



Tennessee Valley Authority, 714 Swan Pond Road Trailer Park, Harriman, Tennessee 37748

March 20, 2009

Mr. Paul Davis, Director
Division of Water Pollution Control
Tennessee Department of Environment
and Conservation
6th Floor, L&C Annex
401 Church Street
Nashville, Tennessee 37402

Dear Mr. Davis:

**TENNESSEE VALLEY AUTHORITY (TVA) – COMMISSIONER'S ORDER, CASE NUMBER
OGC09-0001 – REQUEST FOR AUTHORIZATION TO USE POLYMERS TO ENHANCE
TREATMENT OF DREDGE RETURN WATER**

As you know, TVA has begun ash dredging operations today. We believe we have developed a satisfactory plan to address dredge return water in Kingston Fossil Plant's (KIF) sluice trench and ash pond complex. TVA is continuing to investigate other potential areas on site that may be appropriate for future ash processing. If a suitable on-site location can be developed to process ash, we will submit that information when it becomes available.

As a precautionary measure, TVA is also herein requesting approval of several different polymers for use in the sluice trench and ash pond complex to enhance solids removal and to ensure compliance with the total suspended solids limits at the NPDES permitted outfall (Internal Monitoring Point 001). These polymers have undergone bench-scale testing at KIF and 96-hr chronic aquatic toxicity testing at TVA's contract toxicity testing laboratory to ensure that they are effective in rapidly settling out solids and are not toxic to aquatic organisms.

Product names, feed rates, and toxicity results from pilot testing of the product in site water with ash are shown below.

Polymer Name	Target feed rate	Discharge at 001* (mg/L) and %	TVA toxicity test results (product concentration %)
GE Polyfloc AP1142	10 ppm	0.5 mg/L; 0.00005%	IC25 (C. dubia) = >100; IC25 (P. promelas) = >100. [GE published results 48-hr LC50 = 352 mg/l (D. magna) and 96-hr LC 50 = 465 mg/L (P. promelas)
Kemira DPAM A110	<100 ppm	8.0 mg/L; 0.0008%	IC25 (C. dubia) = >100; IC25 (P. promelas) = >100
Kemira PAX-XL 19	<100 ppm	11.8 mg/L; 0.001%	IC25 (C. dubia) = >100; IC25 (P. promelas) = >100

*Assumes stilling pond volume only to conservatively address the application site.

Mr. Paul Davis
Page 2
March 20, 2009

TVA has enclosed material safety data sheets for these products for your review. Please note that the ecotoxicological information on the MSDS for the Kemira products is for a structurally similar product, not the specific product itself.

TVA will monitor the conditions of the ash pond complex as described in the previously approved Dredging Plan and Ash Pond Management Plan to determine if the addition of polymers is necessary. TVA does not expect to require polymer use during the first few days of dredging, but would like to have approval for polymers in hand early in the dredging operations in order to be prepared in case of worse-than-anticipated settling in the ash pond complex.

TVA appreciates your expeditious approval of our request to use these polymers to augment settling in the ash pond complex. Should you have any questions, please do not hesitate to contact me at (423) 871-1666 or by email at cmanderson@tva.gov.

Sincerely,



Cynthia M. Anderson
Manager, Water and Waste Programs

LPJ:DJC

Enclosures

cc (Enclosures):

Mike Apple, TDEC DSWM
5th Floor, L&C Annex
401 Church Street
Nashville, TN 37243

Saya Qualls, TDEC DWPC
6th Floor, L&C Annex
401 Church Street
Nashville, TN 37243

Bradley Bishop
U. S. Army Corps of Engineers
Regulatory Branch
3701 Bell Road
Nashville, TN 37214-2660

Paul Schmierbach, TDEC DWPC
3711 Middlebrook Pike
Knoxville, TN 37921

Rick Brown, TDEC DSWM
3711 Middlebrook Pike
Knoxville, TN 37921

Paul Sloan, TDEC Deputy Commissioner
1st Floor, L&C Annex
401 Church Street
Nashville, TN 37243

Chuck Head
5th Floor, L&C Annex
401 Church Street
Nashville, TN 37243

Tom Welborn, 404 Section Chief
EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

