No data available.

Section 10: Stability and Reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability: The product is stable.
Possibility of hazardous reactions: None known.
Conditions to avoid: Highly reactive with water and alkalis.
Materials to avoid: Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis.
Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11: Toxicological Information

Information on toxicological effects:
Acute toxicity: Harmful if swallowed.
Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: No data available.
Respiratory or skin sensitization: No data available.
Germ cell mutagenicity: No data available.
Carcinogenicity: No data available.
Reproductive toxicity: No data available.
STOT-single exposure: No data available.
STOT-repeated exposure: No data available.
Aspiration hazard: No data available.

Section 12: Ecological Information

Toxicity: Toxic to aquatic life.
Sodium nitrite, CAS 7632-00-0
Short–term toxicity to fish: LC50 (4 days) 540 - 26 300 µg/L
Long–term toxicity to fish: NOEC (29 days) 1.05 - 21 mg/L
Persistence and degradability: No data available.
Bioaccumulative potential: No data available.
Mobility in soil: No data available.
Results of PBT& vPvB assessment: No data available.

Section 13: Disposal Considerations

Waste treatment methods: Examine possibilities for re-utilization. Product residues and uncleaned empty containers should be packaged, sealed, labelled, and disposed of or recycled according to relevant national and local regulations.
Product/packaging disposal: Dispose of as unused product.

Section 16: Other Information

Indication of changes: GHS aligned.
Relevant classification and H statements (number and full text):
H272 May intensify fire; oxidiser.

H301 Toxic if swallowed.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H400 Very toxic to aquatic life.
H401 Toxic to aquatic life.
Training instructions: Use as instructed.
Further information: This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.
Notice to readers: Employers should use this information only as a supplement to other information gathered by them and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.