

August 22, 2014

Ms. Charlene S. Fitch, P.E.
Chief Engineering Section
Missouri Department of Natural Resources
1738 East Elm Street
Jefferson City, Missouri 65101

**RE: Crack and Void Filling with Flowable Fill
Bridgeton Landfill, Bridgeton, Missouri
Permit No. 0118912**

Dear Ms. Fitch:

In an April 18, 2014 letter, we proposed and provided details regarding the use of flowable fill to repair cracks and minor depressions and voids at the Bridgeton Landfill. After significant research, a specific type of material was identified which will meet the desired performance of the fill material. The material which was identified and proposed with our letter (Type C Fly Ash) is approved and used for pipe abandonment and other flowable fill applications throughout the State of Missouri.

Based on technical review conversations, you have requested Bridgeton Landfill provide additional assurances that the fill will not be prone to leaching metal constituents. Civil & Environmental Consultants, Inc. (CEC) has investigated many potential additives including bentonite, waste lime and clay / shale fines. However, each of these presents difficulty and issues caused by mixing an additional dry product during preparation of the fill and/or affects the fill strength properties. In addition, these products' effectiveness at reducing leachable metals is unknown.

Nalco (the chemical company that is supplying water treatment solutions for the treatment plant at Bridgeton Landfill) has proposed a product that is specifically designed to bind up metals. They evaluated the constituents of the Ameren-Labadi Type C Fly Ash material that will be used in the flowable fill mix, and have recommended a product called Nalmet 1691 (see attached bulletin and MSDS sheets). Nalmet 1691 is commonly used to bind and floc heavy metal constituents. Nalco recommends a dosage rate of approximately 30 ppm which results in 0.5 lbs. per 10 CY of mixed flowable fill (depending on the consistency desired for the particular flowable fill application). Nalmet 1691 is delivered as a liquid, and according to the grout contractor, can be added during the water addition step of the mix process.

The grout contractor has prepared test cylinders of the proposed flowable fill mix both with and without the addition of Nalmet 1691 at 30 ppm to determine if there would be an effect on set or strength of the product. CEC has evaluated the cylinders with visual observation, manual handling, and testing using a pocket penetrometer for unconfined compressive strength. The results demonstrate that the strength is relatively consistent for all cylinders and there appears to be no significant difference in the set strength of the product with, or without Nalmet 1691 after six days of curing. CEC will continue to observe the cylinders, but is confident that the Nalmet 1691 will not adversely affect any of the desired performance criteria for the flowable fill.

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Bridgeton Landfill has several settlement cracks and voids under the EVOH which need expedient attention and would like to begin the flowable fill program as soon as possible. We will provide notice to you when the first application will be performed so that you can observe the process if you desire. Bridgeton Landfill believes this is an effective approach that will minimize cutting and opening the FML cap and minimize odors during future cap maintenance activities. Please let us know if you have any concerns or additional questions so we may proceed with this application. Thank you.

If you have any questions or comments, please contact me at 314-744-8139.

Sincerely,

Bridgeton Landfill, LLC

A handwritten signature in black ink that reads "James A. Getting". The signature is written in a cursive, flowing style.

James A Getting
Environmental Manager

cc: Chris Nagel - MDNR
Aaron Schmidt - MDNR
Laura Yates – SLCDH
Brian Power - BL

ATTACHMENT A

NALMET 1691 PRODUCT DESCRIPTION

NALMET™ 1691

**Nalco Heavy Metals Removal
Technology**



Product Bulletin

PRODUCT DESCRIPTION AND APPLICATION

NALMET 1691 contains metal chelating groups attached to a polymer backbone that makes it very effective in precipitating solubilized heavy metal ions from wastewater. **NALMET 1691** is a proprietary, patented technology (U.S. 8,211,389 B2) of Nalco, an Ecolab Company. Applications include the treatment of wastewater from:

Metal plating or surface finishing	Metal-catalyzed or metal handling processes
Metals leached from incidental corrosion	Incinerator or other scrubber water
Low-level mercury removal from Flue Gas Desulfurization (FGD) wastewater	Groundwater
Cooling water blowdown	Refinery and chemical processing wastewater
Steel mill direct contact cooling	Acidic wastewater
Oily wastewater	

The benefit of using **NALMET 1691** is realized when treating waste streams containing chelated metals, a mixture of metals that cannot be removed at a single pH value, or if the effluent discharge limits for metals are in the low ppb or ppt range.

