

MATERIAL SAFETY DATA SHEET

BioEffects Solution

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:

BioEffects Solution

MSDS Issue Date:

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Manufacturer:

The Ecology Company
2186 Pacific Ave. , Unit E
Costa Mesa, California 92627, USA

Phone: 949 270 - 0959

2. HAZARDS IDENTIFICATION

Hazard Classification:

Under normal conditions of responsible use, this product should not present a hazard to the user or the environment.

Health Hazards:

May cause discomfort or mild irritation of eyes, skin, or respiratory system.
Ingestion of large quantities may be harmful.

Physical Hazards:

None anticipated.
Do not allow product to evaporate to dryness.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Composition:

A proprietary mixture of inorganic salts and other organic chemical ingredients in aqueous (water-based) solution.

CAS #: none

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air.
Flush eyes with clean water for at least 15 minutes.
If symptoms persist, seek medical attention.

Skin: Remove contaminated clothing and shoes. Cleanse affected area(s) thoroughly by washing with mild soap and water.
If irritation or redness persists, seek medical attention.
Wash contaminated clothing before re-use.

Inhalation (Breathing) :

If respiratory symptoms develop, move victim away from source of exposure and into fresh air.
If symptoms persist, seek medical attention.
If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.
If victim is not breathing, clear airway and immediately begin artificial respiration.

Ingestion (Swallowing) :

If swallowed, seek emergency medical attention.
If possible, do not leave victim unattended and observe closely for adequacy of breathing.
If victim is conscious, alert, and does not feel sick, give small amounts of water or milk.
Do not induce vomiting unless directed to do so by medical personnel.

If victim begins to vomit, do not give anything by mouth.
If victim is drowsy or unconscious and vomiting, place on left side with the head down and do not give anything by mouth.

Note To Physicians:

Large doses may cause significant vasodilation and hypotension.
Pre-existing ischemic heart disease may be aggravated by these effects.
Large ingestions may cause methemoglobinemia.
Methemoglobinemia should be suspected if cyanosis occurs.

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Pre-Existing Medical Conditions:

Pre-existing heart disease may be aggravated by exposure.

5. FIRE FIGHTING MEASURES

Flammable Properties:

The product is not flammable. Refer to Section 9 for additional information.

Hazards from Combustion Products:

Material will not burn, but if involved in a fire, flammable/toxic gases may be generated after material evaporates to dryness: carbon monoxide, carbon dioxide, nitrogen oxides, and/or ammonia. Exposure to heat may liberate ammonia fumes.

Use extinguishing agent suitable for type of surrounding fire.

Use water only in flooding quantities. Do not release runoff to waterways or drainage systems.

Fire Fighting Instructions:

Protective Equipment:

For fires beyond early stages, emergency responders in the immediate hazard area should wear appropriate protective equipment as conditions warrant.

Self-contained breathing apparatus should be worn by qualified and trained personnel when the chemical hazard is unknown, when the chemical hazard is located in enclosed or confined spaces, or when such apparatus is explicitly required.

Precautions:

Isolate immediate hazard area and keep unauthorized personnel out.

Stop spill/release if it can be done with minimal risk.

Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Cool equipment exposed to fire with water, if it can be done with minimal risk.

Do not allow product to evaporate to dryness.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures:

Immediate cleanup of any spill is recommended.

Stop spill/release if it can be done with minimal risk.

Small spills can be wiped up with absorbent material.

Minimize spread of large spill by use of containment, such as berms, dikes, and drain covers.

Personnel Precautions:

Isolate immediate hazard area and keep unauthorized personnel out.

Wear appropriate protective equipment, including respiratory protection, as conditions warrant.

Environmental Precautions:

Material is water-soluble and will disperse in water.

Prevent spilled material from entering storm drains, other unauthorized treatment drainage systems, wells, sources of potable water, and natural waterways.

Cleanup:

Dike and contain spilled material. Recover as much spilled material as possible.

Spilled material may be pumped into suitable containers or absorbed into an appropriate absorbent material.

Contaminated equipment and surfaces can be rinsed with clean water where appropriate. Mild soap, followed by clean water rinse can also be used.

Do not use chlorine bleach, acids, or alkaline materials to clean contaminated surfaces or areas.

Ensure that disposal of spilled/contaminated material complies with national, state, and local regulations.

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7. HANDLING AND STORAGE

Precautions for Safe Handling:

Avoid contact with skin and eyes. Do not breathe sprays, mists or aerosols.
The use of appropriate respiratory protection is advised when airborne concentrations exceed any established exposure limits.

Wash thoroughly after handling. Use good personal hygiene practice.
Do not wear contaminated clothing or shoes.
Keep out of reach of children.

Do not mix with incompatible materials. Refer to Section 10.
Prevent unintentional release to drainage systems, natural waterways, and potable water systems.

Conditions for Safe Storage:

Keep container(s) tightly closed.
Use and store this material in cool, dry, well-ventilated areas.
Store only in approved containers.

Protect container(s) against physical damage.
Keep away from any incompatible materials. Refer to Section 10.
Protect against extremes in temperature.

Heating above 140° F (60° C) will promote hydrolysis.
Temperatures below 43° F (6° C) will cause crystallization (salting out) of the product.
If this occurs, warm the product to 61° F (16° C) and mix well until product is uniform.
Exposure to sunlight may cause product coloring to fade but does not affect product performance.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls:

If current ventilation practices are not adequate to minimize exposure, additional ventilation or exhaust systems may be required.

