

FAS-DPD Titrating Reagent (Chlorine)

R-0871

SDS Preparation Date (mm/dd/yyyy): 02/28/2016

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## SAFETY DATA SHEET

### SECTION 1. IDENTIFICATION

Product identifier used on the label

: **FAS-DPD Titrating Reagent (Chlorine)**

Product Code(s) : R-0871

Recommended use of the chemical and restrictions on use

: Use as directed by manufacturer for purposes directly related to water testing.  
 Recommended restrictions: None known.

Chemical family : Mixture

Name, address, and telephone number of the supplier:

Name, address, and telephone number of the manufacturer:

**Lowry & Associates, Div. of Chem-Aquascience, Inc.**

Refer to supplier

5-1151 Gorham Street  
 Newmarket, ON, Canada  
 L3Y 8Y1

Supplier's Telephone # : (905) 836-0505, Hours 09:00 to 16:30

24 Hr. Emergency Tel # : Canutec: 613-966-6666

### SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Odorless.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Signal Word

Not required

Hazard statement(s)

Not required

Precautionary statement(s)

Not required

Other hazards

Other hazards which do not result in classification: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be mildly irritating to skin, eyes and respiratory system.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Water	Dihydrogen oxide	7732-18-5	95.0 - 99.0
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	Iron ethylene diammonium sulfate	63589-59-3	0.1 - 5.0

The components are not hazardous or are below required disclosure limits.

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### SECTION 4. FIRST-AID MEASURES

#### Description of first aid measures

- Ingestion* : Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person. Call a physician.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Obtain medical attention if symptoms develop and persist.
- Skin contact* : Wash off immediately with plenty of water. Remove and wash contaminated clothing before re-use. If irritation or symptoms develop, seek medical attention.
- Eye contact* : Flush eyes with water for at least 20 minutes. If irritation persists, seek prompt medical attention.

#### Most important symptoms and effects, both acute and delayed

- : Direct skin contact may cause slight or mild, transient irritation. Symptoms may include redness, edema, drying defatting and cracking of the skin. Direct eye contact may cause slight or mild, transient irritation. Symptoms may include stinging and tearing. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

#### Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

### SECTION 5. FIRE-FIGHTING MEASURES

#### Extinguishing media

- Suitable extinguishing media* : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.
- Unsuitable extinguishing media* : Do not use a solid water stream as it may scatter and spread fire.

#### Special hazards arising from the substance or mixture / Conditions of flammability

- : Burning may produce irritating, toxic and obnoxious fumes.

#### Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

#### Hazardous combustion products

- : Carbon oxides; Sulfur oxides

#### Special protective equipment and precautions for firefighters

- Protective equipment for fire-fighters* : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
- Special fire-fighting procedures* : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Wear suitable protective equipment. Refer to protective measures listed in sections 7 and 8. Restrict access to area until completion of clean-up.

**Environmental precautions** : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

#### Methods and material for containment and cleaning up

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- : Ventilate area of release. Stop spill or leak at source if safely possible. Dike for water control. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).

### Special spill response procedures

- : Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.  
US CERCLA Reportable quantity (RQ): None.

### SECTION 7. HANDLING AND STORAGE

#### Precautions for safe handling

- : Use only in well-ventilated areas. Wear protective equipment during handling. Avoid breathing vapours or mists. Avoid contact with eyes, skin and clothing. Keep away from extreme heat and flame. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling.

#### Conditions for safe storage

- : Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

#### Incompatible materials

- : Oxidizing agents

### SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Water	N/Av	N/Av	N/Av	N/Av
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	N/Av	N/Av	N/Av	N/Av

#### Exposure controls

##### Ventilation and engineering measures

- : Use in a well-ventilated area. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

##### Respiratory protection

- : If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

##### Skin protection

- : Gloves impervious to the material are recommended. Advice should be sought from glove suppliers.

##### Eye / face protection

- : Safety glasses with side-shields or chemical splash goggles.

##### Other protective equipment

- : Wear sufficient clothing to prevent skin contact. Depending on conditions of use, an impervious apron should be worn. An eyewash station and safety shower should be made available in the immediate working area.

##### General hygiene considerations

- : Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse. Handle in accordance with good industrial hygiene and safety practice.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** : Clear colourless liquid.  
**Odour** : Odorless.  
**Odour threshold** : N/Av  
**pH** : 2.2  
**Melting/Freezing point** : Not available.  
**Initial boiling point and boiling range**  
: 100°C (212°F)  
**Flash point** : Not Applicable (Does not burn)  
**Flashpoint (Method)** : N/Av  
**Evaporation rate (BuAe = 1)** : Not available.  
**Flammability (solid, gas)** : Not applicable.  
**Lower flammable limit (% by vol.)**  
: N/Av  
**Upper flammable limit (% by vol.)**  
: N/Av  
**Oxidizing properties** : Not applicable  
**Explosive properties** : Not applicable.  
**Vapour pressure** : 17 mm Hg  
**Vapour density** : 0.6  
**Relative density / Specific gravity**  
: 1.00  
**Solubility in water** : Soluble  
**Other solubility(ies)** : Not available.  
**Partition coefficient: n-octanol/water or Coefficient of water/oil distribution**  
: N/Av  
**Auto-ignition temperature** : Not applicable.  
**Decomposition temperature** : Not available.  
**Viscosity** : Not available.  
**Volatiles (% by weight)** : 98%  
**Volatile organic Compounds (VOC's)**  
: N/Av  
**Absolute pressure of container**  
: N/Av  
**Flame projection length** : N/Av  
**Other physical/chemical comments**  
: None known or reported by the manufacturer.