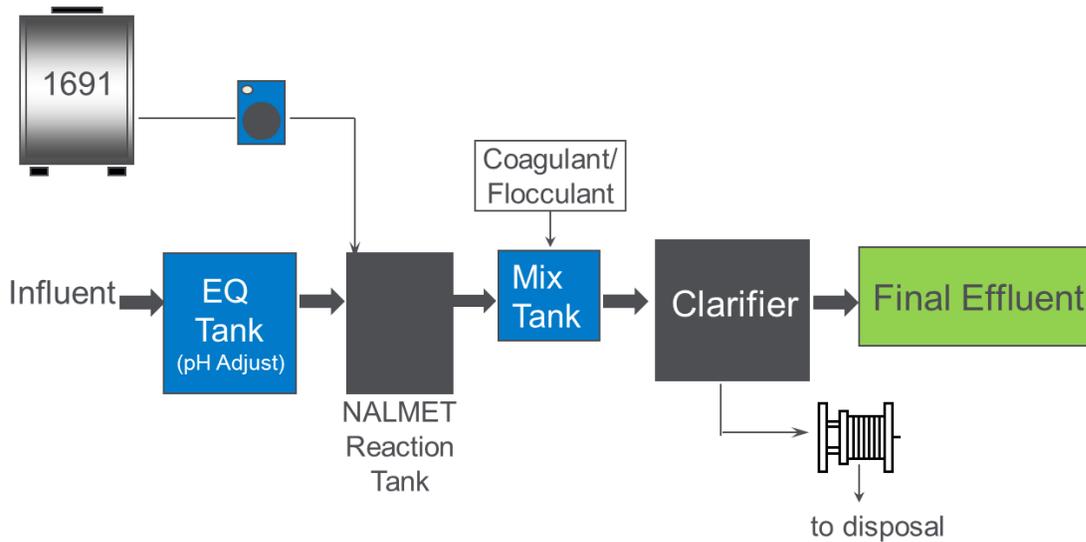
The program consists of a simple one- or two-step process; the addition of **NALMET 1691** and, if needed, a flocculant or a coagulant/flocculant combination to enhance settleable floc formation. Conventional wastewater treatment with **NALMET 1691** requires the formation of settleable floc particles. During the first step, the heavy metal precipitant **NALMET 1691**, reacts with soluble metal ions to form insoluble complexes. Because the precipitant is a polymer, precipitation and flocculation occur simultaneously. In most cases, the use of **NALMET 1691** as a one-step process facilitates the formation of large, easily settled floc.

In cases where very low heavy metals effluent concentrations (ppb or ppt) must be achieved, or if the use of **NALMET 1691** alone exhibits poor solids-liquid separation, the use of a flocculant or coagulant/flocculant combination may be required. The addition of these chemistries optimizes settleability and aids in eliminating the remaining colloidal particles. If not removed, these particles will elevate metals concentrations in the final effluent. *Residence time and mixing are also important in building floc size.

When a flocculant is needed, anionic products such as NALCLEAR™ 7768 or 7763 are often used and typically dosed between 0.2 to 2 ppm.

In wastewaters with high dispersion or total dissolved solids (TDS), i.e. cooling water blowdown, photographic waste, or FGD chloride purge streams, cationic flocculants such as N9908, CORE SHELL™ 71301 or CORE SHELL™ 71307 work well. Dosage of these flocculants may be as high as 30 ppm. When a coagulant is also needed, organic products such as 8100, 8185, 8190, 2490, 8108 PLUS, 7135, 8105 or 8131, 8130 or 71264 are often used.

A typical two-step **NALMET 1691** application treating wastewater is shown in Figure 1.



PHYSICAL & CHEMICAL PROPERTIES

Refer to the Material Safety Data Sheet (MSDS), SECTION 9, for the most current data.

Form	Liquid
Color	Yellow Orange
Odor	Sulfurous
Specific Gravity @ 77°F (25°C)	1.145 - 1.175
Viscosity	10.3cP (60rpm) and 8.2cP (30rpm) @ 24°C 23.2cP (60 rpm) and 24.6cP (30 rpm) @ 0°C
Density	9.5 – 9.8 lb/gal
Solubility in Water	Complete
pH (100%):	12-13.2
VOC Content	0.00%
Freeze Point	-10°C (14°F)
Freeze/Thaw	Recoverable

ACTIVE CONSTITUENTS

Considered proprietary. Please consult the MSDS for information regarding any hazardous components.

