



SAFETY DATA SHEET

(S.D.S.)

1. IDENTIFICATION

Product Name: ADENA 5121
Product Number: AD5121
Synonyms: Water Treating Compound, Liquid
CAS Number: Mixture
Product Use: Corrosion & Scale Inhibitor
Manufacturer/Supplier: Adena Technologies
101 Technology Lane
Export, PA 15632
www.adenatechnologies.com
General Information: 888-247-2312
Transportation Emergency Number: 800-255-3924

2. HAZARD(S) IDENTIFICATION

GHS Classification: DANGER

Health	Environmental	Physical
Acute Toxicity – Category 4 (oral), Category 4 (inhalation), Category 4 (dermal) Eye Corrosion - Category 1 Skin Corrosion – Category 1B Skin Sensitization – not applicable Mutagenicity –not applicable Carcinogenicity – not applicable Reproductive/Developmental – not applicable Organ Toxicity (Repeated) – not applicable	Aquatic Toxicity – Acute 3, Chronic 3	Corrosive to metals– Category 1

GHS Label Elements: DANGER

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Symbols:	
<u>Hazard Statements</u> DANGER! May be corrosive to metals Causes severe skin burns and eye damage. May cause allergic skin reaction. May cause damage to organs through repeated exposure. Harmful if swallowed. Harmful to aquatic life.	<u>Precautionary Statements</u> Prevention: Keep only in original container. Do not breathe mist/vapors. Keep container tightly closed. Wear protective gloves and eye/face protection. Wash thoroughly after handling. Avoid release to environment.

Response:

Absorb spillage to prevent material damage.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

Storage/Disposal:

Store in a corrosive resistant container with a resistant inner liner.

Store locked up.

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT NAME	CAS NO.	CONCENTRATION %
PHOSPHORIC ACID	7664-38-2	4.5-5.0
PHOSPHONOBUTANETRICARBOXYLIC ACID	37971-36-1	6-8
POLYMALEIC HOMOPOLYMER	26099-09-2	6-8
ACRYLIC TERPOLYMER	NONE LISTED	6-8



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ZINC CHLORIDE	7646-85-7	2.5-3.2
BENZOTRIAZOLE	95-14-7	1.5-2.0
DEMINERALIZED WATER	7732-18-5	BALANCE

(SEE SECTION 8 FOR EXPOSURE LIMITS)

4. FIRST-AID MEASURES

Eye: In case of contact with substance, immediately flush eyes with running water for at least 15 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If the physician is not immediately available, eye irrigation should be continued for an additional 15 minutes. If it is necessary to transport the patient to a physician and the eye needs to be bandaged, use a dry sterile cloth pad and cover both eyes.

Skin: For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes.

Wash skin with soap and water. Remove and isolate contaminated clothing and shoes. Wash contaminated clothing before reuse.

Inhalation: Administer oxygen if breathing is difficult. Do not use mouth-to-mouth methods if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Move victim to fresh air.

Ingestion: If swallowed give 2-3 glasses of water if victim is conscious and alert. Do not give anything by mouth to an unconscious person. Do NOT induce vomiting. Obtain medical attention immediately if ingested. Do not use mouth-to-mouth method if victim ingested the substance. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Persons attending the victim should avoid direct contact with heavily contaminated clothing and vomitus.

Notes to Physician: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

4. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Not combustible. Use extinguishing media suitable for surrounding fire.

Unusual Fire and Explosion Hazards: Not combustible. Under fire conditions, toxic, corrosive fumes are emitted.

Hazardous Combustion Products: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Oxides of carbon, nitrogen and phosphorus.

Advice for firefighters: Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited



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protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Keep unauthorized personnel away. Evacuate residents who are downwind of fire.

Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

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 inert 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 the container in a cool, dry, well ventilated area.

Store the container away from incompatible materials.

Store the container at ambient temperature.

Keep containers tightly closed and upright when not in use.

Protect against physical damage.

Empty containers may contain toxic, residue or vapors. Do not cut, grind, drill, or weld on or near containers unless precautions are taken against these hazards.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENT	OSHA TWA	OSHA STEL	ACGIH TWA	ACGIH STEL	IDLH	OTHER PELS

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PHOSPHORIC ACID	NONE LISTED	NONE LISTED	1 MG/M ³	3 MG/M ³	NONE LISTED	NONE LISTED
ZINC CHLORIDE	1 MG/M ³	NONE LISTED	1 MG/M ³	2 MG/M ³	NONE LISTED	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 Neoprene.

