



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

August 15, 2006

Ms. Pamala Myers  
Permit Section  
Tennessee Department of Environment & Conservation  
Division of Water Pollution Control  
6th Floor, L & C Annex  
401 Church Street  
Nashville, Tennessee 37243-1534

Dear Ms. Myers:

SEQUOYAH NUCLEAR PLANT (SQN) - NATIONAL POLLUTANT DISCHARGE ELIMINATION  
SYSTEM (NPDES) PERMIT NO. TN0026450 - MSW-101 UPDATED MSDS AND NALCO  
LETTER

Enclosed is the updated MSDS for MSW-101 and a letter from Nalco with additional toxicity information. All other information regarding the use of MSW-101 was submitted in a previous letter dated March 27, 2006. Please contact Ann Hurt (423-843-6714) or myself (423-843-6700) if you need additional information or have comments or questions.

*I certify under penalty of law that this document and all of its attachments were prepared under my direction or my supervisor in accordance with a system designed to assure qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Sincerely,

Stephanie A. Howard  
Principal Environmental Engineer  
Signatory Authority for  
J. Randy Douet  
Site Vice President  
Sequoyah Nuclear Plant

C001

Enclosures  
cc (Enclosures):

Mr. Edward M. Polk, Jr., P.E.  
Manager, Permit Section  
Tennessee Department of  
Environment & Conservation  
Division of Water Pollution Control  
6th Floor, L & C Annex  
401 Church Street  
Nashville, Tennessee 37243-1534

Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Chattanooga Environmental Assistance Center  
Division of Water Pollution Control  
State Office Building, Suite 550  
540 McCallie Avenue  
Chattanooga, Tennessee 37402-2013

Ricky Stackhouse, Ph.D.  
Staff Toxicologist  
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August 3, 2006

Nalco Company  
Innovation Delivery Group  
1601 West Diehl Road  
Naperville, IL 60563-1198  
630 305 1000  
www.nalco.com

Rick M. Sherrard, Ph.D.  
Environmental Scientist - Toxicologist  
Tennessee Valley Authority  
1101 Market St, PSC 1X-C  
Chattanooga, TN 37402

Dr. Sherrard:

In addition to the aquatic toxicity information listed on the MSDS for MSW-101, the following information is also available for the product:

Species	End Point	Value	Test Substance
Fathead Minnow	7 day IC25 (growth)	2,735 mg/l	pH Adjusted Product
Fathead Minnow	7 day IC25 (growth)	1,294.6 mg/l	Non-pH Adjusted Product (Results expressed as non-aqueous components)
<i>Ceriodaphnia dubia</i>	7 day IC25 (reproduction)	133.3 mg/l	pH Adjusted Product
<i>Ceriodaphnia dubia</i>	7 day IC25 (reproduction)	20.1 mg/l	Non-pH Adjusted Product (Results expressed as non-aqueous components)

As a point of clarification, these studies were not run concurrently, but rather the pH adjusted product study was conducted first followed by the non-pH adjusted product. In addition, the term "non-aqueous components" is equivalent to the term "active ingredients" as used to describe components of a product that serve a function in the end use application. However, it is not equivalent to the EPA FIFRA term that denotes a component with pesticidal activity.

From your communications to me, I understand that TVA 1) can not validate the pH adjusted test results, 2) does not concur with the non-pH-adjusted *C. dubia* chronic test results because of a large number of males in the test population and 3) however, does consider the results from the *C. dubia* test conservative and derived in a manner consistent with the EPA Methods manual.

Please contact your local Nalco sales representative or myself, if you have additional questions regarding this product.

Regards,

A handwritten signature in cursive script that reads 'Ricky Stackhouse'.

Ricky Stackhouse, Ph.D.  
Staff Toxicologist



**MATERIAL SAFETY DATA SHEET****PRODUCT****MSW-101****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****PRODUCT NAME :** MSW-101**APPLICATION :** WATER TREATMENT**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 :** 0 / 1 **FLAMMABILITY :** 0 / 0 **INSTABILITY :** 0 / 0 **OTHER :**

0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Based on our hazard evaluation, none of the substances in this product are hazardous.