REGULATORY APPROVALS

Please refer to the Material Safety Data Sheet (MSDS), SECTION 15 for the most recent information on approvals.

Regulatory approvals pending in: Australia, Thailand, Japan, and Canada

MATERIALS OF COMPATIBILITY

Compatible	Not Compatible
304SS (not ideal for storage)	Brass
316SS	Coated Steel Drum
Polyethylene	Mild Steel
CPVC	
Polypropylene	
Neoprene	
Hypalon® elastomer	
Buna-N	
Polyurethane	
Viton™ synthetic rubber	
EPDM	
Blue Plastic Drum	
PORTA-FEED® Liner	
Plasite 4300	
Plasite 7122	

DOSAGE AND FEEDING

HYDROLYTIC STABILITY

NALMET 1691 is unstable in water at low pH. Do not operate below pH 4.5 at any point where unreacted product may be present. The rate of decomposition is pH dependent, occurring within seconds in very acidic (pH 2) wastewater but slowly under alkaline conditions. Complete decomposition of 1 ppm of **NALMET 1691** will produce 0.01 ppm of hydrogen sulfide and 0.10 ppm carbon disulfide.

NOTE: Carbon disulfide is a flammable liquid that gives off flammable vapors; the vapors can form explosive mixtures in confined areas over a wide range of vapor/air mixtures: 1.3 to 50% by volume in air at 68°F (20°C). Misuse of **NALMET 1691** in low pH wastewater without proper dosage control and/or ventilation could result in the formation of an explosive gas mixture in the headspace of the treatment vessel.

The metal-**NALMET 1691** precipitate is more stable in water than is the free product, so considerably less decomposition of *reacted* product occurs under acidic conditions. During application of **NALMET 1691** at pH<7, however, some product decomposition may occur simultaneously with metal ion precipitation. Good mixing of **NALMET 1691** with wastewater at the product feed point should decrease this decomposition. Also, **NALMET 1691** overfeed (unreacted product) under acidic conditions will surely decompose and should be avoided. In some cases, ferrous sulfate can be used to scavenge unreacted product and prevent its decomposition

DOSAGE

There are many factors which affect dosage calculations. All are interdependent and must be considered before establishing the most efficient dose.

NALMET 1691 can be fed neat (undiluted) or diluted in-line with fresh water. Product should be fed to the system where rapid mixing and distribution will occur. A positive displacement pump should be used for feeding neat product.

NALMET 1691 is intended for industrial use only. **Do not apply to potable or domestic water systems.**

ENVIRONMENTAL AND TOXICITY DATA

Please refer to the Material Safety Data Sheet, SECTIONS 11 and 12 for the most recent information on this data.

Please refer to the Material Safety Data Sheet, SECTIONS 11 and 12 for the most recent information on this data.

Many plants are now required by regulatory agencies to test effluent for toxicity to aquatic organisms. DTC products have biocidal properties and are considered toxic. **NALMET 1691**, however, is practically non-toxic as defined by the US EPA. Select environmental and toxicity data is given below:

Parameter	NALMET 1691 mg/L
5-day Biological Oxygen Demand (BOD)	1,690
Chemical Oxygen Demand	530,000
Aquatic Toxicity - Salt Water Organisms	
96-hour LC50 for Sheepshead Minnow	1,824
Aquatic Toxicity- Fresh Water Organisms	
96-hour LC50 for Rainbow Trout	211
48-hour LC50 for Daphnia Magna	165

SAFETY AND HANDLING

Refer to the Material Safety Data Sheet (MSDS), SECTIONS 3 and 8, for the most current data.

Warning: Causes eye and skin irritation. Do not get into eyes, on skin or clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if swallowed. In case of skin contact, wash thoroughly with soap and water. Call a physician. If splashed into eyes, flush with water for 15 minutes. Call a physician. Remove and wash contaminated clothing before reuse. If swallowed, promptly drink a large quantity of water. Do not induce vomiting. Call a physician immediately. **Sulfurous Odor:** Use in well-ventilated area or in a fume hood

STORAGE

Refer to the Material Safety Data Sheet (MSDS), SECTION 7, for the most current data. Storing **NALMET 1691** beyond one year is not recommended

REMARKS

If you need assistance or more information on this product, please call your nearest Nalco Representative.

