

Certified Mail
Return Receipt Requested



June 23, 2000

Mr. Janardan R. Pandey, P. E.
DEQ - Valley Regional Office
4411 Early Road
P. O. Box 3000
Harrisonburg, VA 22801

RE: North Anna Power Station - Service Water Reservoir

Dear Mr. Pandey:

As we discussed during our telephone conversation on June 6, 2000, station personnel are interested in using a new chemical in the service water reservoir at North Anna Power Station.

The service water system piping is experiencing microbiologically influenced corrosion. In order to alleviate this situation, station personnel are proposing to use a microorganism control chemical (Nalco 7320) in the reservoir. The concentration of the chemical in the reservoir will be maintained between 0.0 mg/l and 5.0 mg/l. Use of the chemical is scheduled to commence on July 15, 2000.

Attached for your review is a copy of the MSD sheet for Nalco 7320.

If you have any questions or desire additional information, please call me at (804) 273-2992.

Sincerely,

A handwritten signature in black ink, appearing to read "Ron Birckhead".

Ron Birckhead
Staff Engineer

A 001

cc:

U. S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, GA 30303
RE: North Anna Units 1 and 2
Docket Nos. 50-338/50-339
License Nos. NPF-4/NPF-7

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
RE: North Anna Units 1 and 2
Docket Nos. 50-338/50-339
License Nos. NPF-4/NPF-7

Mr. M.J. Morgan
NRC Senior Resident Inspector
North Anna Power Station



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 7320

EMERGENCY TELEPHONE NUMBER

(800)462-5378 (24 Hours) (800) I-M-ALERT

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **NALCO 7320**

APPLICATION : MICROORGANISM CONTROL CHEMICAL

CHEMICAL DESCRIPTION : Glycol, Amide(s), Organic compound

COMPANY IDENTIFICATION : Nalco Chemical Company
One Nalco Center
Naperville, Illinois
60563-1198

EMERGENCY TELEPHONE NUMBER : (800)462-5378 (24 Hours) (800) I-M-ALERT

NFPA 704M/HMIS RATING
HEALTH: 3/3 FLAMMABILITY: 1/1 REACTIVITY: 1/1 OTHER:

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

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Dibromoacetonitrile	3252-43-5	1.0
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	20.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER

CORROSIVE. CAUSES SEVERE BURNS TO EYES. EYE CONTACT MAY CAUSE LOSS OF VISION. MAY BURN SKIN. MAY BE HARMFUL OR FATAL IF SWALLOWED.

Do not get in eyes, on skin or on clothing. Chemical Worker's goggles must be worn when handling. Wash thoroughly after handling.

Not flammable or combustible. May evolve oxides of carbon (CO_x) under fire conditions. May evolve bromine, cyanogen bromide and dibromoacetonitrile under fire conditions. May evolve oxides of nitrogen (NO_x) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :
Eye, Skin, Inhalation

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

Corrosive. Will cause eye burns and permanent tissue damage.

SKIN CONTACT :

May cause severe irritation or tissue damage depending on the length of exposure and the type of first aid administered. Repeated or prolonged contact may cause skin sensitization.

INGESTION :

Not a likely route of exposure. Corrosive; causes chemical burns to the mouth, throat and stomach. Harmful if swallowed.

INHALATION :

Not a likely route of exposure. Irritating, in high concentrations, to the eyes, nose, throat and lungs. Harmful if inhaled. Trace levels of cyanogen bromide and dibromoacetonitrile vapors may be present in unvented containers and may be irritating.

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**IF IN EYES:** Immediately flush with plenty of water for at least 15 minutes. Call a physician.**IF ON SKIN:** Immediately wash with soap and plenty of water. Remove contaminated clothing and wash before reuse. Get medical attention if irritation persists.**IF SWALLOWED:** Immediately induce vomiting by giving two glasses of water and sticking finger down throat. Repeat until vomit is clear. Call a physician. Never give anything by mouth to an unconscious person.**NOTE TO PHYSICIAN :**

Probable mucosal damage may contraindicate the use of gastric lavage. 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 :**

> 360 °F / > 182 °C (COC)

EXTINGUISHING MEDIA :

Use extinguishing media appropriate for surrounding fire.