### SECTION 10. STABILITY AND REACTIVITY

**Reactivity** : This product is not reactive.  
**Chemical stability** : Material is stable under normal conditions.  
**Possibility of hazardous reactions**  
: No dangerous reaction known under conditions of normal use.  
**Conditions to avoid** : Avoid contact with incompatible materials. Do not use in areas without adequate ventilation.  
**Incompatible materials** : Oxidizing agents  
**Hazardous decomposition products**  
: None known, refer to hazardous combustion products in Section 5.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption  
: YES

#### Potential Health Effects:

##### Signs and symptoms of short-term (acute) exposure

###### *Sign and symptoms Inhalation*

: May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath.

###### *Sign and symptoms ingestion*

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

###### *Sign and symptoms skin*

: Direct skin contact may cause slight or mild, transient irritation.

###### *Sign and symptoms eyes*

: Direct eye contact may cause slight or mild, transient irritation.

##### Potential Chronic Health Effects

: Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

##### Mutagenicity

: Not expected to be mutagenic in humans.

##### Carcinogenicity

: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

##### Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

##### Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

**Specific target organ effects** : This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

##### Medical conditions aggravated by overexposure

: None known.

##### Synergistic materials

: Not available.

##### Toxicological data

: See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC<sub>50</sub>(4hr)</u> <u>inh, rat</u>	<u>LD<sub>50</sub></u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Water	N/Av	>90 mL/kg	N/Av
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	N/Av	N/Av	N/Av

##### Other important toxicological hazards

: To the best of our knowledge, the toxicological properties of this material have not been thoroughly investigated.

### SECTION 12. ECOLOGICAL INFORMATION

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**Ecotoxicity** : Not classified for hazards to the environment. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Ecotoxicity data:**

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Water	7732-18-5	No information available.	No information available.	Not applicable.
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	63589-59-3	N/Av	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Water	7732-18-5	No information available.	No information available.	Not applicable.
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	63589-59-3	N/Av	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Water	7732-18-5	No information available.	No information available.	Not applicable.
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	63589-59-3	N/Av	N/Av	None.

**Persistence and degradability**

: Not available.

**Bioaccumulation potential**

: Not available.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Water (CAS 7732-18-5)	N/Av	N/Av
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1) (CAS 63589-59-3)	N/Av	N/Av

**Mobility in soil** : High water solubility indicates a high mobility in soil.

**Other Adverse Environmental effects**

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**SECTION 13. DISPOSAL CONSIDERATIONS**

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- Handling for Disposal** : 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.
- Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

### SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
<b>49CFR/DOT Additional information</b>	None.				
TDG	None.	Not regulated.	Not regulated	none	
<b>TDG Additional information</b>	None.				

**Special precautions for user** : None known or reported by the manufacturer.

**Environmental hazards** : See ECOLOGICAL INFORMATION, Section 12.

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This substance/mixture is not intended to be transported in bulk.

### SECTION 15 - REGULATORY INFORMATION

#### US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Water	7732-18-5	Yes	N/Ap	N/Av	No	N/Ap
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	63589-59-3	Yes	N/Ap	N/Av	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

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### US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Water	7732-18-5	No	N/Ap	No	No	No	No	No	No
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	63589-59-3	No	N/Ap	No	No	No	No	No	No

### Canadian Information:

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

### International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Water	7732-18-5	231-791-2	Present	Listed	Listed	KE-35400	Present	Listed
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1)	63589-59-3	264-357-6	No data available.	Present	No data available.	No data available.	Present	No data available.

## SECTION 16. OTHER INFORMATION

### Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- HMIS: Hazardous Materials Identification System
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- Inh: Inhalation
- LC: Lethal Concentration
- LD: Lethal Dose
- MN: Minnesota
- N/Ap: Not Applicable
- N/Av: Not Available
- NFPA: National Fire Protection Association
- NIOSH: National Institute of Occupational Safety and Health
- NJ: New Jersey
- NTP: National Toxicology Program
- OECD: Organisation for Economic Co-operation and Development
- OSHA: Occupational Safety and Health Administration



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PA: Pennsylvania  
 PEL: Permissible exposure limit  
 RCRA: Resource Conservation and Recovery Act  
 RI: Rhode Island  
 RTECS: Registry of Toxic Effects of Chemical Substances  
 SARA: Superfund Amendments and Reauthorization Act  
 STEL: Short Term Exposure Limit  
 TLV: Threshold Limit Values  
 TWA: Time Weighted Average  
 WHMIS: Workplace Hazardous Materials Identification System

**References** :

- Material Safety Data Sheet from manufacturer
- OECD- The Global Portal to Information on Chemical Substances - eChemPortal, 2015
- Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases, 2015 (Chempendium, RTECs, HSDB, INCHEM).
- European Chemicals Agency, Classification Legislation, 2015

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**Other special considerations for handling**

: Provide adequate information, instruction and training for operators.

<p><b><u>Prepared for:</u></b>                  Lowry &amp; Associates, Div. of Chem-Aquascience, Inc.                  5-1151 Gorham Street                  Newmarket, ON L3Y 8Y1                  www.lowryassociates.ca</p>	
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