August 5, 2022

ADDENDUM 1 – RFP# 917461 - The Provision of Services for the Disposal of Hazardous Waste PCB Oil Equipment and other Materials

The purpose of this Addendum is to provide updates as follows:

1. Updates to Submission of Bids and Selection Criteria - Confirm bid extension by 3 weeks as per included RFP Calendar
2. Extending Period of Contract
3. To respond to questions posed relating to the subject RFP,
4. Remove “Unknown Chemicals” from Table with PCB Equipment and Hazardous Materials for Disposal; Adding drums with fire damaged insulators & Cross Arms
5. Include pictures for all Known Chemicals Listings and available SDS within RFP

8. SUBMISSION OF BIDS AND SELECTION CRITERIA

8.1. Bid Response

All responses must be in English Language. Your bid response must be presented in two (2) separate packages, namely Commercial and Technical. Note that the Commercial package will not be opened (or evaluated) if the technical requirements are not met. The deadline for submission of bids is **11:59 p.m. on Friday September 2, 2022**.

8.2 Calendar of Activities

RFP CALENDAR		
ACTIVITY	**DUE DATE**	**RESPONSIBILITY**
RFP date	**2022 July 8**	JPS
Site Visit/Virtual Tour	**2022 July 15**	JPS & Bidders
Bidder submits questions on RFP (Final Date)	**2022 July 19**	Bidders
Final date to respond to all queries	**2022 August 5**	JPS
Bidder confirms their intention to bid	**2022 August 11**	Bidders
Access Granted to ShareFile	**2022 August 12**	JPS
Completion of RFP and deadline for upload of bids to JPS ShareFile	**2022 September 2 at 11:59 p.m. (Eastern Standard Time)**	Bidders
Closed Bid Opening	**2022 September 5**	JPS
Review and Evaluation of Bids	**2022 October 3**	JPS
Notification to short-listed bidders	**2022 October 10**	JPS
Post Tender Presentation & Negotiations to be completed	**2022 October 17**	JPS
Final selection and advise all bidders	**2022 October 24**	JPS
Contract / PO signing	**2022 October 31**	JPS

The Company may, at its discretion, extend this deadline for the submission of proposals, in which case all rights and obligations of the Company and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

13. CONDITIONS OF CONTRACT

13.1Period of Contract

The duration of the contract will be for a period of twenty-four to thirty (24 – 30) Months from the date of award of the contract.

QUESTIONS POSED RELATING TO THE RFP

#	Topic	Question	JPS RESPONSE
1	Unknown chemicals	Kindly provide more information on the chemical analysis of unknown chemicals. Please kindly clarify the origin of the waste of unknown chemicals.	**Chemicals are residual for power plant operations – lubricants, water treatment, etc. No chemical analysis has yet been done on these unknown Chemicals, however we will proceed with that undertaking. Until then, the RFP will be amended to remove Unknown Chemicals and re-tendered for Chemicals after the analysis is done.**
4	Unknown chemicals	Is there a storage space from JPS that can be used for storing repacked waste until a Basel Convention permit is attained?	**LIMITED SPACE**
	Unknown chemicals	We would like to have a list of the products and their characteristics (are they liquid, solid, muddy, pasty...) as well as photos.	**There is currently no list of the unknown chemicals – container labels have faded beyond recognition. No chemical assessment has yet been done. Please see JPS's response to Question 1 as a guide**
	Known Chemicals	What are the specifications ((are they liquid, solid, muddy, pasty…) and pictures.	**Known chemicals are either liquid to pasty. List has been attached with names, pictures ans SDS where available**
2	PCBs	Kindly provide the level of PCBs at present.	**All transformers were drained of pcb oil (>50 ppm) however there is residual oil as the transformers have been sitting for more than 5 years.**

3	Project phase	Concerning the project complexity on PCB and unknown chemicals, the disposal code for waste stream is nearly impossible to be defined without any clarity on the chemical analysis data/information. Is there any possibility for budget for preliminary assessment (as Phase 1)? Based on this, we would like to suggest second phase for disposal related services.	**Comment/suggestion is noted for consideration.**
5	Proposal submission deadline	To prepare a bid complying all the requirements in the RFP, kindly consider an extension of the proposal submission deadline by 2 weeks.	**Bid to be extended for 3 weeks – RFP calendar will be amended to reflect change and Addendum issued**
6	Project scheduling extension	In case we don't receive Basel Convention permit, is It possible to extend project completion deadline?	**Subject to contract terms and phase of Basel Convention permit application**
7	Basel Convention	On Basel Convention documents, please confirm if JPS will be the only waste generator. Shall the notifier be the part contractor/supplier team? Or, this shall be JPS too?	**JPS is only waste generator. Notifier shall be JPS – assistance from contractor to complete notification will be required**
8	Batteries	What about the batteries ? Are they lithium batteries ? lead batteries ? Do you know the technology of each battery? Any pictures ?	**Batteries are Ni-Cd, please see picture attached. Additional pictures were uploaded to the JPS website under the JPS RFP 91761 based on the Virtual Site Visit.**
10	Bid Submission	Is that possible to prepare a bid only for a certain category of waste (like PCB Waste) ? For instance, we are not sure to undertake unknown chemical waste without a clear waste characterization.	**Yes, a bid can be prepared for PCB waste only.**
11	Electronic Waste	Why is "Electronic Waste" considered dangerous? Is it in the ink (located in printers for example) or does it come from other substances?	**E-Waste (computer monitors, CPUs, printers and accessories) is locally considered hazardous and**

			there is local market for proper disposal or recycling the components – included in this Waste Disposal RFP.
12	Transformers	Pad-mounted transformers, switch banks, capacitors banks : We would need dimensions, weight, amount of PCB oil contained inside as well as photos.	**All transformers were drained of PCB oil (>50 ppm) however there is residual oil as the transformers have been sitting for more than 5 years.**
13	Characteristics of Containers	What are the characteristics of the different containers: volume, size, weight (crates, boxes, totes, supersacs, tines, pails and buckets, ...)	**- The crates/boxes are made on site with reclaimed wood material, sizes vary from (l x w x h) 2'x3'x4', 3'x 3'x 2', 3'x3'x5'.** **- The totes are for liquids – capacity 500L** **- Supersacs** **- Tins Pails and buckets vary from 1 USG to 5 USG**
14	Ashes & Slag	Where do the ashes and slag come from? Can they be considered as non-hazardous waste and therefore be disposed of in a landfill?	**Ash and slag are petroleum HFO#6 residue from boiler cleanings. Local regulations list it as Hazardous Waste**
15	Additional details on Waste	If possible, we would like to have pictures of all the waste and their weight or volume.	**Not possible to get actual weights or volumes at this time. Estimated weights/volumes will be added to list.**
16	Mercury Waste	What is its origin?	**Power plant temperature gauge**
17	Mercury Waste	What is its state (liquid, solid, paste)?	**Liquid spill was contained with sawdust, bagged and drummed in 55-USG metal drum**

18		Is there any cross-contamination (with asbestos or other) or direct contact with other waste?	**No direct contact with other waste**
	Mercury Waste		
19		We would need photos of the Mercury and the current packaging.	**Pictures will be provided**
20			

11.1.1 Equipment and Material for Disposal

The type of waste and quantity (based on actual counts and estimates in some cases) is shown in Table 1 below.

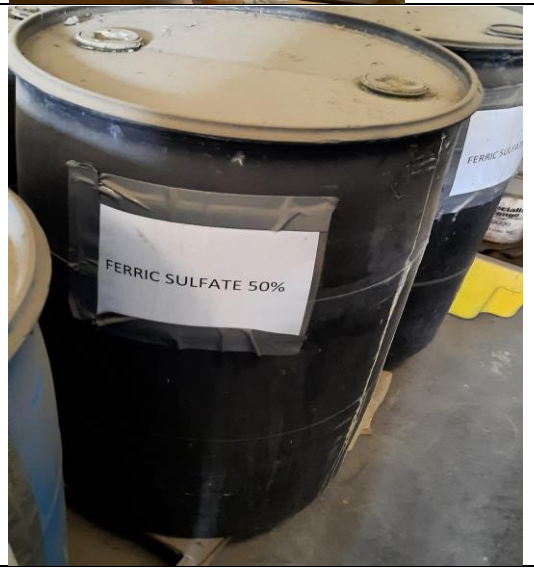
Table 1: PCB Equipment and Hazardous Materials for Disposal

Types of Waste	Unit Measurement	Approximate Quantity of Waste (#, Kg, L)
Pad-mounted Transformers – PCB oil (empty)	each	7*
Pad-mounted Transformers – PCB oil	each	10
PCB contaminated miscellaneous	55-USG drums	13
PCB contaminated miscellaneous sawdust Test Kit	55-USG drums	1
Oil contaminated soil	20 ft Container	2##
Oil contaminated material	Transformer bags	4
Oil Contaminated soil & miscellaneous solids	55-USG drums	26+45
Oily Rags	55-USG drums	40
Switch Banks	Each	3
Capacitor banks	each	~2000
Bulbs	crate#	190
Photo cells	crate	62
Bulbs and Photocell mixed	crate	80
Computer parts - power supply, circuit board, capacitors	box	1
CPU	each	31
Monitor	each	40
Keyboard	each	12
Laptop	each	32
Printer	each	9**
Known Chemicals	55-USG drums	79 (Specifics required: Name: SDS, Chemical Makeup
Hazardous Chemicals	Empty Totes	25
Hazardous Chemicals	Totes	16
Mercury waste - broken measuring device	55-USG drum	1
AMS Station Equipment hazardous waste - Radioactive material in Thermo PM analyser	analyser unit	1
Used batteries	each	105