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FIRE AND EXPLOSION HAZARD :

Not flammable or combustible. May evolve oxides of carbon (COx) under fire conditions. May evolve bromine, cyanogen bromide and dibromoacetonitrile under fire conditions. May evolve oxides of nitrogen (NOx) 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.

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 dyking. 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 :

This product is toxic to fish and other water organisms. Do not discharge directly into lakes, ponds, streams, waterways or public water supplies.

7. HANDLING AND STORAGE**HANDLING :**

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Avoid generating aerosols and mists. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE CONDITIONS :

Store the containers tightly closed. Store separately from oxidizers. Store in suitable labelled containers.

UNSUITABLE CONSTRUCTION MATERIAL :

Do not use aluminum or mild steel.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**OCCUPATIONAL EXPOSURE LIMITS :**

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.



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Manufacturer's Recommendation :

Substance(s)

CEILING: 0.1000 ppm (Skin)

Manufacturer's Recommendation :

Substance(s)

2,2-Dibromo-3-nitrilopropionamide

CEILING: 2 mg/m³

ENGINEERING MEASURES :

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

RESPIRATORY PROTECTION :

If significant mists, vapors or aerosols are generated an approved respirator is recommended. A dust, mist, fume cartridge may be used. 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 :

NEOPRENE, NITRILE, NATURAL RUBBER OR PVC GLOVES

SKIN PROTECTION :

Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots. A full slicker suit is recommended if gross exposure is possible.

EYE PROTECTION :

Wear a face shield with chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Eye wash station and safety shower are necessary. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION :

Based on our recommended product application and personal protective equipment, the potential human exposure is: Moderate

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Amber
ODOR	Mild, Disinfectant
SPECIFIC GRAVITY	1.20 - 1.30 @ 73 °F / 23 °C
DENSITY	10.0 - 10.8 lb/gal
SOLUBILITY IN WATER	Complete
pH (100 %)	2 - 5
POUR POINT	-49 °F / -45 °C



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FREEZING POINT	-58 °F / -50 °C
BOILING POINT	> 158 °F / > 70 °C Decomposes
VAPOR PRESSURE	< 0.1 mm Hg @ 70 °F / 21 °C

10. STABILITY AND REACTIVITY

STABILITY :
Stable under normal conditions.

HAZARDOUS POLYMERIZATION :
Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Keep at temperature not exceeding	35	°C
	95	°F

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 carbon, Oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

The following results are for the product.

ACUTE ORAL TOXICITY :

Species	LD50	Tested Substance
Rat	510 mg/kg	Product
Rating :	Non-Hazardous	

ACUTE DERMAL TOXICITY :

Species	LD50	Tested Substance
Rabbit	> 2,000 mg/kg	Product
Rating :	Non-Hazardous	

ACUTE INHALATION TOXICITY :

Species	LC50	Tested Substance
Rat	1.4 mg/l (4 hrs)	Product
Rat	1.25 mg/l (4 hrs)	Product
Rating :	Very Toxic	



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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).

HUMAN HAZARD CHARACTERIZATION :

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

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product along with results on the hazardous substances.

ACUTE FISH RESULTS :

Species	Exposure	LC50	Tested Substance
Sheepshead Minnow	96 hrs	1.4 mg/l	Active Substance
Rainbow Trout	96 hrs	1 mg/l	Active Substance
Fathead Minnow	96 hrs	1.36 mg/l	Active Substance
Bluegill Sunfish	96 hrs	1.3 mg/l	Active Substance
Sheepshead Minnow	96 hrs	7.500 mg/l	Product
Rainbow Trout	96 hrs	3.600 mg/l	Product
Bluegill Sunfish	96 hrs	8.900 mg/l	Product

