

# MATERIAL SAFETY DATA SHEET

## PRO ADVANTAGE 28

28-Day, 2.5% Long-Life Glutaraldehyde

### 1 - COMPOSITION INFORMATION

#### Ingredients

|                                   | <u>CAS #</u> | <u>OSHA</u><br><u>PEL</u> | <u>ACGIH</u><br><u>TLV</u> | <u>%</u> |
|-----------------------------------|--------------|---------------------------|----------------------------|----------|
| Glutaraldehyde                    | 111-30-8     | N/A                       | 0.05 ppm                   | 2.5      |
| Water and other inert ingredients | N/A          | N/A                       | N/A                        | 97.5     |

### 2 - PHYSICAL AND CHEMICAL PROPERTIES

**Boiling Point:** 212 °F

**Specific Gravity (H<sub>2</sub>O = 1):** 1.005

**Vapor Pressure (mm Hg):** Same as water

**Vapor Density (AIR = 1):** Same as water

**Melting Point:** N/A

**Solubility in Water:** 100%

**Appearance and Odor:** Activated solution is bluish-green with a mild glutaraldehyde odor.

**pH:** 3.2 – 4.3 unactivated; 7.5 – 8.5 activated

### 3 - FIRE AND EXPLOSION HAZARD DATA

**Flash Point (Method Used):** N/A

**Flammable Limits:** LEL: N/A UEL: N/A

**Extinguishing Media:** N/A

**Special Fire Fighting Procedures:** N/A

**Unusual Fire and Explosion Hazards:** N/A

### 4 - REACTIVITY DATA

**Stability:** Stable solution

**Conditions to Avoid:** Avoid high temperatures above 200 °F. Avoid removal of water by artificially raising temperature.

**Incompatibility (Material to Avoid):** Acids and alkalines will neutralize active ingredient.

**Hazardous Decomposition Byproducts:** N/A

**Hazardous Polymerization:** Will not occur

### 5 - HEALTH HAZARD DATA

**Routes of Entry:**

**Skin:** Moderate irritation

**Eyes:** Contact with eyes causes damage.

**Inhalation:** Low or mild irritation

**Ingestion:** Toxic

**Carcinogenicity:** NTP: No

**IARC Monographs:** No OSHA Regulated Carcinogen: No

### 6 - EMERGENCY FIRST AID PROCEDURES

**Skin:** Wash skin with soap and water.

**Eyes:** Flush with water for 15 minutes. If irritation persists, seek medical attention.

**Inhalation:** Remove to fresh air. If irritation persists, seek medical attention.

**Ingestion:** Do not induce vomiting. Give large amounts of water. Seek medical attention.

### 7 - PRECAUTIONS FOR SAFE HANDLING & USE

**Steps to be taken in case material is released or spilled:** Ventilate area; wear protective gloves and eye gear. For SMALL spills, wipe with sponge, mop or towel. Flush with large quantities of water. For LARGE spills, use ammonium carbonate, sodium bisulfite or dibasic ammonium phosphate to deactivate glutaraldehyde. Collect liquid and discard it.

**Waste Disposal Method:** Dispose of in accordance with federal, state, and local regulations. Do not reuse empty container. Wrap container and put in trash.

**Precautions to be taken in handling and storing:** Keep in cool place. Use in well-ventilated area. Keep container tightly closed.

**Other Precautions:** Keep out of reach of children. Do not ingest. Avoid skin and eye contact. Wash contaminated clothing before reuse; discard if disposable. Avoid contamination of food.

### 8 - CONTROL MEASURES

**Respiratory Protection:** Use in a well-ventilated area.

**VENTILATION:**

**Local Exhaust:** Adequate ventilation recommended – a minimum of 10 air exchanges per hour or as defined by state and local regulations

**Mechanical (General):** Should be sufficient

**Protective Gloves:** Butyl rubber, nitrile rubber, polyethylene or double-gloved latex.

**Eye Protection:** Eye protection recommended.

**Work/Hygiene Practices:** Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure.

### 9 - TRANSPORTATION INFORMATION

Not regulated.

