SAFETY DATA SHEET
(S.D.S.)

1. IDENTIFICATION

Product Name: **ADENA 1002**
Product Number **AD1002**
Synonyms: Water Treatment Compound, Liquid
CAS Number: Mixture
Product Use: Corrosion Inhibitor
Manufacturer/Supplier: Adena Technologies
Address: 101 Technology Lane
Export, PA 15632
www.adenatechnologies.com
General Information: 888-247-2312
Chemical Emergency Number: **800-255-3924**

2. HAZARD(S) IDENTIFICATION

GHS Classification:

Health (Appendix A)	Environmental	Physical (App. B)
Acute Toxicity – Category 4 (oral), Category 3 (dermal), Category 1 (inhalation/mist) Eye Corrosion - Category 1 Skin Corrosion – Category 1 Skin Sensitization –not applicable Mutagenicity – not applicable Carcinogenicity – not applicable Reproductive/Developmental–not applicable Target Organ Toxicity—Kidney, Liver, Blood, Cardiovascular system	Aquatic Toxicity – Acute I, Chronic I	Corrosive Liquid – Category 1 Oxidizing Liquid – Category 3

GHS Label: Signal Word: DANGER!

Symbols:

Hazard Statements	Precautionary Statements
May be corrosive to metals. Causes severe skin burns and eye damage. Skin Sensitizer-Chronic Harmful if swallowed. Harmful if inhaled. Harmful to aquatic life with long lasting effects May intensify fire; oxidizer	**PREVENTION** Keep in original container Wear protective gloves/clothing/eye/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe mist/vapor/spray. Avoid release to the environment. Store away from flammable/combustible materials.

RESPONSE

Eye Contact Immediately flush eyes with water for at least 15 minutes. If irritation persists, get medical attention.

Skin Contact	Flush with plenty of water, removing contaminated clothing. If irritation develops, get medical attention.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get prompt medical attention.
Ingestion	Do not induce vomiting. Immediately give large quantities of water. Get medical attention immediately.
Notes to Physician	Sodium nitrite forms methemoglobin in the blood stream. Treat accordingly.
Storage	Store in a cool, well-ventilated area**.** Store locked up. Keep container tightly closed
Disposal	Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC): None Known

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT NAME	CAS NO.	CONCENTRATION %
SODIUM NITRITE	7362-00-0	20-25
SODIUM TOLYLTRIAZOLE	64665-57-2	1-2
ACRYLIC POLYMER, SODIUM SALT	NONE LISTED	1-2
SODIUM HYDROXIDE	1310-73-2	1-2
SODIUM TETRABORATE	11130-12-4	1-2
DEMINERALIZED WATER	7732-18-5	BALANCE

(SEE SECTION 8 FOR EXPOSURE LIMITS)

4. FIRST-AID MEASURES

Eye: Corrosive to the eyes. Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.

Skin: Itching or burning of the skin. Immediately flush the skin with plenty of water while removing contaminated clothing and shoes. Get immediate medical attention. Wash contaminated clothing before reuse.

Inhalation: Nasal irritation, headache, dizziness, nausea, vomiting, heart palpitations, breathing difficulty, cyanosis, tremors, weakness, red flushing of face, irritability. Remove exposed person from source of exposure to fresh air. If not breathing, clear airway and start cardiopulmonary resuscitation (CPR). Avoid mouth-to-mouth resuscitation.

Ingestion: Get immediate medical attention. Do not induce vomiting unless directed by medical personnel.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Water in flooding amounts. Do not use dry chemical, halon or CO2.

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-face mask and full protective clothing.

Unusual Fire and Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products. Product is a strong oxidizer. Explosive when mixed with combustible material.

Combustion Products: Thermal decomposition products include gaseous oxides of carbon, phosphorous and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. (Also see Section 8).

Protective clothing should be worn for spills and leaks.

Small spills: Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Large spills: Dike far ahead of liquid spill for later disposal.

Do not flush to sewer or waterways. Prevent release to the environment if possible. Refer to Section 15 for spill/release reporting information.

7. HANDLING AND STORAGE

Handling

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

Storage

Store this product in tightly closed containers, in a cool, dry, well-ventilated area, away from heat, sources of ignition and incompatibles. Store this product out of direct sunlight. Keep containers upright when not in use. Protect the container against physical damage.

Storage Code:

Yellow- Reactive. Store away from flammable/combustible materials, acids, ammonia, amines, metals (powdered).

Empty containers may contain harmful residue or vapors.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENT	OSHA TWA	OSHA STEL	ACGIH TWA	ACGIH STEL	MEXICO OEL	OTHER PELS
SODIUM	NONE	NONE LISTED	NONE LISTED	NONE LISTED	NONE LISTED	NONE LISTED

TOLYLTRIAZOLE	LISTED					
SODIUM POLYACRYLATE	NONE LISTED	NONE LISTED	NONE LISTED	NONE LISTED	NONE LISTED	NONE LISTED
SODIUM NITRITE	NONE LISTED	NONE LISTED	NONE LISTED	NONE LISTED	TWA: 2 MG/M3	NONE LISTED

Engineering Controls: Local exhaust ventilation may be necessary to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source. Provide mechanical ventilation for confined spaces. Use explosion-proof ventilation equipment.