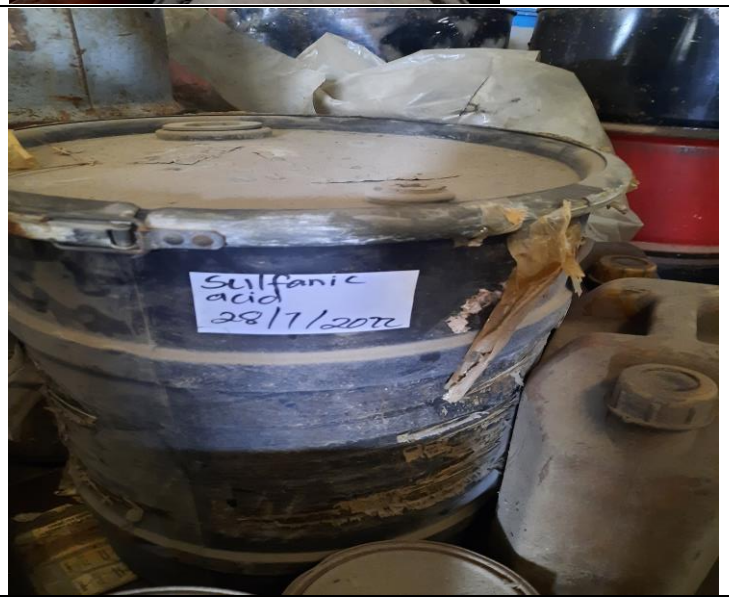
Empty oil drums	55-USG drums	30
Ash & Slag	supersac	72***
fire damaged fiberglass cross arms and insulators	55-USG drums	18

Notes:
crate may hold approximately 600 or more bulbs
each container may hold 40 - 55USG drums
* 2 located at Hunts Bay
** 3 located at the Head Office – bill printers
*** located at Hunts Bay

Name of Chemical Identification	State of Chemical	Container Size	Quantity	Labelling	Image
Alum Liquor 48.5%	Liquid	Gallons (55)	7	Alum Liquor 48.5%	
Dianodic DN2470	Liquid	Gallons (55)	3	Dianodic DN2470	
Formula X-ES	Liquid	Gallons (55)	1	Formula X-ES	
Osmoplastic Wood Preservative	Gel/Paste	Gallons (5)	19	Osmoplastic Wood Preservative	

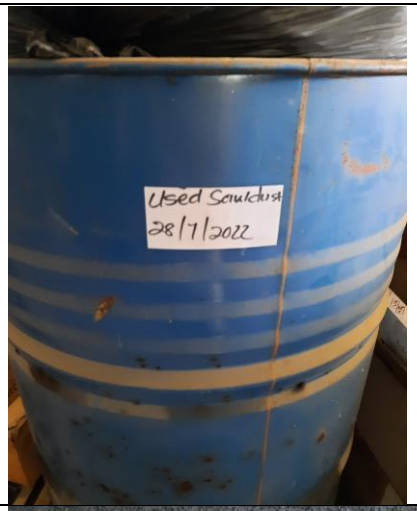
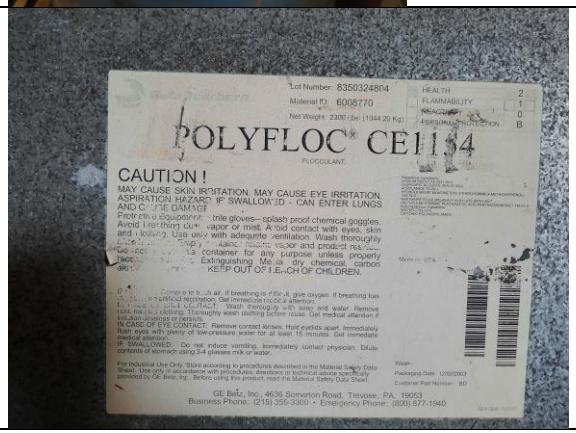
Sprayable Dielectric Silicone Compound		Gallons (5)	11	Insulator Compound (catalogue compound C309-0827) Sprayable dielectric silicone compound	
Mercury	Liquid	Gallons (55)	1	Danger Mercury	
50% Ferric Sulphate	Liquid	Gallons (55)	10	Ferric Sulphate 50%	
Drew 11 (760)	Liquid	Gallons (55)	1	Drew 11 (760)	

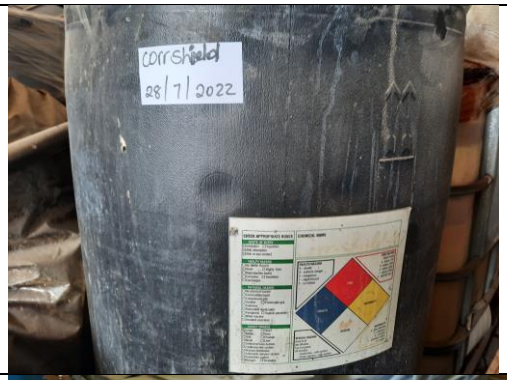
48% Aluminum Sulphate	Liquid	Gallons (55)	2	48% Aluminum Sulphate	
Drew 11-635A	Liquid	Gallons (55)	1	Drew 11-635A	
Liquid Floor Polish	Liquid	Gallons (55)	1	Liquid Floor Polish	
Cooling Water Treatment	Liquid	Gallons (55)	2	Cooling Water Treatment	
Synthetic Hydrochloric Acid	Liquid	Gallons (55)	1	Synthetic Hydrochloric Acid	
Silica Gel Dessicant	Solid	Gallons	1	Silica Gel Dessicant	
Resin (used)	Solid	Gallons (55)	16	Resin (used)	
PCB contaminated soil/pebbles, rags etc	Solid	Gallons (55)	19	Contaminated Soil Set 1 &2 Contaminated PCB items	

Epoxy Coal Tar	Gel	Gallon	44	Specialist Range Narko Epoxy Coal Tar	
Sulphumic Acid (Dry State)	Solid	Gallons (5)	2	Sulphumic Acid (Dry State)	

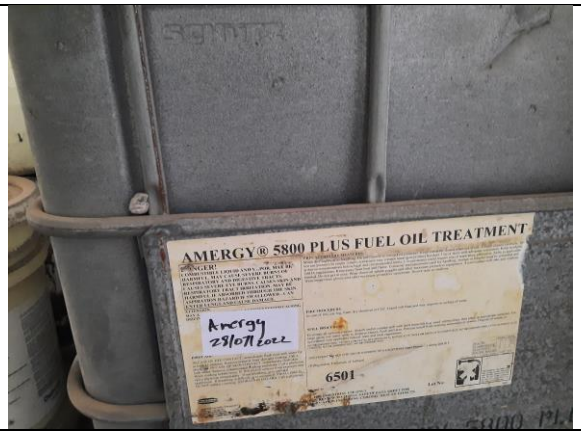
Contaminated PCB Capacitors	Solid		20		
PCB Oil	Liquid	Gallons (55) Gallons (330)	5 2 1	Caution PCB Oil Hunts Bay Power Station MCC Room Transformer Caution Contains PCBs Caution PCB Oil Drum 1 of 1 Hunts Bay Power Station MCC Room Transformer	

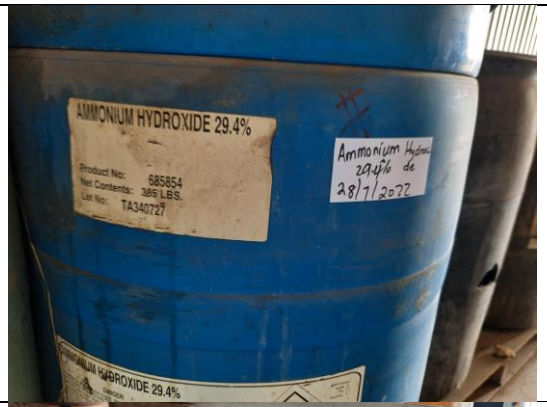
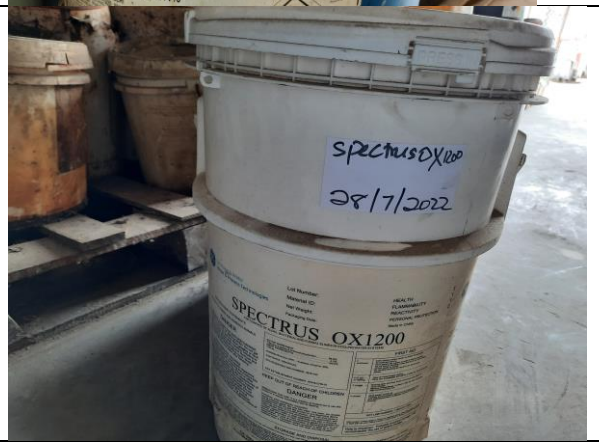
					 	

Saw Dust from PCB Spill	Solid	Gallons (55)	1	Used Saw Dust	
Polyfloc CE1154	Liquid	Gallons (330)	5	Polyfloc CE1154	

Corrshield NT4202	Liquid	Gallons (55)	5	Corrshield NT4202 (empty containers)	
Contaminated Soil (Mineral Oil)	Solid	Gallons (55)	3	Stained Gravel	
Oil Drums (Empty)		Gallon	3		
Aquamax DSTQ915	Liquid	Gal	1	Aquamax DSTQ915	

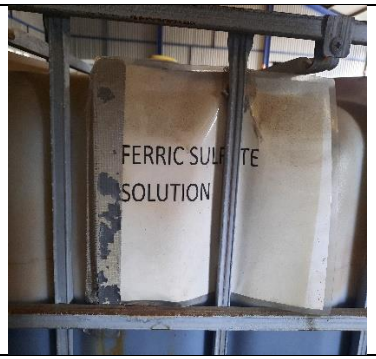
Quest F200		Gal	1	Quest F200	
Fire Guard	Solid	Gallons (5)	20	Fire Guard Protective Coating	

Amergy 5500 Plus Fuel Oil Treatment (Empty Container)		Gal	1	Amergy 5500 Plus Fuel Oil Treatment (Empty Container)	
AccQ	Liquid	Gallons (55)	1	AccQ	
Cortrol	Liquid		2	Cortrol IS7615	
Spectrus CT1300	Liquid	Gallons (55)	1	Spectrus CT1300	

29.4% Ammonium Hydroxide	Liquid	Gallons (55)		Ammonium Hydroxide 29.4%	
Spectrus OX1200	powder/solid	Gallons (5)	6	Spectrus OX1200	
Dyraflake	paste	Gallon	6	Dyraflake	
Amerstat (Empty Containers)		Gallon	4	Amerstat (Empty Containers)	

Optisperse ADJ0346	Liquid	Gallon	4	Hazardous Materials Optisperse ADJ0346	
Sodium Ion (100 ppb)	Liquid	Gallons (5)	1	Sodium Ion (100 ppb)	
Ammonium Hydroxide	Liquid	Quart	1	Ammonium Hydroxide	

					
Di-Isoprolyamine	Liquid	Gallon	1	Di-Isoprolyamine	
Betzdearborn DCL 30	Liquid	Gallons (330)	2	Betzdearborn DCL 30	