Glen Pugh, TDEC DSWM
5th Floor, L&C Annex
401 Church Street
Nashville, TN 37243

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Kemira PAX-XL19
Synonyms: Poly(aluminumhydroxy)chloride; Aluminum chlorohydrate
Product Description: Polyaluminum Chloride Solution
Chemical Family: Polynuclear inorganic salt
Intended/Recommended Use: Water treating chemical

KEMIRA WATER SOLUTIONS, INC., 808 EAST MAIN STREET, LAKELAND, FLORIDA 33801, USA
For Product Information call 1-800/879-6353. Outside the USA and Canada call 1-785/842-7424.
EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call CHEMTREC: 1-800/424-9300.
Outside the USA and Canada call 1-703/527-3887.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

Component / CAS No.	%	(w/w)	OSHA (PEL):	ACGIH (TLV)	Carcinogen
Poly(aluminum hydroxy) chloride 1327-41-9	45 - 55		Not established	2 mg/m ³ as Al (TWA)	-

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR:

Color: Clear amber or colorless
Appearance: liquid
Odor: pungent slight chlorine

STATEMENTS OF HAZARD:

WARNING! IRRITATING TO EYES, SKIN, RESPIRATORY AND DIGESTIVE TRACTS

POTENTIAL HEALTH EFFECTS

EFFECTS OF EXPOSURE:

Direct contact with this material may cause moderate eye and skin irritation. Inhalation overexposure to the mist or vapor may cause respiratory tract irritation. Refer to Section 11 for toxicology information on the regulated components of this product. The acute oral (rat) LD50 is estimated to be >2000 mg/kg.

4. FIRST AID MEASURES

4. FIRST AID MEASURES

Ingestion:

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. Give one or two glasses of water to drink and refer to medical personnel or take direction from either a physician or a poison control center.

Skin Contact:

Do not reuse contaminated clothing without laundering. Wash immediately with plenty of water. Remove contaminated clothing and shoes without delay. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.

Eye Contact:

In case of eye contact, immediately irrigate with plenty of water for 15 minutes. Obtain medical attention without delay for any symptoms of injury to the eye.

Inhalation:

Remove to fresh air. If breathing is difficult, give oxygen. Apply artificial respiration if patient is not breathing. Obtain medical attention immediately.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

The substance is not combustible. Use extinguishing media appropriate to the surrounding fire.

NOTE: Also see "Section 10 - Stability and Reactivity"

Protective Equipment:

Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection). Firefighters, and others exposed, wear self-contained breathing apparatus.

Special Hazards:

Keep containers cool by spraying with water if exposed to fire. Decomposition releases may include hydrogen chlorides, aluminum oxides, and oxides of sulfur. During a fire, irritating/toxic and corrosive fumes may evolve.

Mechanical/Static Sensitivity Statements:

None

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

'Restrict access until clean-up operations are complete. Wear appropriate Personal Protective Equipment per Section 8.

Ensure trained personnel conduct clean up and wear Personal Protective Equipment per Section 8.

'Stop leak if possible. Avoid personal risk.

Methods For Cleaning Up:

'Small Spills - Absorb spill with clay or dry material or neutralize with lime, limestone or soda ash and collect in appropriate container for disposal. Neutralization with soda ash can generate carbon dioxide so additional ventilation may be necessary.

'Large Spills - Prevent entry into sewers and confined areas. Dike, if possible. Keep unnecessary people away, isolate area and deny entry. Pump liquid material into appropriate vessels as possible or absorb spill with clay absorbents or non-reactive dry materials and collect in appropriate container for disposal.

Neutralize spill residuals carefully with lime, limestone, or soda ash and collect in suitable container for disposal. Flush area with water. This could generate carbon dioxide so additional ventilation may be necessary.

'Notify Authorities if release exceeds reportable quantity per Section 15

7. HANDLING AND STORAGE

HANDLING

Precautionary Measures: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Special Handling Statements: Review the label, this MSDS and any other applicable information before use. Keep separated from incompatible substances. Use appropriate Personal Protective Equipment per Section 8. Handle only with equipment, materials and supplies specified by their manufacturer as being compatible and appropriate for use with this product.

