Section 1: Product and Company Identification

Gulf Engineering Co. LLC  
611 Hill Street  
Jefferson, LA 70121  
Business: (800) 347-4749  
Technical: (504) 602-1824

Product Name: Gessco™ 510*  
Generic Name: Aqueous solution of sodium nitrite and borax  
Synonyms: NA  
Product Description: Engine and closed-loop cooling system treatment  
CAS #: NA – blend  
Date of Revision: 5/26/2006

The fourth digit of the product number designates the container size:  
- Gessco™ 510-1 - 5 gallon  
- Gessco™ 510-2 - 30 gallon  
- Gessco™ 510-3 - 55 gallon

24-Hour Emergency Phone Number: (800) 424-9300 (CHEMTREC)

Section 2: Hazard Identification

Emergency Overview: DANGER! Strong oxidizer. Contact with other material may cause fire. Heat, shock, or contact with other material may cause fire or explosive decomposition. DANGER! Toxic. Harmful if swallowed, inhaled or absorbed through skin. DANGER! Corrosive. Causes irritation or burns to skin, eyes and respiratory tract.

OSHA Regulatory Status: This material is considered hazardous under the OSHA standard.

Potential Health Effects:  
Inhalation: Toxic. Causes irritation to the respiratory tract and systemic poisoning with symptoms paralleling ingestion.

Ingestion: Toxic. Can irritate the mouth, esophagus, stomach, etc. Excessive amounts affect the blood and blood vessels. Signs and symptoms of nitrite poisoning include intense cyanosis, nausea, dizziness, vomiting, collapse, spasms of abdominal pain, rapid heart beat, irregular breathing, coma, convulsions, and death due to circulatory collapse. **Estimated lethal dose 5 to 10 grams (about ¼ oz).**

Skin Contact: Corrosive if contact is prolonged. Soreness, redness, pain and destruction of skin may result. May be absorbed through the skin causing systemic poisoning; symptoms may parallel ingestion.

Eye Contact: Irritant, corrosive to eye tissues. Tearing, redness, pain, impaired vision are symptoms.

Chronic Exposure: Repeated exposure through any route may cause symptoms similar to acute toxicity. May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Sodium nitrate may react with secondary or tertiary amines to form nitrosamines (certain nitrosamines are cancer suspect agents).

Aggravation of Pre-existing Conditions: No information found.

Target Organs: Blood, cardiovascular system, smooth muscle.
Section 3: Composition / Information On Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Weight %</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium nitrite</td>
<td>7632-00-0</td>
<td>15 – 25</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Sodium borate pentahydrate</td>
<td>12179-04-3</td>
<td>4 – 8</td>
<td>None</td>
<td>10 ppm; 2 mg/m³</td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>2 – 4</td>
<td>10 ppm; 2 mg/m³</td>
<td>10 ppm; 2 mg/m³</td>
</tr>
</tbody>
</table>

Non-hazardous components may or may not be listed. Carcinogens are listed when present at 0.1% or more; components which are otherwise hazardous according to OSHA are listed when present at 1.0% or more. This is not intended to be complete compositional disclosure. See Section 15 for applicable states right to know and other regulatory information.

Section 4: First Aid Measures

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

**Skin:** Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**Note to Physicians:** Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. If cyanosis is severe, intravenous injection of Methylene Blue, 1mg/kg of body weight may be of value.

Section 5: Fire Fighting Measures

**Fire:** This product is not itself flammable but contains oxidizers that can ignite or support combustion of other substances. Contact with oxidizable substances may cause extremely violent combustion. May explode when heated to 537°C (1000°F) or on severe impact or on contact with cyanides, ammonium salts, cellulose, lithium, potassium plus ammonia, and sodium thiosulfate.

**Explosion:** NA

**Extinguishing Media:** Water or water spray in early stages of fire. Foam may also be used, but avoid the use of multi-purpose dry chemical fire extinguishers where contact with sodium nitrite may occur. Water streams may scatter molten material.

**Special Precautions:** Strong oxidizer when water is removed. Combustible materials may catch fire more easily after being wet with sodium nitrite and dried. Product intensifies combustion of other materials. Fires are difficult to extinguish. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Decomposition of sodium nitrite may leave a caustic residue.