**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. After contact with skin, wash immediately with plenty of water.

Wear suitable protective clothing.

May evolve oxides of phosphorus (POx) under fire conditions.

**PRIMARY ROUTES OF EXPOSURE :**

Eye, Skin

**HUMAN HEALTH HAZARDS - ACUTE :****EYE CONTACT :**

No adverse effects expected.

**SKIN CONTACT :**

No adverse effects expected.

**INGESTION :**

Not a likely route of exposure. No adverse effects expected.

**MATERIAL SAFETY DATA SHEET****PRODUCT****MSW-101****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****INHALATION :**

Not a likely route of exposure. No adverse effects expected.

**SYMPTOMS OF EXPOSURE :****Acute :**

A review of available data does not identify any symptoms from exposure not previously mentioned.

**Chronic :**

A review of available data does not identify any symptoms from exposure not previously mentioned.

**AGGRAVATION OF EXISTING CONDITIONS :**

A review of available data does not identify any worsening of existing conditions.

**4. FIRST AID MEASURES****EYE CONTACT :**

Flush affected area with water. If symptoms develop, seek medical advice.

**SKIN CONTACT :**

Flush affected area with water. If symptoms develop, seek medical advice.

**INGESTION :**

Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. If symptoms develop, seek medical advice.

**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 :**

None

**EXTINGUISHING MEDIA :**

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

**FIRE AND EXPLOSION HAZARD :**

May evolve oxides of phosphorus (POx) 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.

**MATERIAL SAFETY DATA SHEET****PRODUCT****MSW-101****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****6. ACCIDENTAL RELEASE MEASURES****PERSONAL PRECAUTIONS :**

Restrict access to area as appropriate until clean-up operations are complete. Ensure clean-up is conducted by trained personnel only. Ventilate spill area if possible. Do not touch spilled material. Stop or reduce any leaks if it is safe to do so. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Notify appropriate government, occupational health and safety and environmental authorities.

**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. Wash site of spillage thoroughly with water. 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 :**

Do not contaminate surface water.

**7. HANDLING AND STORAGE****HANDLING :**

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

**STORAGE CONDITIONS :**

Store the containers tightly closed. Store in suitable labeled containers.

**SUITABLE CONSTRUCTION MATERIAL :**

HDPE (high density polyethylene), Stainless Steel 304, 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 :**

General ventilation is recommended. Local exhaust ventilation may be necessary when dusts or mists are generated.

**RESPIRATORY PROTECTION :**

Respiratory protection is not normally needed. Respiratory protection is not normally needed. **FULL-FACE MASK WITH WHITE CARTRIDGE**

**HAND PROTECTION :**

Neoprene gloves, Nitrile gloves, Butyl gloves, PVC gloves

**MATERIAL SAFETY DATA SHEET****PRODUCT****MSW-101****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****SKIN PROTECTION :**

Wear standard protective clothing.

**EYE PROTECTION :**

Wear chemical splash goggles.

**HYGIENE RECOMMENDATIONS :**

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Keep an eye wash fountain available. Keep a safety shower available.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

PHYSICAL STATE	Liquid
APPEARANCE	Colorless Clear
ODOR	None
SPECIFIC GRAVITY	1.35 @ 77 °F / 25 °C
DENSITY	11.2 lb/gal
SOLUBILITY IN WATER	Complete
pH (100 %)	4.7 - 5.3
BOILING POINT	212 °F / 100 °C Minimum
VAPOR PRESSURE	Same as water
VOC CONTENT	0 % Calculated

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.

**CONDITIONS TO AVOID :**

Freezing temperatures.

**MATERIALS TO AVOID :**

Contact with strong alkalis (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors.

**HAZARDOUS DECOMPOSITION PRODUCTS :**

Under fire conditions: Oxides of phosphorus, Oxides of sodium

**MATERIAL SAFETY DATA SHEET****PRODUCT****MSW-101****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****11. TOXICOLOGICAL INFORMATION**

No toxicity studies have been conducted on this 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).

**12. ECOLOGICAL INFORMATION****ECOTOXICOLOGICAL EFFECTS :**

The following results are for the product.