STORAGE

Prevent material from coming in contact with common metals. Material may be stored in tightly closed shipping containers, preferably the suppliers containers. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do not use metal containers. Product should be used within one (1) year

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

Respiratory Protection:

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

Eye Protection:

Eyewash equipment and safety shower should be provided in areas of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

Skin Protection:

Wear impermeable gloves and suitable protective clothing. Avoid skin contact.

Additional Advice:

Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Clear amber or colorless
Appearance:	liquid
Odor:	pungent slight chlorine
Boiling Point:	100 - 110 °C
Melting Point:	< -5 °C 23 °F
Vapor Pressure:	18mm Hg @ 20 °C
Specific Gravity/Density:	1.15 - 1.40 @ 25 °C
Vapor Density:	1.3
Percent Volatile (% by wt.):	Not available
pH:	0.5 - 4.4
Saturation In Air (% By Vol.):	Not applicable
Evaporation Rate:	Not applicable
Solubility In Water:	Complete
Volatile Organic Content:	None
Flash Point:	Not applicable
Flammable Limits (% By Vol):	Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

Autoignition Temperature:	Not applicable
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	Avoid contact with mineral acids, excessive heat and bases/alkalis.
Polymerization:	Will not occur
Conditions To Avoid:	None known
Materials To Avoid:	Metals such as iron or steel which are subject to corrosion. Carbon steel, aluminum, carbon, brasses, and nylon.
Hazardous Decomposition Products:	Thermal decomposition: after completely dry and heated to decomposition will produce sulfur oxides and aluminum oxides as well as HCL gas.

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION.
Toxicological information on the regulated components of this product is as follows:

Polyaluminum chloride (PAC) has an estimated acute oral (rat) LD50 of >13.0 g/kg. Aqueous solutions of PAC are very acidic. Direct contact may cause moderate to severe eye and skin irritation. The acute oral (mouse) LD50 for aluminum chloride is 770 mg/kg. The dermal (rabbit) LD50 is >2000 mg/kg. Direct skin contact with the soluble salts of aluminum results in moderate irritation.

12. ECOLOGICAL INFORMATION

Ecological Assessment

The ecological properties of this material have not been fully investigated.

All ecological information provided was conducted on a structurally similar product.

Duration: 48 hr. **Procedure:** Static.
Species: Fathead Minnow (*Pimephales promelas*)
354 ppm LC50

Duration: 96 hr
Species: Zebra Fish (*Brachydanio rerio*)
>1000 mg/l LC50

Duration: 24hr
Species: Coho Salmon (*Oncorhynchus kisutch*)
10 mg/l LC50

Duration: 48 hr **Procedure:** Static
Species: Water Flea (*Ceriodaphnia dubia*)
83 ppm LC50

Duration: 48 hr
Species: Water Flea (*Daphnia magna*)
98 mg/l EC50

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA `listed hazardous waste` or has any of the four RCRA `hazardous waste characteristics.` Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA `listed hazardous waste`; information contained in Section 15 of this MSDS is not intended to indicate if the product is a `listed hazardous waste.` RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class: 8
Packing Group: III
UN/ID Number: UN3264
Transport Label Required: Corrosive
Technical Name (N.O.S.): Contains polyaluminum chloride
Hazardous Substances:
Not applicable

TRANSPORT CANADA

Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class: 8
Packing Group: III
UN Number: UN3264
Transport Label Required: Corrosive
Technical Name (N.O.S.): Contains polyaluminum chloride

ICAO / IATA

Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class: 8
Packing Group: III
UN Number: UN3264
Transport Label Required: Corrosive
Packing Instructions/Maximum Net Quantity Per Package:
Passenger Aircraft: See regulations
Cargo Aircraft: See regulations
Technical Name (N.O.S.): Contains polyaluminum chloride

IMO

Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class: 8
UN Number: UN3264
Packing Group: III
Transport Label Required: Corrosive
Technical Name (N.O.S.): Contains polyaluminum chloride

15. REGULATORY INFORMATION

INVENTORY INFORMATION

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Union (EU): All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS).

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Poly(aluminum hydroxy) chloride 1327-41-9	45 - 55	None	0	No	No

This product does not contain any components regulated under these sections of the EPA

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 1 - Materials that, under emergency conditions, can cause significant irritation.

Fire: 0 - Materials that will not burn.