### 10 - SPECIAL INFORMATION

**HMIS (Hazardous Material Identification System) Rating:**

H2 F0 R0

[HMIS Hazard Index: 4 – Severe Hazard; 3 – Serious Hazard;

2 – Moderate Hazard; 1 – Slight Hazard; 0 – Minimum Hazard]

**Note:** This MSDS was prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and is to be used only for this product. The information contained in this MSDS is, to the best of our knowledge, believed to be accurate.

## MATERIAL SAFETY DATA SHEET

## 1. Product And Company Identification

**Product Name:** Pro Advantage® 14-Day 2.6% Long-Life Glutaraldehyde

**Chemical Emergency Phone Number** (Chemical Spills, Leaks, Fire, Exposure or Accident only):

CHEMTREC 1-800-424-9300 (in the US) 1-703-527-3887 (Outside the US)

**MSDS Date of Preparation/Revision:** 11/20/2013

**Product Use:** Liquid Sterilant/High Level Disinfectant

## 2. Hazards Identification

Clear, colorless liquid with a fruity odor.

## EMERGENCY OVERVIEW

Corrosive to eyes. May cause skin and respiratory tract irritation. May be harmful if swallowed or inhaled. Ingestion of glutaraldehyde may cause nervous system effects including nausea, dizziness, headache, and drowsiness. Repeated inhalation of vapors may cause asthmatic symptoms in some individuals.

## 3. Composition/Information On Ingredients

| Component                 | CAS No.     | Amount |
|---------------------------|-------------|--------|
| Glutaraldehyde            | 111-30-8    | 2.6%   |
| Non-Hazardous Ingredients | Proprietary | 97.4%  |

## 4. First Aid Measures

**Inhalation:** Move to fresh air if effects occur and seek immediate medical attention if effects persist.

**Skin Contact:** Flush with water for 15 minutes. If skin irritation develops and persists, seek medical attention.

**Eye Contact:** Hold eye open and rinse slowly and gently with water for 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Seek immediate medical attention.

**Ingestion:** If swallowed, get immediate medical advice by calling a Poison Control Center or hospital emergency room. If advice is not available, take victim and product container to the nearest emergency treatment center or

hospital. Do not induce vomiting unless directed to do so by medical personnel. If the victim is alert, rinse their mouth with water. Do not attempt to give anything by mouth to an unconscious person.

**Note to physician:** Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. Fire Fighting Measures

**Extinguishing Media:** Use any media that is suitable for the surrounding fire.

**Special Fire Fighting Procedures:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

**Unusual Fire Hazards:** None known.

**Hazardous Combustion Products:** Burning, after the water has evaporated, may produce carbon monoxide and carbon dioxide.

## 6: Accidental Release Measures

Stop leak if it is safe to do so and move containers from the spill area. Wear appropriate protective clothing and equipment (See Section 8). Collect material with an inert absorbent material and place in appropriate, labeled container for disposal. Refer to Section 13 for disposal advice.

## 7. Handling and Storage

Avoid breathing vapors or mists. Prevent contact with eyes, skin and clothing. Wash thoroughly with soap and water after handling. Avoid contamination of food. Use in a well-ventilated area in closed containers. Use in accordance with label directions.

Store at room temperature. Keep containers closed.

## 8. Exposure Controls / Personal Protection

### Exposure Limits

| Chemical       | Exposure Limit                   |
|----------------|----------------------------------|
| Glutaraldehyde | 0.05 ppm Ceiling ACGIH TLV (SEN) |

**Ventilation:** Use general or local exhaust ventilation as needed to maintain airborne concentrations below the occupational exposure limits.

**Respiratory Protection:** None under normal use conditions with adequate ventilation. For operations where exposure limits are exceeded, a NIOSH approved respirator with an organic vapor cartridge is recommended. Equipment selection depends on contaminant type and concentration. Select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use selfcontained breathing apparatus.