Personal Protective Equipment (PPE)

Eye Protection: Wear chemical safety goggles and face shield. 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 use of apron, face shield, boots or full body protection. A safety shower should be located in the work area. Recommended protective materials include: Butyl rubber and for limited contact Teflon.

Respiratory Protection: If exposure limits are exceeded, NIOSH approved respiratory protection should be worn. A NIOSH approved respirator for organic vapors is generally acceptable for concentrations up to 10 times the PEL. For higher concentrations, unknown concentrations and for oxygen deficient atmospheres, use a NIOSH approved air-supplied respirator. Engineering controls are the preferred means for controlling chemical exposures. Respiratory protection may be needed for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA 29 CFR 1910.134.

9. PHYSICAL AND CHEMICAL PROPERTIES

Flashpoint: >200^{O}F

Lower Flammability Limit: N/A

Upper Flammability Limit: N/A

Autoignition Temperature: 480^{O}C (896^{O}F)

Boiling Point: 100^{O}C @ 760 mm Hg

Specific Gravity: 1.2 g/ml @ 20^{O}C

Melting Point: not known

% Volatile: ~70% (water)

Vapor Pressure: not known

Evaporation Rate (Water=1): not known

Viscosity: 20-30 cP @ 25^{O}C

% Solubility in Water: disperses

pH: 12.5-13.9

Odor/Appearance: Clear, red liquid with mild odor.

10. STABILITY AND REACTIVITY

Stability/Incompatibility: Incompatible with strong reducing agents, amines, and strong acids.

Hazardous Reactions/Decomposition Products: Thermal decomposition products may include oxides of carbon, phosphorous and nitrogen.

11. TOXICOLOGICAL INFORMATION

Signs and Symptoms of Overexposure: Eye and nasal irritation, itching or burning of the skin.

Acute Effects:

Eye Contact: may cause severe conjunctival irritation and corneal damage.

Skin Contact: may cause reddening, blistering or burns with permanent damage.

Inhalation: may cause severe irritation with possible lung damage (pulmonary edema).

Ingestion Sodium nitrite forms methemoglobin in the blood stream. Treat accordingly.

Target Organ Effects: none known.

Chronic Effects: none known

Medical Conditions Aggravated by Exposure: pre-existing diseases of the skin

Acute Toxicity Values
Oral LD_{50} (Rat) = 450-500 mg/kg
Dermal LD_{50} (Rabbit) = 250-300 mg/kg
Inhalation LC_{50} (Rat) = n.

12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY (E.G. 96 HR. TLM):	**BLUEGILL: 10-20 MG/L, LC50, 48 HR** **FATHEAD MINNOW 10-20 MG/L, LC50, 96 HR** **CERIODAPHNIA MAGNA: 20-40 MG/L, LC50, 48 HR**
BIODEGRADATION	**EXPECTED TO BIODEGRADE**

BIOACCUMULATION POTENTIAL	**NOT EXPECTED**
POTENTIAL FOR PRODUCT TO MOVE FROM SOIL TO GROUNDWATER	**NO DATA**
RESULTS FROM ADSORPTION STUDIES OR LEACHING STUDIES:	**NO DATA**
OTHER ADVERSE ECOLOGICAL EFFECTS:	**NO DATA**

13. DISPOSAL CONSIDERATIONS

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	the waste code should be assigned in discussion between the user, the producer and the waste disposal company.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT) Proper Shipping Name:
UN3093, CORROSIVE LIQUID, OXIDIZING, N.O.S. (CONTAINS: SODIUM HYDROXIDE, SODIUM NITRITE), 8, 5.1, PG II

Hazard Class: 8, 5.1
UN/NA Number: UN3093
Packing Group: PG III

Labels Required:

International Maritime Organization (IMDG) Proper Shipping Name:
UN3093, CORROSIVE LIQUID, OXIDIZING, N.O.S. (CONTAINS: SODIUM HYDROXIDE, SODIUM NITRITE), 8, 5.1, PG II

Hazard Class: 8, 5.1
UN/NA Number: UN3093
Packing Group: PG III

Labels Required:

15. REGULATORY INFORMATION

U.S. Federal Regulations

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):

CERCLA		
Component	CERCLA RQ (lb)	SARA TPQ (lb)
Sodium nitrite	**100 lb**	

If appropriate, immediately report to the National Response Center (800/424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies.

Toxic Substances Control Act (TSCA): All components of this product are included on the TSCA inventory.

Clean Water Act (CWA):

Component	CWA-Reportable Quantities	CWA-Toxic Pollutants	CA-Priority Pollutants	CWA-Hazardous Substances
Sodium Nitrite	**100 lb**	**--**	**--**	**X**

Clean Air Act (CAA): not applicable

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA Section 311/312 (40 CFR 370) Hazard Categories:

Immediate Hazard: X Delayed Hazard: X Fire Hazard: X
Pressure Hazard: Reactivity Hazard: X

U.S. Federal Regulations SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains the following chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Component	CAS-No	Weight %	SARA 13 - Threshold Values
Sodium nitrite	7632-00-0	22.4	1.0

State Regulations

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sodium nitrite	X	X	X	X	--

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

Canadian Workplace Hazardous Materials Information System (WHMIS):

Class E Corrosive
Class C Oxidizing Materials
Class D1B Toxic Materials

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Ratings: This information is intended solely for the use of individuals trained in the NFPA system.

Health: 3 **Flammability: 1** **Reactivity: 1**

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END OF SDS