For more news about Nalco Company, visit our website www.nalco.com

For **Medical and Transportation Emergencies** involving Nalco products, please see the Material Safety Data Sheet for the phone number.

ADDITIONAL INFORMATION

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ATTACHMENT B

MSDS SHEET



SAFETY DATA SHEET

PRODUCT

NALMET® 1691

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **NALMET® 1691**

COMPANY IDENTIFICATION :
Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH: 1/1 FLAMMABILITY: 1/1 INSTABILITY: 0/0 OTHER:
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Hazard

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

May cause irritation with prolonged contact.
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear chemical splash goggles. After contact with skin, wash immediately with plenty of water. Use a mild soap if available. May release SO₂ or hydrogen sulfide on contact with acids.
Wear suitable protective clothing.
May evolve oxides of carbon (CO_x) under fire conditions. May evolve oxides of nitrogen (NO_x) and sulfur (SO_x) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :
Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :
May cause irritation with prolonged contact.

SKIN CONTACT :
May cause irritation with prolonged contact.



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INGESTION :

Not a likely route of exposure. There may be irritation to the gastro-intestinal tract with nausea and vomiting.

INHALATION :

Not a likely route of exposure. Repeated or prolonged exposure may irritate the respiratory tract.

HUMAN HEALTH HAZARDS - CHRONIC :

No adverse effects expected other than those mentioned above.

4. FIRST AID MEASURES

EYE CONTACT :

Immediately flush eye with water for at least 15 minutes while holding eyelids open. Get medical attention.

SKIN CONTACT :

Immediately flush with plenty of water for at least 15 minutes. Use a mild soap if available. If symptoms develop, seek medical advice.

INGESTION :

Get medical attention. Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink.

INHALATION :

Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN :

Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : > 200 F/ > 93.3 °C

EXTINGUISHING MEDIA :

This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :

May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) and sulfur (SOx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.



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6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible. Keep people away from and upwind of spill/leak.

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment., Prevent material from entering sewers or waterways., If drains, streams, soil or sewers become contaminated, notify local authority.

7. HANDLING AND STORAGE

HANDLING :

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Do not breathe vapors/gases/dust. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled.

STORAGE CONDITIONS :

Store in suitable labeled containers. Store the containers tightly closed. Store separately from acids. Store separately from oxidizers. The original condition of the product is recovered upon thawing. If product freezes, thaw and mix before using.

SUITABLE CONSTRUCTION MATERIAL :

Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

This product does not contain any substance that has an established exposure limit.

ENGINEERING MEASURES :

Use local exhaust ventilation if necessary to control airborne mist and vapor.

RESPIRATORY PROTECTION :

Where concentrations in air may exceed the limits given in this section or when significant mists, vapors, aerosols, or dusts are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended.



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Consult the respirator / cartridge manufacturer data to verify the suitability of specific devices. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :

When handling this product, the use of chemical gauntlets is recommended. The choice of work glove depends on work conditions and what chemicals are handled. Please contact the PPE manufacturer for advice on what type of glove material may be suitable. Gloves should be replaced immediately if signs of degradation are observed. Breakthrough time not determined as preparation, consult PPE manufacturers.

SKIN PROTECTION :

Wear standard protective clothing.

EYE PROTECTION :

Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Use good work and personal hygiene practices to avoid exposure. Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Clear to slightly hazy Yellow Orange
ODOR	Sulfurous
SPECIFIC GRAVITY	1.145 - 1.175 @ 77.0 °F / 25.0 °C
DENSITY	9.5 - 9.8 lb/gal
SOLUBILITY IN WATER	Complete
pH (100 %)	12.0 - 13.2
FREEZING POINT	14 °F / -10 °C

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.



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CONDITIONS TO AVOID :

Avoid extremes of temperature.

MATERIALS TO AVOID :

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. May release CS₂ or hydrogen sulfide on contact with acids.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon, Oxides of nitrogen, Oxides of sulfur

11. TOXICOLOGICAL INFORMATION

The following results are for the product, unless otherwise indicated.

ACUTE ORAL TOXICITY :

Species: Rat
LD50: > 2,000 mg/kg
Test Descriptor: Product

PRIMARY SKIN IRRITATION :

Remarks: Not irritating

PRIMARY EYE IRRITATION :

Species: Rabbit
Assay Type: OECD 405
Result: Not irritating
Test Descriptor: Product

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

MUTAGENICITY :

Not mutagenic in Ames Test.