**Gloves:** Protective gloves such as butyl rubber or nitrile are recommended.

**Eye Protection:** Safety goggles recommended.

**Other Protective Equipment/Clothing:** Wear protective clothing as needed to avoid skin contact.

## 9. Physical and Chemical Properties

**Appearance and Odor:** Clear, colorless liquid with a fruity odor.

|                                           |                                    |                         |                                           |
|-------------------------------------------|------------------------------------|-------------------------|-------------------------------------------|
| Boiling Point:                            | 100°C (212°F)                      | Specific Gravity:       | 1.004                                     |
| Solubility in Water:                      | Soluble                            | pH:                     | 3.2-4.3 unactivated,<br>6.5-8.5 activated |
| Vapor Pressure:                           | 0.3 mmHg @20°C<br>(glutaraldehyde) | Vapor Density:          | 1.1 (glutaraldehyde)                      |
| Percent Volatile:                         | 100%                               | Melting/Freezing Point: | Not Determined                            |
| Coefficient of Water/Oil<br>Distribution: | Not Determined                     |                         |                                           |
| Flash Point:                              | None                               | Flammable Limits:       | None                                      |

## 10. Stability and Reactivity

**Stability:** Stable

**Conditions To Avoid:** Avoid temperatures above 100°C. Do not allow significant evaporation.

**Incompatibility:** Strong oxidizing agents and acids and bases.

**Hazardous Decomposition Products:** Thermal decomposition will produce carbon monoxide and carbon dioxide.

**Hazardous Polymerization:** Will not occur.

## 11. Toxicological Information

**Potential Health Effects:**

**Acute Hazards:**

**Inhalation:** Vapors may cause irritation of the nose, throat and upper respiratory tract. Repeated inhalation of glutaraldehyde vapors may cause asthmatic symptoms in some individuals, including cough, wheezing and difficulty breathing.

**Skin Contact:** May cause skin irritation. No signs of toxicity were observed in a dermal toxicity study in rabbits. Irritating in a primary irritation study with rabbits, effects reversed in 72 hrs. Negative in a skin sensitization study with guinea pigs.

**Eye Contact:** Causes severe irritation and possible eye damage. Corrosive in an eye irritation study in rabbits.

**Ingestion:** Do not ingest. If swallowed, may irritate mouth, throat and intestinal tract. Ingestion of glutaraldehyde may cause nervous system effects including nausea, dizziness, headache, and drowsiness.

**Chronic Hazards:** No adverse effects expected based on the available data.

**Medical Conditions Aggravated By Exposure:** None known.

**Carcinogen:** None of the components is listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

**Acute Toxicity Values for Pro Advantage® 14-Day Glutaraldehyde:**

LD50 Oral Rat 3450 mg/kg

LD50 Dermal Rabbit >2000 mg/kg

## 12. Ecological Information

This product is classified as toxic to the aquatic environment.

**Toxicity:**

Glutaraldehyde: LC50 fathead minnow 10.8 mg/L/96 hr; EC50 daphnia magna 0.69 mg/L/48 hr; EbC50 green algae 2.64 mg/L/72 hr.

**Persistence and degradability:** Glutaraldehyde is readily biodegradable.

**Bioaccumulative Potential:** Glutaraldehyde: log Kow -0.333, potential for bioaccumulation is low.

**Mobility in Soil:** Glutaraldehyde: highly mobile in soil.

## 13. Disposal Considerations

Dispose in accordance with national, state/provincial and local regulations. Refer to product label for disposal information.

## 14. Transport Information

**U.S. DOT Hazard Classification**

Proper Shipping Name: Not Regulated

Technical Name: N/A

UN Number: N/A

Hazard Class/Packing Group: N/A Labels

Required: N/A

DOT MARINE POLLUTANTS: This product does not contain Marine Pollutants as defined in 49 CFR 171.8.

**IMDG Code Shipping Classification**

Proper Shipping Name: Not Regulated

UN Number: None

Hazard Class: None

Packing Group: None

Labels Required: None

Placards Required: None

Not classified as a marine pollutant

**ICAO Air Transport Classification**

Proper Shipping Name: Not Regulated

ID Number: None

Hazard Class: None

Packing Group: None

Labels Required: None

|                                   |
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| <b>15. Regulatory Information</b> |
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**EPA SARA 311/312 Hazard Classification:** Acute Health, Chronic Health

**EPA SARA 313:** This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

**Protection Of Stratospheric Ozone:** This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

**CERCLA SECTION 103:** This product is not subject to release reporting under CERCLA. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**EPA TSCA Inventory:** All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or exempt.