Rating : Very toxic

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	LC50	EC50	Tested Substance
Arcatia tonsa		1.78 mg/l		Product
Grass Shrimp	96 hrs	11.5 mg/l		Active Substance
Daphnia magna	48 hrs	1.24 mg/l		Active Substance
Daphnia magna	48 hrs	4.3 mg/l	3.8 mg/l	Product
Mysid Shrimp (M. bahia)	96.00 hrs	4.200 mg/l		Product

Rating : Toxic

AQUATIC PLANT RESULTS :

Species	Exposure	EC50	Tested Substance
Marine Algae (Skeletonema costatum)		0.53 mg/l	Product

Rating : Very toxic

PERSISTENCY AND DEGRADATION :

Chemical Oxygen Demand (COD) : 1,110,000 mg/l

Biological Oxygen Demand (5 Day BOD) : 1,100 mg/l



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IATA Cargo Packing Instructions : 820
 IATA Cargo Aircraft Limit : 60 L (Max net quantity per package)

MARINE TRANSPORT (IMDG/IMO) :

IMDG Page : 8147
 Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
 Technical Name(s) : 2,2-DIBROMO-3-NITRILOPROPIONAMIDE
 UN/ID No : 3265
 Hazard Class - Primary : 8
 Packing Group : III

15. REGULATORY INFORMATION

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :
 Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Dibromoacetonitrile : Irritant
 2,2-Dibromo-3-nitrilopropionamide : Corrosive

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 this product to be hazardous. The product should be reported under the following EPA hazard categories:

X	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.

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MOBILITY AND BIOACCUMULATION POTENTIAL
This substance has a low potential to bioconcentrate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Moderate
Based on our recommended product application and the product's characteristics, the potential environmental exposure is: High

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.

Hazardous Waste: D002

Do not contaminate water, food, or feed by storage or disposal. Pesticide wastes are acutely hazardous and/or toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to the label instructions, contact your State pesticide or environmental control agent or the hazardous waste representative at the nearest EPA Regional Office for guidance. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Do not reuse empty container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or other procedures approved by state and local authorities.

14. TRANSPORT INFORMATION

Proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are:

LAND TRANSPORT :

Proper Shipping Name :

PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :

Technical Name(s) :

UN/ID No :

Hazard Class - Primary :

Packing Group :

CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

2,2-DIBROMO-3-NITRILOPROPIONAMIDE

3265

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III

**MATERIAL SAFETY DATA SHEET****PRODUCT****NALCO 7320****EMERGENCY TELEPHONE NUMBER****(800)462-5378 (24 Hours) (800) I-M-ALERT****SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :**

This product contains the following substance(s), (with CAS # and % range) which appear(s) on the List of Toxic Chemicals

<u>Hazardous Substance(s)</u>	<u>CAS NO</u>	<u>% (w/w)</u>
2,2-Dibromo-3-nitrilopropionamide	10222-01-2	10.0 - 30.0

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

This product is exempted under TSCA and regulated under FIFRA. The inerts are on the Inventory List.

U.S. DEPARTMENT OF AGRICULTURE (USDA) :

USDA Inspection and Grading Programs - Food Safety and Inspection Service:

This product is authorized by USDA for use in federally inspected meat and poultry plants. Authorized use is under category : G7

This product has been certified as KOSHER/PAREVE for year-round use INCLUDING THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.

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

None of the substances are specifically listed in the regulation.

CLEAN AIR ACT, Sec. 111 (40 CFR 60, Volatile Organic Compounds), Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

This product contains the following substances listed in the regulation:

<u>Substance(s)</u>	<u>Citations</u>
Polyethylene Glycol :	Sec. 111

CALIFORNIA PROPOSITION 65 :

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

MICHIGAN CRITICAL MATERIALS :

None of the substances are specifically listed in the regulation.

STATE RIGHT TO KNOW LAWS :

This product is a registered biocide and is exempt from State Right to Know Labelling Laws.

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 :

Pesticide controlled products are not regulated under WHMIS.

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CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

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

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Moderate

* The environmental risk is: Moderate

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

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.

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.

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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 : 07/30/1999
Replaces : 04/28/1998