**NFPA Rating:** Health - 2  Flammability - 0  Reactivity - 1  Other - NA
**Section 6: Accidental Release Measures**

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

**Section 7: Handling and Storage**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

**Section 8: Exposure Control / Personal Protection**

**Exposure Guidelines:** CAS # 12179-04-3  OSHA PEL None  ACGIH TLV 10ppm, 2 mg/m³

**Personal Protective Equipment:**

**Skin Contact:** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Contact:** Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Inhalation:** Use NIOSH approved vapor respirator if exposure is unknown or exceeds permissible limits. A respiratory protection program that meets OSHA’s 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Engineering Controls:** A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

**Section 9: Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear, purple-red liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>-10°C (14°F)</td>
</tr>
<tr>
<td>Melting Point</td>
<td>-10°C (14°F)</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>105°C (221°F)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>ND</td>
</tr>
<tr>
<td>Lower Explosive Limit</td>
<td>ND</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>ND</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>ND</td>
</tr>
<tr>
<td>Decomposition Temp</td>
<td>ND</td>
</tr>
<tr>
<td>Specific Gravity (g/mL)</td>
<td>1.21</td>
</tr>
<tr>
<td>pH</td>
<td>12.0</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Complete</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>68%</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>ND</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>18 mm @ 25°C (77°F)</td>
</tr>
<tr>
<td>Vapor Density (air = 1.0)</td>
<td>ND</td>
</tr>
<tr>
<td>Viscosity</td>
<td>16 cP @ 21°C (70°F)</td>
</tr>
<tr>
<td>log (Part. Coeff oct-H₂O)</td>
<td>ND</td>
</tr>
<tr>
<td>ND</td>
<td></td>
</tr>
</tbody>
</table>
### Section 10: Stability and Reactivity

**Chemical Stability:** This product is stable in closed containers at room temperature. The contained sodium nitrite will slowly oxidize to sodium nitrate when exposed to air.  

**Hazardous Decomposition Products:** carbon oxides (CO, CO₂) nitrogen oxides (NO, NO₂...) sulfur oxides (SO₂, SO₃...), small amounts of aromatic and aliphatic hydrocarbons.  

**Incompatibilities:** Reacts vigorously with reducing materials and is incompatible with many substances including ammonium salts, cellulose, cyanides, lithium, potassium plus ammonia, sodium thiosulfate, aminoguanide salts, butadiene, phthalic acid, phthalic anhydride, reducants, sodium amide, sodium disulphite, sodium thiocyanate, urea, wood and organic matter.  

**Conditions to Avoid:** Incompatible materials, combustible materials, reducing agents, strong acids.

### Section 11: Toxicological Information

**Acute Dose Effects:**  
Sodium nitrite: Eye: rabbit: 500 mg/24H Mild; Ingestion: Oral, mouse: LD₅₀ = 175 mg/kg; Oral, rabbit: LD₅₀ = 186 mg/kg; Oral, rat: LD₅₀ = 180 mg/kg; Inhalation, rat: LC₅₀ = 5.5 mg/m³/4H  

Postassium hydroxide: Eye Irritation Data(Rabbit, non-std test, 1 mg/24 H, rinse): Moderate; Skin Irritation Data (std Draize, 50 mg/24 H): Human, Severe; Rabbit, Severe; Oral rat LD₅₀: 273 mg/kg  

Sodium borate pentahydrate: Eye irritation: Draize test in rabbits produced eye irritation; not considered to be a human eye irritant in normal industrial use.; Ingestion: LD₅₀ in rats is 3,200 to 3,400 mg/kg; Skin/dermal: LD₅₀ in rabbits is greater than 2,000 mg/kg of body weight; Inhalation: LC₅₀ in rats is greater than 2.0 mg/L (or g/m³); Skin irritation: Non-irritant.

### Section 12: Ecological Information

**Environmental Fate:** CAS# 7632-00-0: This chemical is not expected to cause oxygen depletion in aquatic systems. It has a high potential to affect secondary waste treatment microorganisms. It has a moderate to high potential to affect aquatic organisms. It has a low potential to affect the germination of some plants.  