Ferric Sulphate Solution	Liquid	Gallons (330)	1	Ferric Sulphate Solution	
Inhipitor AZ8104	Liquid	Gallons (330)	1	Inhipitor AZ8104	
Depsitrol SF 51500	Liquid	Gallons (330)	1	Depsitrol SF 51500	
Burnt Hazardous Waste	Solid	Gallons (55)	18	Burnt Hazardous Waste Drums 1-18	
<u>Outside of Warehouse</u>					
Contaminated Soil - Non PCB	Solid	Gallons (55)	20		
*additional empty totes	Solid	Gallons (330)	16		

* oily rag from Rockfort	Solid	Gallons (55)	40		
*Non PCB waste dirt	Solid	Gallons (55)	40		
Other					

Solar Batteries	Solid		62		
Used PCB Test kits	Solid				

18 Green drums (55-USG) of fire damaged fiberglass cross arms and insulators

List of SDS

SAFETY DATA SHEET – NMS#300
Aer-O-Lite TMC6 3%
Aqueous Film Forming Foam

1. IDENTIFICATION

Product Name	Aer-O-Lite TMC6 3% Aqueous Film Forming Foam
Recommended use of the chemical and restrictions on use	
Identified uses	Firefighting Foam Concentrate
Restrictions on Use	See Section 15
Company Identification	National Foam 350 East Union Street West Chester, PA 19382
Customer Information Number	(610) 363-1400
Emergency Telephone Number	Infotrac at (800) 535-5053
Issue Date	November 2, 2016
Supersedes Date	November 20, 2015

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARD IDENTIFICATION

Hazard Classification
Eye Damage/Irritation – Category 2A

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Causes serious eye irritation.

Precautionary Statements

Prevention
Wash hands thoroughly after handling.
Wear eye protection and face protection.
Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Storage
None
Disposal
None

Other Hazards
None identified.

2. HAZARD IDENTIFICATION

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	<10%
Acute dermal toxicity	<10%
Acute inhalation toxicity	30 - 40%
Acute aquatic toxicity	30 - 40%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS Number	Concentration
Water	7732-18-5	65 - 75%
Propylene glycol	57-55-6	10 - 20%
Dipropylene Glycol Monomethyl Ether	34590-94-8	1 - <5%
Surfactants	Proprietary	1 - <5%
Synthetic detergent	Proprietary	1 - <5%
Fluoroalkyl surfactants	Proprietary	1 - <5%

4. FIRST- AID MEASURES

Description of necessary first-aid measures
Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
Skin
Wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.
Ingestion
Dilute by drinking large quantities of water and obtain medical attention.
Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Most important symptoms/effects, acute and delayed
Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed
Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved.

Specific hazards arising from the chemical
None known

5. FIRE - FIGHTING MEASURES

Special Protective Actions for Fire-Fighters
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact.

Environmental Precautions
Prevent foam concentrate or foam solution from entering ground water, surface water, or storm drains. Discharge and disposal of concentrate or foam solution should be made in accordance with federal, state, and local regulations.

Methods and materials for containment and cleaning up
Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Wear appropriate protective clothing. Prevent skin and eye contact.

Conditions for safe storage
Store in original containers between 35°F and 120°F (2°C and 49°C). Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Dipropylene Glycol Monomethyl Ether
ACGIH: TLV 100 ppm, 8hr; 15 min STEL 150 ppm; Skin Designation: air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.
OSHA Z-1 PEL: 100 ppm (600 mg/m3) Limit applies to skin.

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures
Respiratory Protection
Wear respiratory protection if there is a risk of exposure to high vapor concentrations, aerosols or if applied to hot surfaces. A NIOSH approved full face respirator may be worn. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin Protection
Gloves
Eye/Face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Liquid
Color	Straw yellow
Odor	Mild, pleasant
Odor Threshold	No data available
pH	8.0
Specific Gravity	1.03
Boiling Range/Point (°C/F)	No data available
Melting Point (°C/F)	No data available
Flash Point (°C/F)	>200°F
Vapor Pressure	No data available
Evaporation Rate (BuAc=1)	No data available
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
VOC (%)	No data available
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	No data available
Upper explosive limit	Not applicable
Lower explosive limit	Not applicable
Flammability (solid, gas)	Not applicable

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Contact with incompatible materials

Incompatible Materials
Water reactive materials – burning metals – electronically energized equipment

10. STABILITY AND REACTIVITY

Hazardous Decomposition Products
Oxides of carbon – hydrogen fluoride – aldehydes – ketones – organic acids

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Product
Oral LD50 (rat) >5000mg/kg (tested on a similar product)
Synthetic Detergent
Oral LD50 (rat) >5000mg/kg
Dipropylene Glycol Monomethyl Ether
Oral LD50 (rat) >5000 mg/kg
Dermal LD5 (rabbit) >9510 mg/kg
Inhalation LC50 (rat) > 3.35 mg/l,7h, vapour, no deaths occurred at this concentration

Specific Target Organ Toxicity (STOT) – single exposure
Available data indicates this product is not expected to cause target organ effects after a single exposure.

Specific Target Organ Toxicity (STOT) – repeat exposure
Available data indicates this component not expected to cause target organ effects after repeated exposure.

Serious Eye damage/Irritation
Product: Primary irritant (rabbit) (tested on a similar product)
Surfactants: Cause severe eye damage (>20%)
Synthetic Detergent: Severely irritating (rabbit) (50% solution)

Skin Corrosion/Irritation
Product: Not a primary irritant (rabbit) (tested on a similar product)

Respiratory or Skin Sensitization
Available data indicates this product is not expected to cause skin sensitization.

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity
Available data indicates this product is is not expected to be mutagenic.

Reproductive Toxicity
Available data indicates this product is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No relevant studies identified.

12. ECOLOGICAL INFORMATION

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
This product, as sold, is not a RCRA-listed waste or hazardous waste as characterized by 40 CFR 261. However, state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of waste foam concentrate or foam/foam solution.
Concentrate
Prevent foam concentrate from entering ground water, surface water or storm drains. Small quantities of foam concentrate may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is recommended.
Foam/Foam Solution
Prevent foam/foam solution from entering ground water, surface water or storm drains. Small quantities of foam solution may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations, high temperature incineration is recommended.
NOTE: Please consult National Foam for additional information regarding the disposal of foam concentrates and foam solutions.

14. TRANSPORT INFORMATION

Shipping Information

Shipping Description	Fire Extinguisher Charges or Compounds N.O.I., Class 70
National Motor Freight Code	69160 Sub 0

This information is not intended to convey all transportation classifications that may apply to this product. Classifications may vary by container volume and by regional regulations. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules when transporting this material.

15. REGULATORY INFORMATION

United States TSCA Inventory
This product contains an ingredient that has restricted use under the EPA Toxic Substance Control Act This product may only be used as a firefighting foam. Release to water is only allowed during firefighting, testing of firefighting systems or during quality control/assurance activities. Any other use of this product is strictly prohibited.

15. REGULATORY INFORMATION

Canada DSL Inventory
All ingredients in this product have not been verified for listing on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

SARA Title III Sect. 311/312 Categorization
Immediate (Acute) Health Hazard

SARA Title III Sect. 313
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
None

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 0
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

Legend
ACGIH: American Conference of Governmental Industrial Hygienists
BOD_5:Biochemical Oxygen Demand (5 day)
CAS#: Chemical Abstracts Service Number
COD: Chemical Oxygen Demand
EC50: Effect Concentration 50%
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
STEL: Short Term Exposure Limit
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

Revision Date: November 2, 2016
Replaces: November 20, 2015
Changes made: Changes to Section 6 and 13.

Information Source and References
This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

16. OTHER INFORMATION

Prepared By: EnviroNet LLC.

Aer-O-Lite is a registered trademark of Angus International.

The information and recommendations presented in this SDS are based on sources believed to be accurate. National Foam assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.

Manufacturer's Material Safety Data Sheet

ALUMINIUM SULFATE LIQUID (COOGEE CHEMICALS)

Ingredient	Conc.	CAS No.
WATER	50%	7732-18-5
ALUMINIUM SULFATE	50%	10043-01-3

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA

Synonyms ALUM, ALUMINIUM SULPHATE (LIQUID).

Appearance COLOURLESS LIQUID
Odour ODOURLESS
Use(s) LABORATORY REAGENT, WATER TREATMENT, FOOD ADDITIVE, LABORATORY APPLICATIONS, SEWAG
Supplier COOGEE CHEMICALS PTY LTD Ph: (08) 9439 8205
Stock No. , .

Poison Sched None Allocated **Hazchem** None Allocated **UN No.** None Allocated **D.G Class** None Allocated
Pkg Group None Allocated **EPG** None Allocated **Sub/Tert Risk** None Allocated

HEALTH HAZARDS

Health Hazard Summary Slightly corrosive. This product has the potential to cause adverse health effects with eye contact or prolonged skin contact. Aluminium sulfate hydrolyses to form sulfuric acid. Due to the low vapour pressure of this product an inhalation hazard is not anticipated with normal use. Use safe work practices to avoid direct eye or skin contact and vapour/ mist generation-inhalation.

Eye Corrosive - severe irritant. Exposure may result in pain, redness, corneal burns and ulceration with possible permanent damage with prolonged contact.

Inhalation Slightly corrosive - irritant. Over exposure at high levels may result in mucous membrane irritation of the nose and throat with coughing. Due to the low vapour pressure of this product an inhalation hazard is not anticipated.

Skin Slightly corrosive. Prolonged contact may result in irritation, skin rash, dermatitis, ulceration and burns.

Ingestion Slightly corrosive. Ingestion may result in ulceration to the mouth and throat with nausea and vomiting.

PRECAUTIONS

Flammability Non flammable. May evolve toxic aluminium/sulfur oxides when heated to decomposition.

Reactivity Incompatible with alkalis (eg. sodium hydroxide) and may be corrosive to most metals.

Ventilation Do not inhale vapours. Use in well ventilated areas. In poorly ventilated areas, mechanical extraction ventilation is recommended.

PERSONAL PROTECTIVE EQUIPMENT

PPE Wear splash-proof goggles, coveralls and PVC or rubber gloves. When using large quantities or where heavy contamination is likely, wear a PVC apron and rubber boots. Where an inhalation risk exists, wear a Type B (Inorganic and Acid gas) Respirator or an Air-line respirator.