Reactivity: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons For Issue: Revised Section 12

Richard Moye, Product Regulatory, 1-251-662-1581
02/20/2009

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification. Before using any product, read its label.

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: DPAM A110 (formerly 16206S)
Synonyms: None
Product Description: Anionic polyacrylamide
Chemical Family: Polyacrylamide
Intended/Recommended Use: Flocculant

KEMIRA WATER SOLUTIONS, INC., 808 EAST MAIN STREET, LAKELAND, FLORIDA 33801, USA
For Product Information call 1-800/879-6353. Outside the USA and Canada call 1-785/842-7424.
EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call CHEMTREC: 1-800/424-9300.
Outside the USA and Canada call 1-703/527-3887.

® indicates trademark registered in the U.S. Outside the U.S., mark may be registered, pending or a trademark. Mark is or may be used under license.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

Component / CAS No.	% (w/w)	OSHA (PEL): ACGIH (TLV) Carcinogen
Hydrocarbon oil	0.025 - 0.008	500 ppm 1200 (hud) - mg/m ³ (Supplier) 165 ppm (Supplier)

No Permissible Exposure Limits (PEL/TLV) have been established by OSHA or ACGIH.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR:

Color: off white
Appearance: solid
Odor: odorless

STATEMENTS OF HAZARD:

IMPORTANT! SPILLS OF THIS PRODUCT ARE VERY SLIPPERY WHEN WET

POTENTIAL HEALTH EFFECTS

EFFECTS OF EXPOSURE:

The acute oral (rat) LD50 and dermal (rabbit) LD50 values are >5,000 mg/kg and >10,000 mg/kg, respectively.
Direct contact with this material may cause minimal eye and skin irritation.

4. FIRST AID MEASURES

Ingestion:

Material is not expected to be harmful by ingestion. No specific first aid measures are required.

Skin Contact:

Wash immediately with plenty of water and soap.

Eye Contact:

Rinse immediately with plenty of water for at least 15 minutes.

Inhalation:

Remove to fresh air. Material is not expected to be harmful if inhaled.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Use water spray or fog, carbon dioxide or dry chemical.

Protective Equipment:

Firefighters, and others exposed, wear self-contained breathing apparatus.

Special Hazards:

Dust may be explosive if mixed with air in critical proportions and in the presence of a source of ignition.

Mechanical/Static Sensitivity Statements:

Maintain good housekeeping to control dust accumulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Refer to Section 8 (Exposure Controls/Personal Protection) for appropriate personal protective equipment.

Methods For Cleaning Up:

Sweep up into containers for disposal. Flush spill area with water. Slippery when wet. Prevent liquid entering sewers. If slipperiness remains apply more dry-sweeping compound.

7. HANDLING AND STORAGE

HANDLING

Precautionary Measures: Spills should be scooped up or wiped up immediately, and the spill area flushed with water.

Special Handling Statements: Maintain good housekeeping to control dust accumulations.

STORAGE

To avoid product degradation and equipment corrosion, do not use iron, copper or aluminum containers or equipment.

Storage Temperature: Store at 4 - 32 °C 40 - 90 °F

Reason: Integrity.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Engineering controls are not usually necessary if good hygiene practices are followed.

Respiratory Protection:

None recommended

Eye Protection:

Wear eye/face protection.

Skin Protection:

Wear impermeable gloves. Avoid skin contact.

Additional Advice:

Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	off white
Appearance:	solid
Odor:	odorless
Boiling Point:	Not applicable
Melting Point:	Not available
Vapor Pressure:	Not applicable
Specific Gravity/Density:	0.75 - 0.95
Vapor Density:	Not applicable
Percent Volatile (% by wt.):	10 - 13(water)
pH:	5 - 7(aqueous solution)
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not applicable
Solubility In Water:	Limited by viscosity
Volatile Organic Content:	Not available
Flash Point:	Not applicable
Flammable Limits (% By Vol):	Not applicable
Autoignition Temperature:	>200 °C 392 °F
Decomposition Temperature:	>200 °C 392 °F
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	None known
Polymerization:	Will not occur
Conditions To Avoid:	None known
Materials To Avoid:	No specific incompatibility
Hazardous Decomposition Products:	Ammonia (NH ₃) Carbon dioxide Carbon monoxide (CO) oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION.