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| <b>16. Other Information</b> |
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NFPA Rating: Fire: 0

Health: 3

Instability: 0

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date of preparation, however, METREX RESEARCH makes no warranty with respect to the accuracy or suitability of the recommendations, and assumes no liability to any use thereof.

**MATERIAL SAFETY DATA SHEET****1. Product And Company Identification****Product Name:** Pro Advantage® 14-Day Powder Activator**Chemical Emergency Phone Number** (Chemical Spills, Leaks, Fire, Exposure or Accident only):

CHEMTREC 1-800-424-9300 (in the US) 1-703-527-3887 (Outside the US)

**MSDS Date of Preparation/Revision:** 11/20/2013**Product Use:** Liquid Sterilant/High Level Disinfectant Activator**2. Hazards Identification**

White/yellow powder with slight green tint.

**EMERGENCY OVERVIEW**

May be irritating to eyes, skin and respiratory tract.

**3. Composition/Information on Ingredients**

| Component                 | CAS No.     | Amount |
|---------------------------|-------------|--------|
| Inorganic phosphate       | Proprietary | 1-10%  |
| Non-Hazardous Ingredients | Proprietary | 90-99% |

**4. First Aid Measures****Inhalation:** Move to fresh air if effects occur and seek medical attention if effects persist.**Skin Contact:** Wash with soap and water. If skin irritation develops and persists, seek medical attention.**Eye Contact:** Hold eye open and rinse slowly and gently with water for 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. If irritation persists, seek medical advice.**Ingestion:** If swallowed, seek medical advice by calling a Poison Control Center or hospital emergency room. Do not induce vomiting. Do not attempt to give anything by mouth to an unconscious person.**5. Fire Fighting Measures****Extinguishing Media:** Use any media that is suitable for the surrounding fire.



**Special Fire Fighting Procedures:** Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

**Unusual Fire Hazards:** None known.

**Hazardous Combustion Products:** Burning may produce carbon monoxide and carbon dioxide and oxides of sulfur and phosphorus.

|                                       |
|---------------------------------------|
| <b>6: Accidental Release Measures</b> |
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Wear appropriate protective clothing and equipment (See Section 8). Collect spilled powder by scooping, vacuuming or sweeping. Do not create airborne dust. Place in a container for use or disposal. Use caution as surfaces may be slippery. Refer to Section 13 for disposal advice.

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| <b>7. Handling and Storage</b> |
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Avoid generating and breathing airborne dust. Avoid contact with eyes, skin and clothing. Wash thoroughly with soap and water after handling. Use in accordance with label directions.

Store at room temperature. Avoid prolonged exposure to heat and/or humidity as this reduces product effectiveness. Keep containers closed.

|                                                   |
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| <b>8. Exposure Controls / Personal Protection</b> |
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**Exposure Limits**

| Chemical            | Exposure Limit                                                             |
|---------------------|----------------------------------------------------------------------------|
| Inorganic phosphate | 5 mg/m3 (respirable dust), 15 mg/m3 (total dust) TWA<br>OSHA PEL (as PNOC) |

**Ventilation:** General ventilation should be adequate for normal use. For operations where the exposure limits may be exceeded, mechanical ventilation such as local exhaust may be needed to minimize exposure.



**Respiratory Protection:** None under normal use conditions with adequate ventilation. For operations where the occupational exposure limits are exceeded, a NIOSH approved respirator with particulate filter is recommended. Equipment selection depends on contaminant type and concentration. Select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use selfcontained breathing apparatus.

**Gloves:** Protective gloves such as rubber or nitrile are recommended.

**Eye Protection:** Safety goggles recommended.

**Other Protective Equipment/Clothing:** None required for normal use. Wear protective clothing if needed to avoid skin contact.