AMBER

ALUMINIUM SULFATE LIQUID (COOGEE CHEMICALS)

FIRST AID

Eye Flush gently with running water, holding eyelids open for 20 minute period. Seek immediate medical attention.

Inhalation Leave area of exposure immediately. If symptoms occur, seek urgent medical attention. If assisting a victim avoid becoming a casualty, wear a Full-face Type B (Inorganic and acid gas) respirator or Air-line respirator (in poorly ventilated areas). If victim is not breathing apply artificial respiration.

Skin Remove contaminated clothing and gently flush affected areas with water. Seek medical attention if irritation develops. Launder clothing before reuse.

Ingestion If poisoning occurs, contact a Doctor or Poisons Information Centre on 13 11 26 (Australia Wide). Do not induce vomiting. Give a glass of water to drink. Seek urgent medical attention.

SAFE HANDLING

Storage Store in secured, cool, dry, well ventilated area, removed from alkalis (eg. sodium hydroxide), most metals and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate fire prevention and ventilation systems.

Waste Disposal Wearing the protective equipment detailed above, neutralise to pH 6-8 by SLOW addition to a saturated sodium bicarbonate solution or similar basic solution. Dilute with excess water and flush to drain. Waste disposal should only be undertaken in a well ventilated area or using a fume cupboard. Do not add water to unreacted acidic products.

Transport Not regulated for transport purposes.

EMERGENCY

Spillage For liquid spills: contact emergency services. Clear area of unprotected personnel. Ventilate area where possible. Wear PVC gloves, a Full-face Type B (Inorganic and acid gas) respirator or Air-line respirator, full-length PVC coveralls & boots. Cover with sodium bicarbonate or 50-50 mixture of sodium carbonate & calcium hydroxide. Collect for complete neutralisation & appropriate disposal.

Fire and Explosion Non flammable. If product is present in a fire, toxic gases may be evolved. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

Extinguishing Non flammable. Prevent contamination of drains or waterways, absorb runoff with sand or similar.

PHYSICAL AND CHEMICAL PROPERTIES

Flammability: NON FLAMMABLE
Boiling Point: NOT AVAILABLE
Exposure Standard (TWA): 2 mg/m3 Aluminium dust
pH: NOT AVAILABLE
Specific Gravity: 1.3
Vapour Pressure: NOT AVAILABLE
Lower Explosion Limit: NOT RELEVANT

Flash Point: NOT RELEVANT
Melting Point: NOT RELEVANT
Evaporation Rate: NOT AVAILABLE
% Volatiles: NOT AVAILABLE
Solubility: SOLUBLE
Upper Explosion Limit: NOT RELEVANT

Printed by : RMT

ADDITIONAL INFORMATION cont.

HEALTH HAZARDS - TOXICITY DATA
LD50 (Intraperitoneal) : 274 mg/kg (mouse)

ADDITIONAL SAFE HANDLING INFORMATION

Aluminium Sulfate solutions should be stored in stainless steel tanks of grade 316 L or higher, steel lined or urethane coated or plastic tanks. Steel or galvanised steel are not suitable for storage.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

COLOUR RATING SYSTEM: Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

ACIDS: When mixing acids with water (diluting), caution must be taken as heat will be generated which causes violent spattering. Always add a small volume of acid to a large volume of water, NEVER the reverse.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. Information provided by Risk Management Technologies is summarised for ease of use. Additional technical information is available by calling (08) 9322 1711.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

TRANSPORT INFORMATION:
Where a United Nations Number (UN No) is present on the Chem Alert report, the product is classified as a Dangerous Good by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road or Rail.

If no UN Number, Dangerous Goods Class or Hazchem Code has been allocated, then the Chem Alert report will state 'none allocated' in accordance with NOHSC:2011(1994)].

STATUS OF CHEM ALERT REPORTS

Chem Alert reports are compiled as an independent source of information by RMT's scientific department, based on the latest chemical and toxicological research and, where appropriate, in compliance with relevant standards, guidance notes and legislation. Unless otherwise stated, RMT takes full responsibility for the information in the Chem Alert reports. Where available the manufacturer's original MSDS is also provided to Chem Alert subscribers as a scanned image for their convenience. In many instances Chem Alert reports are compiled on behalf of manufacturers in which case they serve as the "Manufacturer's MSDS" and are clearly

ADDITIONAL INFORMATION cont.

identifed as such on the relevant reports.

ADDITIONAL PRODUCT INFORMATION
PRECAUTIONS - FLAMMABILITY
May also evolve toxic aluminium oxides when heated to decomposition.
PRECAUTIONS - VENTILATION
Maintain dust levels below the recommended exposure standard (TLV/TWA).

Last Reviewed : 24th September 2002
Date Printed : 31st October 2002

END OF REPORT

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 16-JUN-2009
Supercedes: 01-APR-2009

INHIBITOR AZ8104

1 Identification

Identification of substance or preparation
INHIBITOR AZ8104

Product Application Area
Water-based corrosion inhibitor.

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: 16-JUN-2009

2 Hazard(s) identification

****
EMERGENCY OVERVIEW

WARNING

May cause moderate irritation to the skin. Severe irritant to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard: Corrosive to aluminum
Odor: Slight; Appearance: Yellow To Amber, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water
****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause moderate irritation to the skin.

ACUTE EYE EFFECTS:
Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:
May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

TARGET ORGANS:
Prolonged or repeated exposures may cause primary irritant dermatitis.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
Causes irritation of the skin, eyes, and/or respiratory system.

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:

Cas#	Chemical Name	Range(w/w%)
202420-04-0	CHLOROTOLYLTRIAZOLE SODIUM SALT Potential irritant	10-20
NOT ASSIGNED	DICHLOROTOLYLTRIAZOLE Potential irritant	3-7
64665-57-2	BENZOTRIAZOLE,METHYL,SODIUM SALT (SODIUM TOLYLTRIAZOLE),(TTA) Corrosive (eyes and skin); toxic (by ingestion)	1-5
1310-73-2	SODIUM HYDROXIDE Corrosive; toxic (by ingestion)	1-5

4 First-aid measures

SKIN CONTACT:
Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. 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 immediate medical attention.

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, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

oxides of carbon and nitrogen, hydrogen chloride

FLASH POINT:

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

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

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:

Alkaline. Do not mix with acidic material.

STORAGE:

Keep containers closed when not in use. Store in cool ventilated location. Store away from oxidizers.

8 Exposure controls / personal protection

EXPOSURE LIMITS

CHEMICAL NAME

CHLOROTOLYLTRIAZOLE SODIUM SALT
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

DICHLOROTOLYLTRIAZOLE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

BENZOTRIAZOLE,METHYL,SODIUM SALT (SODIUM TOLYLTRIAZOLE),(TTA)
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

SODIUM HYDROXIDE

PEL (OSHA): 2 MG/M3
TLV (ACGIH): TWA (Ceiling) = MG/M3

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.

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:
viton gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles

9 Physical and chemical properties

Specific Grav.(70F,21C)	1.132	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	12	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-11		
Viscosity(cps 70F,21C)	13	% Solubility (water)	100.0

Odor		Slight
Appearance		Yellow To Amber
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		12.7
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		0.0

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:
Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:
Contact with strong acids may cause a violent reaction releasing heat.

INCOMPATIBILITIES:
May react with acids or strong oxidizers.

DECOMPOSITION PRODUCTS:
oxides of carbon and nitrogen, hydrogen chloride

11 Toxicological information

Oral LD50 RAT: 2,550 mg/kg
NOTE - Value is for tested material 1.6 times more concentrated
28 Day Oral RAT:

NOTE - NOEL: 1,000 mg/kg/day
Dermal LD50 RAT: >8,000 mg/kg
NOTE - Value is for tested material 1.6 times more concentrated
Skin Irritation Score RABBIT: CORROSIVE
NOTE - Value is for tested material 1.6 times more concentrated
Eye Irritation Score RABBIT: CORROSIVE
NOTE - Value is for tested material 1.6 times more concentrated
Skin Sensitization G.PIG: NEGATIVE
NOTE - Magnusson & Kligman method
Ames Assay BACTERIA: NEGATIVE
Non-Ames Mutagenicity : WEAK POSIT.
NOTE - In Vitro chromosome aberration test in human lymphocytes
Non-Ames Mutagenicity : NEGATIVE
NOTE - In Vivo Mouse Micronucleus Test

12 Ecological information

AQUATIC TOXICOLOGY

Annelida(Lumbriculus variegatus) 96 Hour Static Acute Bioassay
LC50= 138; No Effect Level= 62.5 mg/L
Benthic Crustacean(Gammerus pseutolimnaeus) 96 Hour Static Acute Bioassay
LC50= 42.1; No Effect Level= 25 mg/L
Bluegill Sunfish 96 Hour Static Acute Bioassay
LC50= 36.6; No Effect Level= 25 mg/L
Ceriodaphnia 48 Hour Static Renewal Bioassay
LC50= 124; No Effect Level= 75 mg/L
Ceriodaphnia 7 Day Chronic Bioassay
Reproduction NOEL= 20; Reproduction LOEC= 40 mg/L
Daphnia magna 21 Day Chronic Bioassay (pH adjusted)
Reproduction EC50= 50; Reproduction NOEL= 27 mg/L
Daphnia magna 48 Hour Static Acute Bioassay (pH adjusted)
EC50= 210; EC0= 155 mg/L
Daphnia magna 48 Hour Static Renewal Bioassay (pH adjusted)
LC50= 217; No Effect Level= 148 mg/L
Fathead Minnow 28 Day Chronic Flow-Thru Bioassay (pH adjusted)
Survival NOEL= 4.2; Survival LOEL= 8.3 mg/L
Fathead Minnow 96 Hour Static Acute Bioassay (pH adjusted)
LC50= 135; No Effect Level= 15 mg/L
Fathead Minnow 96 Hour Static Renewal Bioassay (pH adjusted)
LC50= 50.7; No Effect Level= 21.8 mg/L
Freshwater Snail(Physa sp.) 96 Hour Static Acute Bioassay
LC50= 47.4; No Effect Level= 25 mg/L
Menidia beryllina (Silversides) 96 Hour Static Acute Bioassay
LC50= 41; No Effect Level= 25 mg/L
Midge larvae (Chironomus tentans) 96 Hour Static Acute Bioassay
LC50= 95.8; No Effect Level= 62.5 mg/L
Mysid Shrimp 48 Hour Static Acute Bioassay (pH adjusted)
LC50= 53; No Effect Level= 25 mg/L
Rainbow Trout 96 Hour Static Renewal Bioassay
LC50= 15.4; No Effect Level= 6.3 mg/L
Sheepshead Minnow 96 Hour Static Acute Bioassay (pH adjusted)
LC50= 132; No Effect Level= 100 mg/L

BIODEGRADATION

BOD-28 (mg/g): 15

BOD-5 (mg/g): 15
COD (mg/g): 300
TOC (mg/g): 100

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH).