**ACUTE FISH RESULTS :**

Species	Exposure	LC50	Test Descriptor
Fathead Minnow	96 hrs	3,661 mg/l	pH Adjusted Product
Fathead Minnow	96 hrs	1,352 mg/l	Non-pH Adjusted Product (Results expressed as non-aqueous components)

**ACUTE INVERTEBRATE RESULTS :**

Species	Exposure	LC50	EC50	Test Descriptor
Ceriodaphnia dubia	48 hrs	1,806 mg/l		pH Adjusted Product
Ceriodaphnia dubia	48 hrs	1,189 mg/l		Non-pH Adjusted Product (Results expressed as non-aqueous components)

**CHRONIC FISH RESULTS :**

Species	Exposure	NOEC / LOEC	End Point	Test Descriptor
Fathead Minnow	7 Days	2,500 mg/l / 5,000 mg/l	Growth	pH Adjusted Product
Fathead Minnow	7 Days	932.5 mg/l / 1,865.0 mg/l	Growth	Non-pH Adjusted Product (Results expressed as non-aqueous components)

**CHRONIC INVERTEBRATE RESULTS :**

Species	Test Type	NOEC / LOEC	End Point	Test Descriptor
Ceriodaphnia dubia	3 Brood	125 mg/l / 250 mg/l	Reproduction	pH Adjusted Product
Ceriodaphnia dubia	3 Brood	11.7 mg/l / 23.3 mg/l	Reproduction	Non-pH Adjusted Product (Results expressed as non-aqueous components)



**MATERIAL SAFETY DATA SHEET****PRODUCT****MSW-101****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****MOBILITY :**

High phosphate levels in surface water can cause eutrophication with subsequent algal blooms and oxygen depletion.

**BIOACCUMULATION POTENTIAL**

This preparation or material is not expected to bioaccumulate.

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

**13. DISPOSAL CONSIDERATIONS**

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

**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****NATIONAL REGULATIONS, USA :**

**OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :**

Based on our hazard evaluation, none of the substances in this product are hazardous.

**MATERIAL SAFETY DATA SHEET****PRODUCT****MSW-101****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC**

**CERCLA/SUPERFUND, 40 CFR 117, 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.

**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.

- Immediate (Acute) Health Hazard
- Delayed (Chronic) Health Hazard
- Fire Hazard
- Sudden Release of Pressure Hazard
- Reactive Hazard

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)

**NSF INTERNATIONAL :**

This product has received NSF/International certification under NSF/ANSI Standard 60 in the corrosion and scale control and sequestering categories. The official name is "Blended Corrosion Inhibitor." Maximum product application dosage is : 34 mg/l.

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

This product contains the following substances listed in the regulation:

Substance(s)	Citations
• Sodium Phosphate, Tribasic	Sec. 311

**CLEAN AIR ACT, Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :**

None of the substances are specifically listed in the regulation.

**CALIFORNIA PROPOSITION 65 :**

This product does not contain substances which require warning under California Proposition 65.



## MATERIAL SAFETY DATA SHEET

PRODUCT

**MSW-101**

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

### MICHIGAN CRITICAL MATERIALS :

None of the substances are specifically listed in the regulation.

### STATE RIGHT TO KNOW LAWS :

The following substances are disclosed for compliance with State Right to Know Laws:

Sodium Phosphate, Tribasic

7601-54-9

### NATIONAL REGULATIONS, CANADA :

#### WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :

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

#### WHMIS CLASSIFICATION :

Not considered a WHMIS controlled product.

#### CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

### INTERNATIONAL CHEMICAL CONTROL LAWS

#### EUROPE

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

## 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

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

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.

Nalco Company 1601 W. Diehl Road • Naperville, Illinois 60563-1198 • (630)305-1000

For additional copies of an MSDS visit [www.nalco.com](http://www.nalco.com) and request access



## MATERIAL SAFETY DATA SHEET

PRODUCT

**MSW-101**

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

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

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

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.

Ariel Insight# (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

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

Prepared By : Product Safety Department

Date issued : 08/02/2006

Version Number : 1.8