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**Pro Advantage® 14-Day Powder Activator**  
Date Prepared: 11/20/2013

## 9. Physical and Chemical Properties

**Appearance and Odor:** White/yellow powder with slight green tint.

|                                        |                |                         |                       |
|----------------------------------------|----------------|-------------------------|-----------------------|
| Boiling Point:                         | Not Applicable | Specific Gravity:       | Not Determined        |
| Solubility in Water:                   | Soluble        | pH:                     | 8.5-9.3 (1% solution) |
| Vapor Pressure:                        | Not Applicable | Vapor Density:          | Not Applicable        |
| Percent Volatile:                      | 0%             | Melting/Freezing Point: | Not Determined        |
| Coefficient of Water/Oil Distribution: | Not Determined |                         |                       |
| Flash Point:                           | Not Applicable | Flammable Limits:       | Not Determined        |

## 10. Stability and Reactivity

**Stability:** Stable

**Conditions To Avoid:** None known.

**Incompatibility:** Strong oxidizing agents and strong acids.

**Hazardous Decomposition Products:** Thermal decomposition will produce carbon monoxide and carbon dioxide and sulfur and phosphorus oxides. **Hazardous Polymerization:** Will not occur.

## 11. Toxicological Information

**Potential Health Effects:****Acute Hazards:**

**Inhalation:** May cause irritation of the nose, throat and upper respiratory tract.

**Skin Contact:** May cause skin irritation.

**Eye Contact:** May cause irritation. Eye damage is not expected.

**Ingestion:** Do not ingest. If swallowed, may irritate mouth, throat and intestinal tract.

**Chronic Hazards:** No adverse effects expected based on the available data.

**Medical Conditions Aggravated By Exposure:** None known.

**Carcinogen:** None of the components is listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

**Acute Toxicity Values:**

Inorganic Phosphate: LD50 Oral Rat 4150 mg/kg; LD50 Dermal Rat >7940 mg/kg

## 12. Ecological Information

This product is not classified as harmful to the environment.

### Toxicity:

Inorganic Phosphate: LC50 rainbow trout >100 mg/L/96 hr; EC50 daphnia magna >100 mg/L/48 hr Non-Hazardous Ingredients: LC50 fish >100 mg/L/96 hr; EC50 daphnia magna ~50 mg/L/48 hr; IC50 algae >100 mg/L/72 hr.

**Persistence and degradability:** No data available. Biodegradation does not apply to inorganic substances such as inorganic phosphates.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

## 13. Disposal Considerations

Dispose in accordance with national, state/provincial and local regulations.

## 14. Transport Information

### U.S. DOT Hazard Classification

Proper Shipping Name: Not Regulated

Technical Name: N/A

UN Number: N/A

Hazard Class/Packing Group: N/A

Labels Required: N/A

DOT MARINE POLLUTANTS: This product does not contain Marine Pollutants as defined in 49 CFR 171.8.

### IMDG Code Shipping Classification

Proper Shipping Name: Not Regulated

UN Number: None

Hazard Class: None

Packing Group: None

Labels Required: None

Placards Required: None

Not classified as a marine pollutant

**ICAO Air Transport Classification**

Proper Shipping Name: Not Regulated

ID Number: None

Hazard Class:

None

Packing Group: None

Labels Required: None

**Pro Advantage<sup>®</sup> 14-Day Powder Activator**  
**Date Prepared: 11/20/2013**

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| <b>15. Regulatory Information</b> |
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**EPA SARA 311/312 Hazard Classification:** Acute Health

**EPA SARA 313:** This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements under SARA Title III, Section 313 (40 CFR 372): None

**Protection of Stratospheric Ozone:** This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

**CERCLA SECTION 103:** This product has an RQ of 50,000 lbs based on the RQ of the inorganic phosphate of 5000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**EPA TSCA Inventory:** All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or exempt.

|                              |
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| <b>16. Other Information</b> |
|------------------------------|

NFPA Rating: Fire: 1

Health: 2

Instability: 0

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date of preparation, however, METREX RESEARCH makes no warranty with respect to the accuracy or suitability of the recommendations, and assumes no liability to any use thereof.