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:	Corrosive to aluminum
PROPER SHIPPING NAME:	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.(SODIUM HYDROXIDE SOLUTION) 8, UN 3266, PG III

DOT EMERGENCY RESPONSE GUIDE #: 154
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

NSF Registered and/or meets USDA (according to 1998 Guidelines):
Registration number: 141530
Category Code(s):
G5 Cooling and retort water treatment products - all food processing areas
G7 Boiler treatment products - all food processing areas/nonfood contact

SARA SECTION 312 HAZARD CLASS:
Immediate(acute);Delayed(Chronic)

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):
No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

HMIS vII **CODE TRANSLATION**

Health	2	Moderate Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	ALK	pH above 12.0
(1) Protective Equipment	B	Goggles,Gloves

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

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	10-MAY-1996		** NEW **
	16-AUG-1996	12	10-MAY-1996
	25-NOV-1996	2,8	16-AUG-1996
	03-DEC-1996	2,8	25-NOV-1996
	09-OCT-1997	8	03-DEC-1996
	05-NOV-1997		09-OCT-1997
	01-DEC-1997	15	05-NOV-1997
	02-APR-1998	12	01-DEC-1997
	07-AUG-1998	11	02-APR-1998
	17-AUG-1998	2,8	07-AUG-1998
	02-SEP-1998	12	17-AUG-1998
	05-OCT-1998	15	02-SEP-1998
	20-NOV-1998	2	05-OCT-1998
	03-DEC-1998	3,5,7,8,10,14,16	20-NOV-1998
	01-APR-1999	12	03-DEC-1998
	26-MAY-1999	2,8	01-APR-1999
	23-AUG-1999	12	26-MAY-1999
	25-AUG-1999	12	23-AUG-1999
	28-DEC-1999	15	25-AUG-1999
	18-JAN-2002	4	28-DEC-1999
	12-MAY-2003	2	18-JAN-2002
	06-MAY-2004	12	12-MAY-2003
	26-MAY-2006	8	06-MAY-2004
	12-FEB-2007	2,5,8,10	26-MAY-2006
	16-MAY-2007	8	12-FEB-2007
	03-DEC-2008	14	16-MAY-2007
	01-APR-2009	12	03-DEC-2008
	16-JUN-2009	4,10,15	01-APR-2009

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 16-JUN-2006

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

---

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

BETZDEARBORN DCL30

PRODUCT APPLICATION AREA:

DECHLORINATING AGENT

2 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:

CAS#	CHEMICAL NAME
7631-90-5	SODIUM BISULFITE

May be corrosive in aqueous solutions; irritant; sensitizer (skin and respiratory); may generate SO2

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.

3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

WARNING

May cause slight irritation to the skin. Skin sensitizer. Severe irritant to the eyes. May cause irritation to mucous membranes. Repeated exposure may result in respiratory sensitization.

DOT hazard: ORS (when container > RQ)
Emergency Response Guide #31
Odor: Strong; Appearance: Colorless To Light Yellow, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

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

ACUTE EYE EFFECTS:

Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:

May cause irritation to mucous membranes. Repeated exposure may result in respiratory sensitization.

INGESTION EFFECTS:

May cause gastrointestinal irritation. Very large doses may cause diarrhea, depression, colic and death. May also cause severe allergic reactions in sensitive individuals.

TARGET ORGANS:

Prolonged or repeated exposures may cause primary irritant dermatitis, skin sensitization, and/or allergic respiratory reactions.

MEDICAL CONDITIONS AGGRAVATED:

Asthma.

SYMPTOMS OF EXPOSURE:

May cause local irritation or a sensitization reaction upon direct contact with skin or respiratory tract.

4 FIRST AID MEASURES

SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. 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 immediate medical attention.

INHALATION:

Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate 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 3-4 glasses 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, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

> 200F > 93C SETA(CC)

MISCELLANEOUS:

ORS (when container > RQ)

NA3082;Emergency Response Guide #31

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

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 & STORAGE

HANDLING:

Vent carefully before opening. Sulfur dioxide can be formed during the normal use and handling of this product.

STORAGE:

Keep containers closed when not in use. Protect from freezing. If frozen, thaw and mix completely prior to use. Shelf life 180 days.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

CHEMICAL NAME

SODIUM BISULFITE

PEL (OSHA): 5 MG/M3

TLV (ACGIH): 5 MG/M3

ENGINEERING CONTROLS:

Adequate ventilation to maintain air contaminants below exposure limits.

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 a respirator with acid gas cartridges and dust/mist prefilters.

SKIN PROTECTION:

gauntlet-type neoprene gloves, chemical resistant apron--

Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles, face shield

9 PHYSICAL & CHEMICAL PROPERTIES

Specific Grav.(70F,21C)	1.268	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	18	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-8		
Viscosity(cps 70F,21C)	6	% Solubility (water)	100.0

Odor	Strong
Appearance	Colorless To Light Yellow
Physical State	Liquid
Flash Point SETA(CC)	> 200F > 93C
pH As Is (approx.)	4.5
Evaporation Rate (Ether=1)	< 1.00

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: >2,000 mg/kg

NOTE - Estimated value

Dermal LD50 RABBIT: >2,000 mg/kg

NOTE - Estimated value

Skin Irritation Score RABBIT: 0

NOTE - NO ERYTHEMA OR EDEMA WAS OBSERVED IN TEST OF SIMILAR PRODUCT

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Static Renewal Bioassay

LC50= 225; No Effect Level= 160 mg/L

Fathead Minnow 96 Hour Static Renewal Bioassay

LC50= 225; No Effect Level= 160 mg/L

Menidia beryllina (Silversides) 96 Hour Static Acute Bioassay (pH adjusted)

LC50= 930; No Effect Level= 156 mg/L

Mysid Shrimp 48 Hour Static Acute Bioassay (pH adjusted)

LC50= 370; No Effect Level= 156 mg/L

Rainbow Trout 48 Hour Static Screen

100% Mortality= 500; 0% Mortality= 100 mg/L

BIODEGRADATION

Product contains only inorganics that are not subject to typical biological degradation. Assimilation by microbes may occur in waste treatment or the environment.

COD (mg/g): 49

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: ORS (when container > RQ)

UN / NA NUMBER: NA3082

DOT EMERGENCY RESPONSE GUIDE #: 31

15 REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

1,575 gallons due to SODIUM BISULFITE;

FOOD AND DRUG ADMINISTRATION:

The ingredients in this product are Generally Recognized As Safe by FDA, for use in either human or animal food.

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic)

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) CHEMICALS PRESENT:

No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	2	Moderate Hazard

Fire	0	Minimal Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	D	Goggles,Face Shield,Gloves,Apron

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

CHANGE LOG

EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status: 29-SEP-1999		** NEW **
13-JAN-2000	4	29-SEP-1999
09-JUL-2002	12	13-JAN-2000
03-DEC-2003	15	09-JUL-2002
16-JUN-2006	7	03-DEC-2003

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 15-JAN-2002

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

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1 PRODUCT IDENTIFICATION

PRODUCT NAME:

[redacted]

PRODUCT APPLICATION AREA:

WATER-BASED DEPOSIT CONTROL AGENT.

2 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:

CAS#	CHEMICAL NAME
2809-21-4	PHOSPHONIC ACID,(1-HYDROXYETHYLIDINE)BIS- (HEDP) Corrosive (eyes)

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.

3 HAZARDS IDENTIFICATION

****

SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin.

4 FIRST AID MEASURES

SKIN CONTACT:

Remove contaminated clothing. Wash exposed area with a large quantity of soap solution or water for 15 minutes.

EYE CONTACT:

Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.

INHALATION:

Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

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 3-4 glasses 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, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

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

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

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 & STORAGE

HANDLING:

Normal chemical handling.

STORAGE:

Keep containers closed when not in use. Store in cool ventilated location. Store away from oxidizers.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

CHEMICAL NAME

PHOSPHONIC ACID,(1-HYDROXYETHYLIDINE)BIS- (HEDP)

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

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 a respirator with dust/mist filters.

SKIN PROTECTION:

rubber gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Specific Grav.(70F,21C)	1.113	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	28	Vapor Density (air=1)	< 1.00

Freeze Point (C) -2

Viscosity(cps 70F,21C) 18 % Solubility (water) 100.0

Odor Mild

Appearance Yellow

Physical State Liquid

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

pH As Is (approx.) 4.0

Evaporation Rate (Ether=1) < 1.00

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: >2,000 mg/kg

NOTE - Estimated value

Dermal LD50 RABBIT: >2,000 mg/kg

NOTE - Estimated value

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Acute Toxicity (Estimated)

LC50= 930; No Effect Level= 170 mg/L

Fathead Minnow 96 Hour Acute Toxicity (Estimated)

LC50= 1660; No Effect Level= 380 mg/L

BIODEGRADATION

BOD-28 (mg/g): 18

BOD-5 (mg/g): 6

COD (mg/g): 227

TOC (mg/g): 86

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

UN / NA NUMBER: Not applicable

DOT EMERGENCY RESPONSE GUIDE #: Not applicable

15 REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

USDA FEDERALLY INSPECTED MEAT AND POULTRY PLANTS:

This product is composed of ingredients previously approved by USDA to meet G5 and G7 classification and may be used in water for cooking/cooling or in boiler or cooling systems with no food contact.

SARA SECTION 312 HAZARD CLASS:

Immediate(acute)

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) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds

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	B	Goggles,Gloves

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

CHANGE LOG

EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status: 29-JAN-1997		** NEW **
27-OCT-1998	15	29-JAN-1997
15-JAN-2002	15	27-OCT-1998

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. May cause moderate irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable
Emergency Response Guide is not applicable
Odor: Mild; Appearance: Yellow, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

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

ACUTE EYE EFFECTS:

May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:

Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:

May cause slight gastrointestinal irritation.