Toxicological information on the regulated components of this product is as follows:

This product contains no OSHA regulated (hazardous) components.

This product contains no WHMIS regulated (hazardous) components.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause cancer.

12. ECOLOGICAL INFORMATION

All ecological information provided was conducted on a structurally similar product.
This material is not classified as dangerous for the environment.

Acute toxicity tests conducted using environmentally representative water gave the following results:

ALGAE TEST RESULTS

Test: Growth Inhibition (OECD 201)

Duration: 72 hr

Species: Marine Algae (*Skeletonema costatum*)
2276 mg/l IC50

Test: Growth Inhibition (OECD 201)

Duration: 72 hr.

Species: Green Algae (*Selenastrum capricornutum*)
>100 mg/l IC50

FISH TEST RESULTS

Test: Acute toxicity, freshwater (OECD 203)

Duration: 96 hr.

Species: Bluegill Sunfish (*Lepomis macrochirus*)
180 mg/l LC50

Test: Acute toxicity, freshwater (OECD 203)

Duration: 96 hr

Species: Rainbow Trout (*Oncorhynchus mykiss*)
130 mg/l LC50

Test: Acute toxicity, freshwater (OECD 203)

Duration: 96hr

Species: Fathead Minnow (*Pimephales promelas*)
670 mg/l LC50

Test: Acute toxicity, freshwater (OECD 203)

Duration: 96 hr

Species: Zebra Fish (*Brachydanio rerio*)
>100 mg/l LC50

INVERTEBRATE TEST RESULTS

Test: Acute Immobilization (OECD 202)

Duration: 10 day

Species: Marine Amphipod (*Corophium volutator*)
1415 mg/l EC50

Test: Acute Immobilization (OECD 202)

Duration: 48 hr

Species: Water Flea (*Daphnia magna*)
>100 mg/l EC50

Test: Acute Immobilization (OECD 202)

Duration: 48 hr

Species: Marine Copepod (*Acartia tonsa*)

342 mg/l EC50

DEGRADATION

Test: Closed Bottle (OECD 301D)

Duration: 28 day **Procedure:** Ready biodegradability

<70 %

Test: Seawater Shake Flask Method (OECD 306)

Duration: 28 day **Procedure:** Biodegradability in seawater

1.7 %

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA `listed hazardous waste` or has any of the four RCRA `hazardous waste characteristics.` Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA `listed hazardous waste`; information contained in Section 15 of this MSDS is not intended to indicate if the product is a `listed hazardous waste.` RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Proper Shipping Name: Not applicable/Not regulated

Hazardous Substances:

Not applicable

TRANSPORT CANADA

Proper Shipping Name: Not applicable/Not regulated

ICAO / IATA

Proper Shipping Name: Not applicable/Not regulated

Packing Instructions/Maximum Net Quantity Per Package:

Passenger Aircraft: -

Cargo Aircraft: -

IMO

Proper Shipping Name: Not applicable/Not regulated

15. REGULATORY INFORMATION

INVENTORY INFORMATION

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Union (EU): All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS).

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Japan: All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

This product does not contain any components regulated under these sections of the EPA

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Not applicable
-

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 0 - Materials that under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

Fire: 1 - Materials that must be preheated before ignition can occur.

Reactivity: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons For Issue: New Format

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification. Before using any product, read its label.



Material Safety Data Sheet

Issue Date: 19-JUN-2008
Supersedes: 01-APR-2004

POLYFLOC AP1142

1 Identification

Identification of substance or preparation
POLYFLOC AP1142

Product Application Area
Flocculant.

Company/Undertaking Identification
GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355-3300, F 215 953 5524

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: T 215-355-3300 Prepared on: 19-JUN-2008

2 Hazard(s) identification

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. Potential eye irritant due to mechanical action only. Dusts may cause irritation to the upper respiratory tract.

DOT hazard is not applicable
Odor: None; Appearance: White, Powder

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type). Proper fire-extinguishing media: dry chemical/CO2/foam or water--slippery condition; use sand/grit.

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:

Potential eye irritant due to mechanical action only.

ACUTE RESPIRATORY EFFECTS:

Dusts may cause irritation to the upper respiratory tract.