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: Low

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12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product, unless otherwise indicated.

Acute Fish Results :

Species	Exposure	Test Type	Value	Test Descriptor
Sheepshead Minnow	96 hrs	LC50	1,824 mg/l	Similar (more concentrated) Product
Inland Silverside	96 h	LC50	3,122 mg/l	Product
Rainbow Trout	96 h	LC50	211 mg/l	Product
Fathead Minnow	96 h	LC50	636 mg/l	Product

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Daphnia magna	48 hrs	LC50	165 mg/l	Similar (more concentrated) Product
Ceriodaphnia dubia	48 h	LC50	328 mg/l	Product
Mysid Shrimp (Mysidopsis bahia)	96 h	LC50	174 mg/l	Product

AQUATIC PLANT RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum)	96 h	EC50	10.2 mg/l	Product Tested in Soft Water
Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum)	96 h	IC50	9.7 mg/l	Product Tested in Soft Water
Green Algae (Pseudokirchneriella subcapitata, previously Selenastrum capricornutum)	96 h	NOEC	5 mg/l	Product Tested in Soft Water

CHRONIC FISH RESULTS :

Species	Exposure	Test Type	Value	End Point	Test Descriptor
Fathead Minnow	7 d	LOEC	> 200 mg/l	Survival	Product
Fathead Minnow	7 d	NOEC	200 mg/l	Survival	Product
Fathead Minnow	7 d	LOEC	100 mg/l	Growth	Product
Fathead Minnow	7 d	NOEC	50 mg/l	Growth	Product
Fathead Minnow	7 d	EC25 / IC25	81.2 mg/l	Growth	Product

Nalco Company 1601 W. Diehl Road • Naperville, Illinois 60563-1198 • (630)305-1000For additional copies of an MSDS visit www.nalco.com and request access.



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Chronic Invertebrate Results :

Species	Exposure	Test Type	Value	End Point	Test Descriptor
Ceriodaphnia dubia	7 d	NOEC	25 mg/l	Survival	Product
Ceriodaphnia dubia	7 d	LOEC	> 25 mg/l	Survival	Product
Ceriodaphnia dubia	7 d	NOEC	6.3 mg/l	Reproduction	Product
Ceriodaphnia dubia	7 d	LOEC	13 mg/l	Reproduction	Product
Ceriodaphnia dubia	7 d	EC25 / IC25	5.2 mg/l	Reproduction	Product

PERSISTENCY AND DEGRADATION :

Total Organic Carbon (TOC) : 82,000 mg/l

Chemical Oxygen Demand (COD) : 530,000 mg/l

Biological Oxygen Demand (BOD) :

Incubation Period	Value	Test Descriptor
5 d	1,690 mg/l	Product

MOBILITY :

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	10 - 30%	70 - 90%

The portion in water is expected to be soluble or dispersible.

BIOACCUMULATION POTENTIAL

This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.



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Hazardous Waste: D002

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :
Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

CERCLA/SUPERFUND, 40 CFR 302 :
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :
This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.



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SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :

This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

This product may contain trace levels (<0.1% for carcinogens, <1% all other substances) of the following substance(s) listed under the regulation. Additional components may be unintentionally present at trace levels.

Substance(s)	Citations
• Sodium Hydroxide	Sec. 311

CLEAN AIR ACT, Sec. 112 (Hazardous Air Pollutants, as amended by 40 CFR 63), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CALIFORNIA PROPOSITION 65 :

Substances listed under California Proposition 65 are not intentionally added or expected to be present in this product.

MICHIGAN CRITICAL MATERIALS :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

STATE RIGHT TO KNOW LAWS :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

INTERNATIONAL CHEMICAL CONTROL LAWS :



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CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

This product contains substance(s) which are not listed on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL).

AUSTRALIA

This product contains substance(s) which are not in compliance with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS) and may require additional review.

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

JAPAN

This product contains substance(s) which are not in compliance with the Law Regulating the Manufacture and Importation Of Chemical Substances and are not listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

PHILIPPINES

This product contains substance(s) which are not in compliance with the Republic Act 6969 (RA 6969) and may require additional review.

16. OTHER INFORMATION

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.



SAFETY DATA SHEET

PRODUCT

NALMET® 1691

EMERGENCY TELEPHONE NUMBER(S)

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Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

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