TARGET ORGANS:

No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 08-JUL-2009
Supercedes: 17-APR-2009

DEPOSITROL SF5100

1 Identification

Identification of substance or preparation
DEPOSITROL SF5100

Product Application Area
Antifoulant.

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: 08-JUL-2009

2 Hazard(s) identification

****
EMERGENCY OVERVIEW

WARNING

May cause moderate irritation to the skin. Absorbed by skin. Severe irritant to the eyes. Vapors, gases, mists and/or aerosols cause irritation to the upper respiratory tract.

DOT hazard: Combustible liquid
Odor: Sweet Alcohol; Appearance: Colorless, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide or foam--Avoid water if possible.
****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause moderate irritation to the skin. Absorbed by skin.

ACUTE EYE EFFECTS:
Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:
Primary route of exposure;Vapors, gases, mists and/or aerosols

cause irritation to the upper respiratory tract.

INGESTION EFFECTS:
May cause gastrointestinal irritation with possible nausea, vomiting, headache, dizziness, unconsciousness and injury to the kidneys and liver.

TARGET ORGANS:
Prolonged or repeated exposures may cause CNS depression and/or toxicity to the liver, kidney, and blood system.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
Inhalation may cause irritation of the respiratory tract. Skin contact may cause itching and/or redness.

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:

Cas#	Chemical Name	Range(w/w%)
577-11-7	SUCCINIC ACID,SULFO-1,4-BIS(2-ETHYLHEXYL)ESTER,SODIUM SALT Irritant	15-40
107-41-5	HEXYLENE GLYCOL (2,4-DIHYDROXY-2-METHYLPENTANE) Irritant	10-20
111-76-2	2-BUTOXYETHANOL (ETHYLENE GLYCOL MONOBUTYL ETHER) Combustible; toxic (by ingestion, skin absorption and inhalation); irritant (eyes); potential toxin to blood, liver, and kidney	3-7
64-17-5	ETHANOL Flammable liquid; irritant (eyes); may cause CNS depression; potential liver, kidney, brain, heart and male reproductive toxin; produced mutagenic effects in germ cells and somatic cells (in vivo)	3-7

4 First-aid measures

SKIN CONTACT:
URGENT! Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.

EYE CONTACT:
Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION:

Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate 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, carbon dioxide or foam--Avoid water if possible.

HAZARDOUS DECOMPOSITION PRODUCTS:

oxides of carbon and sulfur

FLASH POINT:

155F 68C P-M(CC)

MISCELLANEOUS:

Combustible liquid

NA 1993;Emergency Response Guide #128

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Remove ignition sources. Flush area with water. Spread sand/grit.

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:

Combustible. Do not use around sparks or flames. Bond containers during filling or discharge when performed at temperatures at or above the product flash point.

STORAGE:

Keep containers closed when not in use. Protect from freezing. Keep away from flames or sparks.

8 Exposure controls / personal protection

EXPOSURE LIMITS

CHEMICAL NAME

SUCCINIC ACID,SULFO-1,4-BIS(2-ETHYLHEXYL)ESTER,SODIUM SALT

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

HEXYLENE GLYCOL (2,4-DIHYDROXY-2-METHYLPENTANE)
PEL (OSHA): 25 PPM-C
TLV (ACGIH): 25 PPM-C

2-BUTOXYETHANOL (ETHYLENE GLYCOL MONOBUTYL ETHER)
PEL (OSHA): 25 PPM(SKIN)
TLV (ACGIH): 20 PPM

ETHANOL
PEL (OSHA): 1,000 PPM
TLV (ACGIH): TWA = 1,000 PPM; A3

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.

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 organic vapor cartridges and any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.

SKIN PROTECTION:
gauntlet-type nitrile gloves, chemical resistant apron-- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles, face shield

9 Physical and chemical properties

Spec. Grav.(70F,21C)	1.028	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	18	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-8		
Viscosity(cps 70F,21C)	17	% Solubility (water)	100.0

Odor		Sweet Alcohol
Appearance		Colorless
Physical State		Liquid
Flash Point	P-M(CC)	155F 68C
pH As Is (approx.)		~ 6.0
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		33.0

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:
Stable under normal storage conditions.
POSSIBILITY OF HAZARDOUS REACTIONS:
Friction, heat or other sources of ignition may cause a reaction releasing heat and toxic fumes. Contact with oxidizers may cause fire.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
oxides of carbon and sulfur

11 Toxicological information

Oral LD50 RAT:	3,550 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>5,000 mg/kg
NOTE - Estimated value	
Inhalation LC50 RAT:	>2,000 ppm/hr
NOTE - Estimated value	

12 Ecological information

AQUATIC TOXICOLOGY
Daphnia magna 48 Hour Static Acute Bioassay
LC50= 96.9; No Effect Level= 37 mg/L
Fathead Minnow 96 Hour Static Acute Bioassay
LC50= 130; No Effect Level= 75 mg/L

BIODEGRADATION
BOD-28 (mg/g): 143
BOD-5 (mg/g): 59
COD (mg/g): 1145
TOC (mg/g): 297

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:	Combustible liquid
PROPER SHIPPING NAME:	COMBUSTIBLE LIQUID, N.O.S.(GLYCOL ETHER) NA 1993, PG III
DOT EMERGENCY RESPONSE GUIDE #:	128

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 176.210 (defoaming agents used in the manufacture of paper and paperboard)
When used in this specified application, 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).

NSF Registered and/or meets USDA (according to 1998 Guidelines):

Registration number: Not Registered
This product contains ingredients that have been determined as safe for use in systems for cooking or cooling containers of meat and/or poultry and in systems with no food contact. (G5, G7)

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic);Fire

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

CAS#	CHEMICAL NAME	RANGE
	GLYCOL ETHERS	2.0-5.0%

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):

No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

HMIS vII		**CODE TRANSLATION**
Health	2	Moderate Hazard
Fire	2	Moderate Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	D	Goggles,Face Shield,Gloves,Apron

(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 **
	12-NOV-1998	15	28-JAN-1997
	06-SEP-2002	4	12-NOV-1998
	10-SEP-2002	8	06-SEP-2002
	05-APR-2007	2	10-SEP-2002
	17-APR-2009	5,8,10	05-APR-2007
	08-JUL-2009	8	17-APR-2009

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 24-JUN-2009
Supercedes: 28-MAR-2005

DIANODIC DN2478

1 Identification

Identification of substance or preparation
DIANODIC DN2478

Product Application Area
Water-based corrosion inhibitor.

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: 24-JUN-2009

2 Hazard(s) identification

****
EMERGENCY OVERVIEW

WARNING

May cause slight irritation to the skin. Severe irritant to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard: Corrosive to aluminum, RQ
Odor: Mild; Appearance: Amber To Brown, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water
****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:
Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:
May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

TARGET ORGANS:
No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
May cause redness or itching of skin, irritation, and/or tearing of eyes (direct contact).

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:

Cas#	Chemical Name	Range(w/w%)
7778-53-2	PHOSPHORIC ACID, TRIPOTASSIUM SALT Severe irritant (eyes); irritant (skin)	7-13
1310-58-3	POTASSIUM HYDROXIDE Corrosive; toxic (by ingestion)	5-10
202420-04-0	CHLOROTOLYLTRIAZOLE SODIUM SALT Potential irritant	1-5

4 First-aid measures

SKIN CONTACT:
Wash thoroughly with soap and water. Get medical attention if irritation develops or persists.

EYE CONTACT:
URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

INHALATION:
Remove victim from contaminated area to fresh air. Apply appropriate first aid treatment as necessary.

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, carbon dioxide, foam or water
HAZARDOUS DECOMPOSITION PRODUCTS:
oxides of carbon
FLASH POINT:
> 200F > 93C P-M(CC)
MISCELLANEOUS:
Corrosive to aluminum, RQ
UN 3266;Emergency Response Guide #154

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.
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:
Alkaline. Do not mix with acidic material.
STORAGE:
Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

8 Exposure controls / personal protection

EXPOSURE LIMITS
CHEMICAL NAME

PHOSPHORIC ACID, TRIPOTASSIUM SALT
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

POTASSIUM HYDROXIDE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): TWA (Ceiling) = 2 MG/M3

CHLOROTOLYLTRIAZOLE SODIUM SALT
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.
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:

neoprene gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

9 Physical and chemical properties

Spec. Grav.(70F,21C)	1.392	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	-- 11	Vapor Density (air=1)	< 1.00
Freeze Point (C)	- -12		
Viscosity(cps 70F,21C)	18	% Solubility (water)	100.0

Odor		Mild
Appearance		Amber To Brown
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		14.4
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		0.0

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:

Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:

Contact with strong acids may cause a violent reaction releasing heat.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

oxides of carbon

11 Toxicological information

Oral LD50 RAT:	>2,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	

12 Ecological information

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Acute Toxicity (Estimated)
LC50= 910; No Effect Level= 520 mg/L
Fathead Minnow 96 Hour Acute Toxicity (Estimated)
LC50= 360; No Effect Level= 140 mg/L

BIODEGRADATION

BOD-28 (mg/g): 21
BOD-5 (mg/g): 12
COD (mg/g): 160
TOC (mg/g): 60

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH).

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:	Corrosive to aluminum, RQ
PROPER SHIPPING NAME:	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.(POTASSIUM HYDROXIDE SOLUTION) 8, UN 3266 PG III RQ

DOT EMERGENCY RESPONSE GUIDE #: 154
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):

1,232 gallons due to POTASSIUM HYDROXIDE;

NSF Registered and/or meets USDA (according to 1998 Guidelines):

Registration number: 141030
Category Code(s):
G5 Cooling and retort water treatment products - all food processing areas
G7 Boiler treatment products - all food processing areas/nonfood contact

SARA SECTION 312 HAZARD CLASS:

Immediate(acute)

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):
No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

HMIS vII		CODE TRANSLATION
Health	2	Moderate Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	ALK	pH above 12.0
(1) Protective Equipment	B	Goggles,Gloves

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

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	21-JAN-1999		** NEW **
	16-MAR-1999	12	21-JAN-1999
	28-MAR-2005	2	16-MAR-1999
	24-JUN-2009	4,8,10,15	28-MAR-2005

KEMIRON COMPANIES INC

MATERIAL SAFETY DATA SHEET

Ferric Sulfate Solution

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SALES OFFICE
3211 Clinton Parkway Court
Lawrence, KS 66047
800-879-6353

Product Name: Ferric Sulfate Solution
CAS#: 10028-22-5
MSDS Code: FeSO4
Product Use: Water treatment chemical

Major Update: 01/05/99
Minor Revision: 11/24/99

Emergency Contacts (24 hr.)