Personal Protective Equipment (PPE):

Respiratory:

Respiratory protection is not usually required, however it may be required when ventilation is not adequate to prevent exposure.

Skin: Chemical-resistant, impermeable gloves are recommended to prevent skin contact and possible irritation. (see glove manufacturer literature for information on permeability).

Eye/Face:

Approved eye protection, such as safety glasses with sideshields, to safeguard against potential eye contact, irritation, or injury is recommended. Safety goggles or a face shield may also be necessary, especially when performing activities that may create a potential for splashes.

Other Protective Equipment:

Impervious clothing should be worn as needed.
A source of clean water should be available in the work area for flushing eyes and skin.

Exposure Limits:

ACGIH TLV-TWA: 10 mg/m³ for Particulates Not Otherwise Classified (nuisance dusts)

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 68° F (20° C) and 760 mm Hg (1 atm).

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|--------------------------------|--|--|---|
| Physical State: | Liquid, aqueous | Flash Point: | Not applicable |
| Appearance: | Clear, colorless to pale green, blue solution | Lower Explosion Limit: Upper Explosion Limit: | Not applicable Not applicable |
| Odor: | Slight odor of ammonia | Autoignition Temperature: | Not applicable |
| pH: | 6.8 – 7.3 | | |
| Boiling Point: | > 212° F (> 100° C) | Percent Volatile: | Not determined |
| Freezing/Melting Point: | < 32° F (< 0° C) | Evaporation Rate: (nBuAc =I) | <1 |
| Salting Out Point | < 43° F (< 6° C) | Vapor Pressure: | 17.2 mm Hg (vapor pressure of water) |
| Specific Gravity: | 1.34 – 1.44 g/mL at 65° F (18° C) | Vapor Density (air=I): | 0.6 (water) |
| Bulk Density: | 11.8 –12.2 lb / US gal 1.4 - 1.5 Kg / Liter | Solubility in Water: | 100% |

10. STABILITY AND REACTIVITY

Chemical Stability:

Stable under normal conditions of storage and handling.

Conditions To Avoid:

Do not allow product to evaporate to dryness. Refer to Section 5.

Incompatible Materials:

Avoid contact with combustible, organic, or other readily oxidizable materials.
Avoid contact with strong acids and chlorates or other strong oxidizers.
Contact with alkaline materials may liberate ammonia.
Avoid contact with reactive metals. Avoid contact with chlorine bleach.

Hazardous Polymerization:

Will not occur.

11. TOXICOLOGICAL INFORMATION

Significant Routes of Exposure:

Ingestion, Inhalation

Target Organs:

Blood / circulatory system

Potential Health Effects:

Eye: Contact may cause mild eye irritation. Symptoms may include stinging, watering, and redness.

Skin: Contact may cause mild skin irritation. Symptoms may include redness.
No harmful effects from skin absorption have been reported.

Inhalation (Breathing) :

May cause mild respiratory irritation.

Ingestion (Swallowing) :

May be harmful if ingested.

Ingestion of large amount may interfere with the circulation and oxygen carrying capacity of the blood.

Effects of Overexposure:

Symptoms of overexposure may include irritation of the nose, throat and digestive tract, headaches, coughing, nausea, vomiting, diarrhea, and transient disorientation.

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Prolonged or repeated overexposure may result in effects on the blood (methemoglobinemia) and blood vessels (vasodilating and a fall in blood pressure). Symptoms of toxicity may include headache, fainting, fatigue, cyanosis, confusion, irregular heartbeats, and possible respiratory paralysis.

Medical Conditions Generally Aggravated by Exposure:

Pre-existing heart disease may be aggravated by exposure.

Chronic Effects:

Cancer: Does not contain ingredients known to be carcinogenic by IARC, NTP, OSHA, ACGIH, or EPA.

Developmental:

Ingredients in this composition are not known to cause developmental effects.

12. ECOLOGICAL INFORMATION

Environmental Effects:

The product itself and its products of degradation are not harmful under normal conditions of careful and responsible use. Product is fully soluble with water and will move with water flow.

Persistence:

The product is non-persistent and non-cumulative when used according to directions.

Precautions:

Avoid spills and releases to watercourses and sources of potable water.

Product concentrate may cause irritation to the digestive tract of livestock or wildlife that ingest the material.

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not classified as a hazardous waste under the U. S. Resource Conservation and Recovery Act (RCRA).

Use of the product that results in chemical or physical change or contamination may subject it to regulation as a hazardous waste.

Along with properly characterizing all waste materials, consult federal, state, and local regulations regarding the proper disposal of this material.

14. TRANSPORT INFORMATION

Hazard Class or Division:

Not classified as Dangerous Goods under U. S. Department of Transportation (DOT) Hazardous Material Regulations.

15. REGULATORY INFORMATION

Carcinogenicity:

Does not contain ingredients known to be carcinogenic by IARC, NTP, California OSHA, ACGIH, or US EPA.

Other Regulatory Information:

California Proposition 65 (CA Health & Safety Code Section 25249.5):

This product does not contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Clean Water Act (CWA):

This product does not contain ingredients considered to be priority pollutants under the Clean Water Act.

CERCLA/SUPERFUND:

This product does not contain ingredients that have Reportable Quantity (RQ) requirements under U.S. 40 CFR 117.302.

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