**Ecotoxicity:** CAS# 7632-00-0: Acute aquatic effects: 96-hour LC₅₀; Fathead minnow: GT 100 mg/L 96-hour LC₅₀; Water flea: 55 mg/L 24-hour LC₅₀; Mosquito fish: 8.1 mg/L.

### Section 13: Disposal Considerations

As a waste, this material in its raw form IS NOT considered a HAZARDOUS WASTE under RCRA (29 CFR 261).  

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

### Section 14: Transport Information

**Proper Shipping Name:** Nitrites, inorganic, aqueous solution, n.o.s.. (contains SODIUM NITRITE and POTASSIUM HYDROXIDE)
Section 15: Regulatory Information

TSCA Chemical Inventory: All of the chemicals in this product are listed on the TSCA Inventory.

TSCA Sec 4 Chemical Test Rule: None of the chemicals in this product are under a Chemical Test Rule.

TSCA Sec 8(d): None of the chemicals in this product are on the Health and Safety Reporting List.

TSCA Sec 12(b) Notices of Export: None of the chemicals in this product are on this list.

TSCA Significant New Use Rule (SNUR): None of the chemicals in this product are on this list.

SARA Sec 302 (EHS) TPQ: None of the chemicals in this product have a TPQ.

SARA Sec 304 (EHS) RQ: None of the chemicals in this product have a RQ.

SARA Sec 311/312: Acute – YES; Chronic – YES; Fire – YES; Release of Pressure – NO; Reactivity – YES

SARA 313 List: Sodium nitrite is reportable under Section 313 Title III and 40 CFR Part 372

CERCLA Hazardous Substances and corresponding RQs: 476 lbs (47 gal) based on Sodium nitrite.

RCRA: None of the chemicals in this product are on this list.

Clean Air Act: Hazardous Air Pollutants? NO Class 1 Ozone Depleters? NO Class 2 Ozone Depleters? NO


Chemical Weapons Convention: None of the chemicals in this product are on this list.

Drug Enforcement Agency (DEA) CDTA: None of the chemicals in this product are on this list.

OSHA: None of the chemicals in this product are considered Highly Hazardous by OSHA.

FDA: NA

State Right-to-Know Lists: Potassium hydroxide is found on the Right-to-Know lists of California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts. Sodium nitrite is on the Right-to-Know lists of California, New Jersey, Pennsylvania and Massachusetts.
Section 16: Other Information

Abbreviations and acronyms used:

ACGIH  American Congress of Governmental Industrial Hygienists  NA  not applicable, not available
ANSI  American National Standards Institute  NIOSH  National Institute for Occupational Safety and Health
atm  atmosphere (pressure unit)  ND  not determined
BOD  biological oxygen demand  NTP  National Toxicology Program
CAS  Chemical Abstracts Service  OC  open cup
CC  closed cup  OSHA  Occupational Safety and Health Administration
CDTA  Chemical Drug and Trafficking Act  Part  partition
COC  Cleveland Open Cup  PEL  permissible exposure limits
COD  chemical oxygen demand  ppb  parts per billion
coeff. coefficient  PPE  personal protective equipment
CFR  Code of Federal Regulations  ppm  parts per million
CPR  cardio-pulmonary resuscitation  psi  pounds per square inch
DEA  Drug Enforcement Agency  RQ  Reportable quantity
DOT  Department of Transportation  RTK  Right to Know
FDA  Food and Drug Administration  SARA  Superfund Amendments and Reauthorization Act
IARC  Internat’l Agency for Research on Cancer  STEL  short-term exposure limit
IDLH  immediate danger to life and health  TCC  Tagliabue Closed Cup
kg  kilogram  TQ  threshold quantity
L  liter  TSCA  Toxic Substances Control Act
LC50  median lethal concentration  TWA  time-weighted average
LD50  median lethal dose  UEL  upper explosive limit
LEL  lower explosive limit

This document was prepared in accordance with 29 CFR 1910.1200 and ANSI Z400.1-2005.


REVISION STATEMENT: Changes have been made throughout this Material Safety Data Sheet. Please read the entire document.

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