FOR EMERGENCIES INVOLVING CHEMICAL SPILL OR RELEASE, CALL

CHEMTREC 1-800-424-9300

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient	% (w/w)	ACGIH TWA	CAS NO.
Ferric Sulfate	31 – 46	1 mg/m^3 (as Fe) (Iron salts, soluble)	10028-22-5

SECTION 3 – HAZARD IDENTIFICATION

****

Emergency Overview: TOXIC! Corrosive and irritating to eyes, skin, respiratory tract and mucous membranes. Harmful or fatal if swallowed. Read the entire MSDS for a more thorough evaluation of the hazards.

****

Potential Health Effects:

Inhalation: Irritation to mucous membranes

Skin Contact: May cause burns.

Eye Contact: May cause burns.

Ingestion: Severe gastritis with abdominal pain, and vomiting beginning 10-60 min after ingestion. Diarrhea, and dehydration. Shock, pallor, cyanosis and coldness. Rapid, weak pulse, low blood pressure, Drowsiness, hyporeflexia, dilated pupils, coma.

Chronic Effects: No chronic effects expected.

Carcinogenicity: Ferric sulfate is not classified as carcinogenic by ACGIH (American Conference of Governmental Industrial Hygienists) or IARC (International Agency for Research on Cancer), not regulated as carcinogens by OSHA (Occupational Safety and Health Administration), and not listed as carcinogens by NTP (National Toxicology Program).

SECTION 4 – FIRST AID MEASURES

General: If you feel unwell seek medical advice (show the label where possible).

Inhalation: If symptoms are experienced, move victim to fresh air. Give artificial respiration ONLY if breathing has stopped. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention IMMEDIATELY.

Skin Contact: Remove contaminated clothing, jewelry, and shoes. Immediately wash skin with soap or mild detergent and running water for at least 15 - 20 minutes until no evidence of chemical remains. If irritation persists obtain medical attention.

Eye Contact: Immediately flush eyes with running water for at least 20 minutes, occasionally lifting upper and lower lids, until no evidence of chemical remains. If irritation persists obtain medical attention.

Ingestion: If swallowed, contact local poison control center or physician immediately. Never give anything by mouth to an unconscious person. Give large quantities of water or milk. If vomiting occurs, keep head lower than hips to help prevent aspiration. Loosen tight clothing such as a collar, tie, belt or waistband. Seek immediate medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen. Perform lavage or emesis after ingestion, followed by administration of standard bicarbonate solution (1 ml (mEq/ml)/kg).

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point:	Not applicable.
Flammable Limits (Lower):	Not applicable.
Flammable Limits (Upper):	Not applicable.
Auto Ignition Temperature:	Not applicable
Combustion and Thermal Decomposition Products:	Ferric Sulfate: Toxic fumes of iron and sulfur oxides.
Rate of Burning:	Not applicable
Explosive Power:	Not applicable
Sensitivity to Mechanical Impact:	Not applicable
Sensitivity to Static Discharge:	Not available.

Fire and Explosion Hazards: Material itself does not burn or burns with difficulty. When heated to decomposition, it emits sulfur, carbon and nitrogen oxides, and toxic fumes of iron and hydrogen chloride gas.

Extinguishing Media: Water spray, fog, or regular foam appropriate for surrounding material. Cool any exposed containers with water.

Special Information: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode. Move exposed containers from fire area if it can be done without risk. Cool any exposed containers with water.

Evacuation: If tank, rail car or tank truck involved in a fire, ISOLATE and consider evacuation of one-half (1/2) mile radius.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills, Leaks, or Releases:

- Restrict access to area until completion of clean up. Ensure trained personnel conduct clean up. Wear adequate personal protective equipment. Do not touch spilled material.
- Stop leak if possible without personal risk.
- Small spills: Absorb spill with sand or non-combustible dry material and collect in appropriate container for disposal. Flush area with water.
- Large spills: Prevent entry into sewers and confined areas. Dike if possible. Keep unnecessary people away, isolate hazard area and deny entry. Absorb spill with sand or non-combustible dry material and collect in appropriate container for disposal. Flush area with water.

SECTION 7 – HANDLING AND STORAGE

Handling: Observe all warnings and precautions listed for the product. Wear rubber gloves, safety glasses, and protective work clothing.

Storage Requirements: Store in corrosion-resistant tanks or the supplier container. Keep containers tightly closed. Protect from damage. Keep dry and protected from light. Read the label before use.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

PREVENTIVE MEASURES

Recommendations listed in this section indicate the type of equipment, which will provide protection against over exposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

Engineering Controls: A ventilation system of local and/or general exhaust is recommended. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Ensure that eyewash station and safety showers are proximal to the workstation location.

PERSONAL PROTECTIVE EQUIPMENT

Eye Protection: Wear splash resistant chemical goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Recommended Protective Material: Neoprene, rubber or PVC

Respiratory Protection: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. An NIOSH/MSHA-approved air-purifying respirator equipped with acid mist cartridges up to ten times the TLV may be used. For Unknown or high concentrations, use any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode.

EXPOSURE GUIDELINES

PRODUCT ACGIH: TLV - 1 mg/m^3 (as Fe) (Iron salts, soluble)

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Alternate Name(s):	Iron (III) sulfate, Ferric Sulphate Solution
Chemical Name:	Ferric Sulfate
Chemical Family:	Iron salt
Molecular Formula:	$Fe_2(SO_4)_3$ *
Molecular Weight:	399.88
Appearance:	Dark liquid
Odor:	Odorless
pH:	< 1
Vapor Pressure (mm Hg at 20□C):	Not available
Vapor Density (Air=1):	Not applicable
Boiling Point:	104 -107°C (219-225 °F)
Freezing Point:	-20 to -30°C (-4 to -18°F)
Solubility (Water):	soluble
Solubility (Other):	absolute alcohol
Specific Gravity:	1.38 – 1.59

Evaporation Rate:	Not applicable.
% Volatile by Volume:	Not applicable
% Volatile Organic Compounds:	Not applicable

- **-See Technical Bulletin for more information**

SECTION 10 – STABILITY AND REACTIVITY

Hazardous Decomposition Products: Thermal decomposition: Oxides of iron and sulfur. Under fire conditions carbon dioxide, carbon monoxide and oxides of nitrogen (NOx) may be released.

Chemical Stability: Stable at normal temperatures and pressure.

Conditions to Avoid: Heat, flames, sparks and other sources of ignition.

Incompatibility with other Substances: Corrosive to copper, copper alloys, mild steel and galvanized steel. Avoid contact with strong oxidizing agents.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicological Data: Ferric Sulfate: LD_{50} (intraperitoneal mouse): 168 mg/kg

Mutagenicity: Other mutation test systems: Escherichia coli - 250 nmol/tube

Reproductive Effects: Not available

Teratogenicity and Fetotoxicity: Not available

Synergistic Materials: Not available.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available

Persistence and Degradation: No data available

SECTION 13 – DISPOSAL CONSIDERATIONS

Review federal, state and local government requirements prior to disposal.

Whatever cannot be saved for recovery or recycling, including containers should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options.

RCRA: Test waste material for corrosivity, D002, prior to disposal.

SECTION 14 – TRANSPORT INFORMATION

	TDG	DOT
Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s.	Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class/Division	8: Corrosive Liquid	8: Corrosive Liquid
Identification No.	UN3264	UN3264
Packing Group:	II	II

TDG Regulated Limit – Schedule II: 50 kg

Transportation Emergency Telephone Number: 1-800-424-9300 CHEMTREC

IATA/ICAO Class: Not applicable

SECTION 15 – REGULATORY INFORMATION

USA CLASSIFICATION:

OSHA Classification: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

Clean Water Act Requirements: Designated as a hazardous substance under section 311 of the Clean Water Act. These regulations apply to discharges of this substance in navigable waters. The Reportable Quantity (RQ) for notification is 1,000 lb/454 kg.

TSCA Inventory Status: Y

SARA Regulations sections 313 and 40 CFR 372: N

SARA Hazard Categories, SARA SECTIONS 311/312 (40CFR370.21):
ACUTE: Y
CHRONIC: N
FIRE: N
REACTIVE: N
SUDDEN RELEASE: N
OSHA PROCESS SAFETY (29CFR1910.119): N

CERCLA (40 CFR 311): Hazardous substance/reportable quantity (RQ): final RQ = 1000 pounds (454 kg)

Other Regulations/Legislation which apply to this product:
California Proposition 65: N

Right –To-Know: Massachusetts, New Jersey, Pennsylvania
This product does not contain nor is it manufactured with ozone depleting substances.

CANADIAN CLASSIFICATION

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all the information required by the CPR.

CEPA / Canadian Domestic Substances List (DSL): The substances in this product are on the Canadian Domestic Substances List (CEPA DSL).

Controlled Products Regulations (WHMIS) Classification: D2B: Toxic Material
E: Corrosive

EINECS: 233-072-9

SECTION 16 – OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and PIONEER will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years.

Revision Indicators:

Δ In the left margin indicates a revision or addition of information since the previous issue.

National Fire Protection Association (NFPA) Rating
Hazardous Materials Identification System (HMIS) Rating

	NFPA	HMIS
HEALTH	2	2
FIRE	0	0
REACTIVITY	0	0

4 = Extreme/Severe
3 = High/Serious
2 = Moderate
1 = Slight
0 = Minimum

REFERENCES:

1. American Water Works Association, ANSI/AWWA B406.92, "A\
FERRIC SULFATE", Colorado, Oct. 1992.
2. RTECS-Registry of Toxic Effects of Chemical Substances, On-line search, Canadian Centre for Occupational Health and Safety RTECS database, Doris V. Sweet, Ed., National Institute for Occupational Safety and Health, U.S. Dept. of Health and Human Services, Cincinnati, Entry Update/Dec1997.
3. ChemAdvisor, Canadian Centre for Occupational Health and Safety, October 1998.
4. HSDB-Hazardous Substances Data Bank, through "CCINFO disc", Canadian Centre for

Occupational Health and Safety, Hamilton, Ontario, Canada, (August, 1998).

