



Aqua Chemical Supply, Inc.

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1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier	FAS-DPD Titrating Reagent (Bromine)
Product code	R-0872
Recommended use	Use as directed by manufacturer for purposes directly related to water testing.
Recommended restrictions	None known
Manufacturer	Taylor Technologies, Inc. 31 Loveton Circle Sparks, MD 21152
Emergency telephone number: For emergency assistance involving chemicals call CHEMTREC day or night at: 1-800-424-9300	

2. HAZARDS IDENTIFICATION

Physical hazards	This mixture does not meet the classification criteria according to OSHA HazCom 2012.
Health hazards	This mixture does not meet the classification criteria according to OSHA HazCom 2012.
Environmental hazards	Not currently regulated by OSHA. For additional information, refer to section 12 of the SDS.
Label elements	None required
Signal word	None required
Hazard statement	None required
Precautionary statement	
Prevention	None required
Response	None required
Storage	None required
Disposal	None required
Hazard(s) not otherwise classified	None
Supplemental information	None

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixtures			
Chemical name	Common name and synonyms	CAS number	%
Deionized water	Dihydrogen oxide	7732-18-5	95–99
Iron ethylene diammonium sulfate	Iron (2+) ethylenediammonium sulphate	63589-59-3	0.1–5
Other components below reportable levels			0.01–0.1
Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.			

4. FIRST AID MEASURES

Inhalation	Move to fresh air. Give oxygen or artificial respiration if needed. Get medical attention immediately.
Skin contact	Immediately wash skin with soap and water. If symptoms persist or in all cases of concern, seek medical advice.
Eye contact	Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses if present and easy to do. Continue rinsing. If symptoms persist or in all cases of concern, seek medical advice.
Ingestion	Treat symptomatically. Never give anything by mouth to a person who is unconscious or is having convulsions. Do NOT induce vomiting unless directed by physician. If symptoms persist or in all cases of concern, seek medical advice.
Most important symptoms/effects, acute and delayed	

Indication of immediate medical attention and special treatment needed
 Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness, edema, drying, and cracking of the skin. Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging and tearing. Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.
 Provide general supportive measures and treat symptomatically.
 General information Ensure medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide.
 Unsuitable extinguishing media
 Specific hazards arising from the chemical Special protective equipment and precautions for firefighters
 Firefighting equipment/instructions
 Do not use water jet as an extinguisher, as this will spread the fire. During fire, gases hazardous to health may be formed. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
 Firefighters should wear full protective gear. Evacuate the area promptly. Fight fire from upwind to avoid exposure to combustion products. Cool containers/tanks with water spray. Do not get water inside container. Move containers from fire area if it can be done without risk. Prevent fire- extinguishing water from contaminating surface water or the ground water system.
 Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.
 General fire hazards No unusual fire or explosion hazards noted
 Hazardous combustion products Carbon oxides. Metal compounds. Sulfur oxides. Other irritating fumes and smoke.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures
 Methods and materials for containment and cleaning up
 Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during cleanup. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protective equipment, refer to section 8 of the SDS.
 Large Spills: Dike the spilled material where this is possible. Stop leak if it can be done without risk. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth, and place into containers. Prevent entry into waterways, sewer, basements, or confined areas. Following product recovery, flush area with water.
 Small Spills: Absorb spillage with noncombustible, absorbent material. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for reuse. For waste disposal, refer to section 13 of the SDS. Contaminated absorbent material may pose the same hazards as the spilled product.
 In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.
 Environmental precautions Avoid discharge into drains, watercourses, or onto the ground.

7. HANDLING AND STORAGE

Precautions for safe handling Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. For personal protective equipment, refer to section 8 of the SDS. Keep away from incompatibles. Observe good industrial hygiene practices. Label containers appropriately.
 Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (refer to section 10 of the SDS). Protect against physical damage. Use care in handling/storage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits
 U.S. ACGIH Threshold Limit Values

Components	Type	Value	Form
Iron ethylene diammonium sulfate (CAS 63589-59-3)	TWA	1 mg/m ₃	Not applicable

U.S. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Iron ethylene diammonium sulfate (CAS 63589-59-3)	TWA	1 mg/m ₃	Not applicable

Biological limit values	No biological exposure limits noted for the ingredient(s)
Appropriate engineering controls	
Individual protection measures, such as personal protective equipment	
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.	
Eye/face protection	Wear safety glasses with side shields (or goggles) and a face shield. Provide an emergency eyewash fountain and quick-drench shower in the immediate work area.
Skin protection	
Hand protection	Wear appropriate chemical-resistant gloves. Advice should be sought from glove suppliers.
Other	Wear appropriate chemical-resistant clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to fumes at levels exceeding the exposure limits. Advice should be sought from respiratory protection suppliers.
Thermal hazards	When necessary, wear appropriate thermal protective clothing.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contamination. Avoid breathing mist or vapor.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid
Form	Liquid
Color	Clear colorless or nearly colorless
Odor	Odorless
Odor threshold	Not available
pH	2.2
Melting point/freezing point	Not available
Initial boiling point and boiling range	Not available
Flash point	Not applicable (does not burn)
Evaporation rate	Not available
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits	
Flammability limit, lower (%)	Not applicable
Flammability limit, upper (%)	Not applicable
Explosive limit, lower (%)	Not applicable
Explosive limit, upper (%)	Not applicable
Vapor pressure	17 mm Hg
Vapor density	0.6
Relative density	1.00 g/cm ³
Solubility(ies)	
Solubility (water)	Soluble in all proportions
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
Viscosity	Not available
Other information	
Explosive properties	Not applicable
Oxidizing properties	Not applicable
Percent volatile	98%
Specific gravity	1.00