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: not flammable

Lower Flammability Limit: N/A

Upper Flammability Limit: N/A

Autoignition Temperature: NO DATA



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Boiling Point: 100-110⁰C @ 760 mm Hg

Specific Gravity: 1.14 g/ml @ 20⁰C

Melting Point: N/A

% Volatile: ~ 60% (WATER)

Vapor Pressure: no data

Evaporation Rate (Water=1): SIMILAR TO WATER

Vapor Density (Air=1): SIMILAR TO WATER

Viscosity: 40-80 cP @ 25⁰C

% Solubility in Water: Complete @ 20⁰C

Octanol/Water Partition Coefficient: NO DATA

Pour Point: NO DATA

pH: 1.2-1.6

Molecular Formula: Mixture

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

10. STABILITY AND REACTIVITY

Stability: Stable

Reactivity: No dangerous reaction known under conditions of normal use.

Conditions to Avoid: Contact with incompatible materials.

Incompatible Materials: Strong oxidizing agents, strong reducing agents, strong bases and certain metals.

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

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects: This material is acidic and the primary effects and toxicity



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are due to its corrosive nature.

Route(s) of Entry/Exposure: Inhalation, Skin, Eye, Ingestion.

Potential Health Effects:

Inhalation

- | | |
|-------------------|--|
| Acute (Immediate) | ● Under normal conditions of use, no health effects are expected. |
| Chronic (Delayed) | ● Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough. |

Skin

- | | |
|-------------------|--|
| Acute (Immediate) | ● Causes severe skin burns and eye damage. |
| Chronic (Delayed) | ● Repeated or prolonged exposure to corrosive materials will cause dermatitis. |

Eye

- | | |
|-------------------|--|
| Acute (Immediate) | ● Corrosive. Can cause permanent damage to the cornea, blindness. |
| Chronic (Delayed) | ● Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis. |

Ingestion

- | | |
|-------------------|--|
| Acute (Immediate) | ● Causes corrosion, burns to mouth and esophagus, abdominal pain, chest pain, nausea, vomiting, diarrhea, seizures. Aspiration of the swallowed or vomited product can cause severe pulmonary complications. |
| Chronic (Delayed) | ● Repeated or prolonged exposure to corrosive materials or fumes may cause Gastrointestinal disturbances. |

- | | |
|----------------------|---|
| Carcinogenic Effects | ● This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens. |
|----------------------|---|

Acute Toxicity Values

Oral LD50 (Rat) = > 2000 mg/kg

Dermal LD50 (Rabbit) = > 2000 mg/kg

Inhalation LC50 (Rat) = 200 ppm/4 hr., 1100 ppm vapor/1 hr.



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12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY (E.G. 96 HR. TLM):

BLUEGILL: 1200 MG/L, LC50, 48 HR

FATHEAD MINNOW: 820 MG/L, LC50, 48 HR

CERIODAPHNIA MAGNA: 350 MG/L, LC50, 48 HR

ALGAE: 145MG/L, IC50, 72 HR

BIODEGRADATION

EXPECTED TO BIODEGRADE

BIOACCUMULATION POTENTIAL

NO DATA

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

Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. This material is considered an EPA hazardous waste. EPA "RCRA" Hazardous Waste Code: "C" Corrosive.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

14. TRANSPORT INFORMATION

U.S. Department of Transportation

Proper Shipping Name:

UN3265, Corrosive liquid, acidic, organic, n.o.s. (contains phosphoric acid), 8, PG II

ERG: 153

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15. REGULATORY INFORMATION

U.S. Federal Regulations

CERCLA/SARA:

The reportable quantity (RQ) for this material is:

Phosphoric Acid (7664-38-2) 33% by weight 5000 lb (2270 kg)

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): No components of this product are listed.

Clean Air Act (CAA): No components of this product are listed.

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:
Pressure Hazard:	Reactivity Hazard:	

This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372):

Phosphoric Acid (7664-38-2) 33% by weight



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US STATE REGULATIONS

COMPONENT	CAS	CA	FL	MA	MN	NJ	PA	RI
PHOSPHORIC ACID, 4.7%	7664-38-2	NO	YES	YES	YES	YES	YES	YES
PHOSPHOROUS ACID, 0.82%	10294-56-1	NO	NO	NO	NO	YES	NO	NO
ZINC CHLORIDE, 2.7%	7646-85-7	NO	NO	YES	YES	YES	YES	NO

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 D2B Materials Causing Other Toxic Effects

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: 0

Reactivity: 0

Revision Indicator: New MSDS, May 5, 2015

Prepared by: Dean Norwood, Technical Director

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