5. NIOSH POCKET GUIDE TO CHEMICAL HAZARDS, U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, June 1997
6. Sax, N.I., "Dangerous Properties of Industrial Materials", 7th Edition, 1989
7. "1998 Threshold Limit Values and Biological Exposure Indices", American Conference of Government Industrial Hygienists, 1998.
8. Merck, 11th Edition, 1989

Legend:

CAS # - Chemical Abstracts Service Registry Number
CERCLA- Comprehensive Environmental Response, Compensation, and Liability Act
CFR - Code of Federal Regulations
DOT - Department of Transportation
EPA - Environmental Protection Agency
LC_{50} - The concentration of material in air expected to kill 50% of a group of test animals
LD_{50} - Lethal Dose expected to kill 50% of a group of test animals
MSHA - Mine Safety and Health Administration
NIOSH - National Institute for Occupational Safety and Health
PEL - Permissible Exposure Limit
PVC - Polyvinyl chloride
RCRA - Resource Conservation and Recovery Act
SARA - Superfund Amendments and Reauthorization Act of the U.S. EPA
STEL - Short Term Exposure Limit
TDG - Transportation of Dangerous Goods Act/Regulations
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act
TWA - Time-Weighted Average

Prepared By: KEMIRON
(912) 234-8605

GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 13-MAR-2012
Supercedes: 10-FEB-2012

GENGARD GN8005

1 Identification

Identification of substance or preparation
GENGARD GN8005

Product Application Area
Corrosion inhibitor

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: 13-MAR-2012

2 Hazard(s) identification

****
EMERGENCY OVERVIEW

DANGER

Corrosive to skin. Potential skin sensitizer. Corrosive to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard: Corrosive to skin
Odor: Slight Ammonia; Appearance: Yellow To Amber, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water
****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; Corrosive to skin. Potential skin sensitizer.

ACUTE EYE EFFECTS:
Corrosive to the eyes.

ACUTE RESPIRATORY EFFECTS:
Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:
May cause slight gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

TARGET ORGANS:
No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:
Not known.

SYMPTOMS OF EXPOSURE:
Inhalation may cause irritation of the respiratory tract. Skin contact may cause itching and/or redness.

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:

Cas#	Chemical Name	Range(w/w%)
1310-73-2	SODIUM HYDROXIDE Corrosive; toxic (by ingestion)	1-5

4 First-aid measures

SKIN CONTACT:
URGENT! Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.

EYE CONTACT:
URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

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, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

oxides of carbon

FLASH POINT:

> 213F > 101C P-M(CC)

MISCELLANEOUS:

Corrosive to skin

UN 3266;Emergency Response Guide #154

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

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:

Normal chemical handling.

STORAGE:

Keep containers closed when not in use. Store in cool ventilated location. Store away from oxidizers.

8 Exposure controls / personal protection

EXPOSURE LIMITS

CHEMICAL NAME

SODIUM HYDROXIDE

PEL (OSHA): 2 MG/M3

TLV (ACGIH): TWA (Ceiling) = 2 MG/M3

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:

gauntlet-type rubber, butyl or neoprene gloves, chemical resistant apron -- Wash off after each use. Replace as

necessary.

EYE PROTECTION:

splash proof chemical goggles, face shield

9 Physical and chemical properties

Spec. Grav.(70F,21C)	1.190	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	~~ 10	Vapor Density (air=1)	< 1.00
Freeze Point (C)	~ -12		
Viscosity(cps 70F,21C)	42	% Solubility (water)	100.0

Odor		Slight Ammonia
Appearance		Yellow To Amber
Physical State		Liquid
Flash Point	P-M(CC)	> 213F > 101C
pH As Is (approx.)		13.4
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		0.0

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:

Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:

Contact with strong acids may cause a violent reaction releasing heat.

INCOMPATIBILITIES:

May react with acids or strong oxidizers.

DECOMPOSITION PRODUCTS:

oxides of carbon

11 Toxicological information

Oral LD50 RAT: 3530 mg/kg

NOTE - Calculated value according to GHS additivity formula

Dermal LD50 RABBIT: >5000 mg/kg

NOTE - Calculated value according to GHS additivity formula

12 Ecological information

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Static Acute Bioassay (Estimated)

LC50= 2700; No Effect Level= 1500 mg/L

Fathead Minnow 96 Hour Static Acute Bioassay (Estimated)

LC50= 3300; No Effect Level= 2600 mg/L

BIODEGRADATION

BOD-28 (mg/g): 14

BOD-5 (mg/g): 4

COD (mg/g): 211

TOC (mg/g): 75

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is : D002=Corrosive(pH).

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

Transportation Hazard: Corrosive to skin
DOT: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.(SODIUM HYDROXIDE SOLUTION)
8, UN3266, PG III, RQ
DOT EMERGENCY RESPONSE GUIDE #: 154
Note: Some containers may be DOT exempt, please check BOL for exact container classification
IATA: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.(SODIUM HYDROXIDE SOLUTION)
8, UN3266, PG III
IMDG: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.(SODIUM HYDROXIDE SOLUTION)
8, UN3266, PG III

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):
4,484 gallons due to SODIUM HYDROXIDE;
NSF Registered and/or meets USDA (according to 1998 Guidelines):
Registration number: Not Registered
SARA SECTION 312 HAZARD CLASS:
Immediate(acute)
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 at trace levels known to the state of California to cause cancer.
MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

HMIS vII		CODE TRANSLATION
Health	3	Serious Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	CORR	DOT corrosive
(1) Protective Equipment	D	Goggles,Face Shield,Gloves,Apron

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

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
MSDS status:	26-APR-2007		** NEW **
	06-JUN-2007	8,15	26-APR-2007
	27-JUL-2007	;EDIT:Rebranding	06-JUN-2007
	01-MAY-2008	12;EDIT:Rebranding	27-JUL-2007
	08-JUN-2009	4,8,10,12	01-MAY-2008
	10-FEB-2010	14	08-JUN-2009
	01-FEB-2011	8	10-FEB-2010
	25-AUG-2011	11	01-FEB-2011
	10-FEB-2012	2,4,5,8,14,16	25-AUG-2011
	13-MAR-2012	3	10-FEB-2012

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 20-MAY-2003

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

---

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

POLYFLOC CE1154

PRODUCT APPLICATION AREA:

FLOCCULANT.

2 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:

CAS#	CHEMICAL NAME
64742-47-8	ISOPARAFFINIC PETROLEUM DISTILLATE Combustible liquid; irritant
84133-50-6	ALCOHOLS,C12-14-SECONDARY,ETHOXYLATED Irritant (eyes)

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.

3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

CAUTION

May cause moderate irritation to the skin. May cause moderate irritation to the eyes. Vapors, gases, mists or aerosols may cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.

DOT hazard is not applicable
Emergency Response Guide is not applicable
Odor: Slight Hydrocarbon; Appearance: White To Off-White, Emulsion

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

****

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

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

ACUTE EYE EFFECTS:

May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:

Primary route of exposure;Vapors, gases, mists or aerosols may cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.

INGESTION EFFECTS:

May cause gastrointestinal irritation with possible nausea, vomiting, diarrhea, mental confusion, dizziness and lethargy. Small amounts aspirated during ingestion or vomiting may cause lung injury, possibly leading to death.

TARGET ORGANS:

Prolonged or repeated exposures may cause defatting-type dermatitis.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

Excessive skin contact may cause defatting or drying of skin. Excessive inhalation of vapors may cause dizziness, headache and nausea.

4 FIRST AID MEASURES

SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. 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 immediate medical attention.

INHALATION:

Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate 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 3-4 glasses milk or water.

NOTES TO PHYSICIANS:

This product contains a hydrocarbon solvent. Aspiration into the lungs will result in chemical pneumonia and may be fatal.

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, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

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

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

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 & STORAGE

HANDLING:

Normal chemical handling.

STORAGE:

Keep containers closed when not in use. Store in cool ventilated location. Store away from oxidizers.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

CHEMICAL NAME

ISOPARAFFINIC PETROLEUM DISTILLATE

PEL (OSHA): 400 PPM

TLV (ACGIH): NOT DETERMINED

ALCOHOLS,C12-14-SECONDARY,ETHOXYLATED

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

ENGINEERING CONTROLS:

Adequate ventilation to maintain air contaminants below exposure limits.

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 a respirator with organic vapor cartridges.

SKIN PROTECTION:

nitrile gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Specific Grav.(70F,21C)	1.036	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	< 23	Vapor Density (air=1)	> 1.00
Freeze Point (C)	< -5		
Viscosity(cps 70F,21C)	1440	% Solubility (water)	ND

Odor	Slight Hydrocarbon
Appearance	White To Off-White
Physical State	Emulsion
Flash Point P-M(CC)	> 200F > 93C
pH 1% Sol. (approx.)	4.8
Evaporation Rate (Ether=1)	< 1.00

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT:	>10,000 mg/kg
Dermal LD50 RABBIT:	>10,000 mg/kg
Inhalation LC50 RAT:	>2,500 ppm/4hr

NOTE - Inhalation rat LC50: >20mg/L Alternate source

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Bluegill Sunfish 96 Hour Static Acute Bioassay

LC50= 2.5 mg/L

Daphnia magna 48 Hour Static Renewal Bioassay

LC50= 2.4; 10% Mortality= .78 mg/L

Fathead Minnow 96 Hour Static Renewal Bioassay

LC50= 2.8; No Effect Level= .7 mg/L

Rainbow Trout 96 Hour Static Acute Bioassay

LC50= .94 mg/L

BIODEGRADATION

No Data Available.

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

UN / NA NUMBER: Not applicable

DOT EMERGENCY RESPONSE GUIDE #: Not applicable

15 REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

FOOD AND DRUG ADMINISTRATION:

21 CFR 176.170 (components of paper and paperboard in contact with aqueous and fatty foods)

USDA FEDERALLY INSPECTED MEAT AND POULTRY PLANTS:

This product contains ingredients that have been determined as safe for use in inedible processing areas and in sewage or drain lines (C1,L1).

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic)

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) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	2	Moderate Hazard
Fire	1	Slight Hazard

Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles,Gloves

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

CHANGE LOG

EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
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MSDS status: 20-MAY-2003 ** NEW

[END OF DOCUMENT]

All other aspects of the RFP remain the same.

Regards

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