10. STABILITY AND REACTIVITY

Reactivity	This product is stable and nonreactive under normal conditions of use, storage, and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use

Conditions to avoid	Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Oxidizing agents
Hazardous decomposition products: None known. For hazardous combustion products, refer to section 5 of the SDS.	

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure		
Inhalation	May cause irritation to the respiratory system	
Skin contact	May cause slight or mild transient irritation	
Eye contact	May cause temporary irritation	
Ingestion	May cause discomfort	
Most important symptoms/effects, acute and delayed		
Direct skin contact may cause slight or mild transient irritation. Symptoms may include redness, edema, drying, and cracking of the skin. Direct eye contact may cause slight or mild transient irritation. Symptoms may include stinging and tearing. Inhalation of mists can cause respiratory irritation. Symptoms may include coughing and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.		
Acute toxicity This product is not classified as an acute toxicity hazard. See below for individual ingredient acute toxicity data.		
Components	Species	Test Results
Acute		
Dermal LD50	Rabbit	Not available
Inhalation LC50	Rat	Not available
Oral LD50	Rat	>89840 mg/kg
Skin corrosion/irritation		
May cause slight or mild transient irritation		
Serious eye damage/eye irritation		
May cause temporary irritation		
Respiratory sensitization	Not expected to be a respiratory sensitizer	
Skin sensitization	Not expected to be a skin sensitizer	
Germ cell mutagenicity	Not expected to be mutagenic	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, NTP, OSHA, or U.S. ACGIH.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)	Not regulated	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity, single exposure	Not classified as a specific target organ toxicity – single exposure	
Specific target organ toxicity, repeated exposure	Not classified as a specific target organ toxicity – repeated exposure	
Aspiration toxicity	Not expected to be an aspiration hazard	
Chronic effects	Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis	

12. ECOLOGICAL INFORMATION

Ecotoxicity	This product is not classified as environmentally hazardous; however, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	Not available
Bioaccumulative potential	Not available
Mobility in soil	High water solubility indicates a high mobility in soil.
Other adverse effects	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component

13. DISPOSAL CONSIDERATION

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Dispose of contents/container in accordance with local/regional/national/international regulations.	
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion with the user, the producer, and the waste disposal company.
Waste from residues/unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (refer to Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste-handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

DOT	Not regulated as dangerous goods
IATA	Not regulated as dangerous goods
IMDG	Not regulated as dangerous goods
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This mixture is not intended to be transported in bulk.

15. REGULATORY INFORMATION

U.S. federal regulations	This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory list.		
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)			Not regulated
CERCLA Hazardous Substance (40 CFR 302.4)			Not regulated
SARA 304 Emergency Release Notification			Not regulated
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096)			Not regulated
Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories			
Immediate hazard – no	Delayed hazard – no	Fire hazard – no	Pressure hazard – no
SARA 302 Extremely Hazardous Substance			Reactivity hazard – no
SARA 311/312 Hazardous Chemical			Not regulated
SARA 313 (TRI reporting)			Not regulated
Other federal regulations			
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAP)			Not regulated
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)			Not regulated
Safe Drinking Water Act (SDWA)			Not regulated
U.S. state regulations			
California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)			Not regulated
Massachusetts Right-to-Know Act			Not regulated
New Jersey Worker and Community Right-to-Know Act			Not regulated
Pennsylvania Worker and Community Right-to-Know Act	Iron ethylene diammonium sulfate (CAS 63589-59-3)		
Rhode Island Right-to-Know Act			Not regulated
California Proposition 65	California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):		
This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.			
International inventories			
Country(ies) or region	Inventory name		On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)		no
Canada	Domestic Substances List (DSL)		yes
Canada	Non-Domestic Substances List (NDSL)		no
China	Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)		yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)		yes
Europe	European List of Notified Chemical Substances (ELINCS)		no
Japan	Existing and New Chemical Substances (ENCS)		no
Korea	Existing Chemicals List (ECL)		no
New Zealand	New Zealand Inventory of Chemicals (NZIoC)		yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)		yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA)		yes
*A "yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(ies). A "no" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(ies).			

16. OTHER INFORMATION

Notice

Aqua Chemical Supply, Inc. expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Aqua Chemical Supply, Inc. sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Aqua Chemical Supply, Inc. makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Aqua Chemical Supply, Inc.'s control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

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