INGESTION EFFECTS:

May cause gastrointestinal irritation.

TARGET ORGANS:

No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin.

3 Composition / information on ingredients

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

This product is not hazardous as defined by OSHA regulations.

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

4 First-aid measures

SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

EYE CONTACT:

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists after flushing.

INHALATION:

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 2-8 fluid ounces (60-240 mL) of milk or water.

NOTES TO PHYSICIANS:

No special instructions

5 Fire-fighting measures

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

dry chemical/CO2/foam or water--slippery condition; use sand/grit.

HAZARDOUS DECOMPOSITION PRODUCTS:

oxides of carbon

FLASH POINT:

> 200F > 93C P-M(CC)

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Sweep up and remove. Minimize dust generation.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 Handling and storage

HANDLING:

This material may be combustible. As with all dry powders it is advisable to ground mechanical equipment in contact with dry material to dissipate the potential buildup of static electricity.

STORAGE:

Keep containers closed when not in use. Do not expose to moisture. Do not store near oxidizers or at elevated temperatures.

8 Exposure controls / personal protection

EXPOSURE LIMITS

This product is not hazardous as defined by OSHA regulations.

ENGINEERING CONTROLS:

adequate ventilation

PERSONAL PROTECTIVE EQUIPMENT:

Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.

If air-purifying respirator use is appropriate, use any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.

SKIN PROTECTION:

Use of gloves made of rubber or synthetic material is optional. Wash off after each use. Replace as necessary.

EYE PROTECTION:

safety glasses

9 Physical and chemical properties

Density	NO DATA	Vapor Pressure (mmHG)	< 0.1
Freeze Point (F)	NA	Vapor Density (air=1)	< 1.00
Freeze Point (C)	NA		
Viscosity(cps 70F,21C)	NA	% Solubility (water)	1.0

Odor		None	
Appearance		White	
Physical State		Powder	
Flash Point	P-M(CC)	> 200F > 93C	
pH 1% Sol. (approx.)		7.0	
Evaporation Rate (Ether=1)		< 1.00	
Percent VOC:		0.0	

NA = not applicable ND = not determined

10 Stability and reactivity

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

oxides of carbon

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"A"

11 Toxicological information

Oral LD50 MOUSE:	>2,000 mg/kg
Dermal LD50 RABBIT:	>2,000 mg/kg

NOTE - Estimated value

12 Ecological information

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Static Acute Bioassay
LC50= 352; No Effect Level= 135 mg/L
Fathead Minnow 96 Hour Static Acute Bioassay
LC50= 465; No Effect Level= 100 mg/L

BIODEGRADATION

COD (mg/g): 1120
TOC (mg/g): 450

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 Transport information

DOT HAZARD: Not Applicable
PROPER SHIPPING NAME:

DOT EMERGENCY RESPONSE GUIDE #: Not applicable
Note: Some containers may be DOT exempt, please check BOL for exact container classification

15 Regulatory information

TSCA:

All components of this product are included on or are in compliance with the U.S. TSCA regulations.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

FOOD AND DRUG ADMINISTRATION:

21 CFR 176.110 (acrylamide - acrylic acid resins)
All ingredients comprising this product are authorized by FDA for the manufacture of paper and paperboard that may contact aqueous and fatty foods as per 21 CFR 176.170(a) (4).

SARA SECTION 312 HAZARD CLASS:

Product is non-hazardous under Section 311/312

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC

ENFORCEMENT ACT (PROPOSITION 65):

This product contains one or more ingredients known to the state of California to cause cancer.

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

NFPA/HMIS		CODE TRANSLATION
Health	1	Slight Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	A	Safety Glasses

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE -----	REVISIONS TO SECTION: -----	SUPERCEDES -----
MSDS status:	28-JAN-1997		** NEW **
	14-OCT-1997	8	28-JAN-1997
	23-MAR-1998	12	14-OCT-1997
	17-JUL-1998	8	23-MAR-1998
	01-JUN-1999	15	17-JUL-1998
	02-MAY-2002	3, 4	01-JUN-1999
	08-AUG-2002	2, 3, 8, 15, 16	02-MAY-2002
	01-APR-2004	15	08-AUG-2002
	19-JUN-2008	4, 5, 6, 7, 8, 10	01-APR-2004