

**MATERIAL SAFETY DATA SHEET**

PRODUCT

NALCOLYTE 8103 PLUS

EMERGENCY TELEPHONE NUMBER

Australia: 1 800 033 111

New Zealand: 0 800 734 607

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME NALCOLYTE 8103 PLUS

APPLICATION : WATER CLARIFICATION AID

COMPANY IDENTIFICATION :

Nalco Australia Pty Ltd 2 Anderson Street Botany N.S.W. 2019 Australia A.B.N. 41 000 424 788 TEL: +61 29 316 3000 FAX: +61 29 666 5292	Nalco New Zealand Ltd 44 Cryers Road East Tamaki, Auckland New Zealand TEL: +649 2745032 FAX: +649 2747924
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EMERGENCY TELEPHONE NUMBER(S) :

1 800 033111 (Australia)	0800 734607 (New Zealand)
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Date issued : 27-Sep-04

2. COMPOSITION/INFORMATION ON INGREDIENTS

Not classified as hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC).

CHEMICAL DESCRIPTION : Polyquatarnary Amine, Water

CHEMICAL NAME	CAS NO	% (w/w)
Ingredients determined not to be hazardous		100%

3. HAZARDS IDENTIFICATION

HUMAN HEALTH HAZARDS - ACUTE

EYE CONTACT
Can cause mild irritation.

SKIN CONTACT
May cause irritation with prolonged contact.

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. Aerosols or product mist may irritate the upper respiratory tract.

HUMAN HEALTH HAZARDS - CHRONIC
No adverse effects expected other than those mentioned above.

ENVIRONMENTAL HAZARDS
Keep out of waterways. Spilled product may pose a risk to the aquatic ecosystem if released.

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4. FIRST AID MEASURES

EYE CONTACT

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

SKIN CONTACT

Remove contaminated clothing. Wash off affected area immediately with soap and plenty of water. If skin irritation persists, obtain medical attention.

INGESTION

Get medical attention. Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. If conscious, washout mouth and give water to drink. Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

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 : Not flammable

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 (CO_x) under fire conditions. May evolve oxides of nitrogen (NO_x) under fire conditions. May evolve ammonia (NH₄) under fire conditions. May evolve HCl 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. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Notify appropriate government, occupational health and safety and environmental authorities. Spill may be slippery.

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

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Prevent material from entering sewers or waterways. Spilled product may pose a risk to the aquatic ecosystem if released. 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. Ensure all containers are labelled. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Keep the containers closed when not in use.

STORAGE CONDITIONS

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

SUITABLE CONSTRUCTION MATERIAL

HDPE (high density polyethylene)

SENSITIVITY TO STATIC DISCHARGE

Not expected to be sensitive to static discharge.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

None of the components have been assigned an exposure standard by NOHSC (Australia) or OSH (New Zealand).

ENGINEERING MEASURES

General ventilation is recommended.

PERSONAL PROTECTION

GENERAL ADVICE

The use and choice of personal protection equipment is related to the hazard of the product, the workplace and the way the product is handled. In general, we recommend as a minimum precaution that safety glasses with side-shields and workclothes protecting arms, legs and body be used. In addition any person visiting an area where this product is handled should at least wear safety glasses with side-shields.

RESPIRATORY PROTECTION

Respiratory protection is not normally needed.

HAND PROTECTION

PVC gloves, Nitrile gloves

SKIN PROTECTION

See general advice.

EYE PROTECTION

Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS

Use good work and personal hygiene practices to avoid exposure. Consider the provision in the work area of a safety shower and eyewash. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Viscous liquid
APPEARANCE	Clear Light yellow
ODOR	None
FLASH POINT	Not flammable
SPECIFIC GRAVITY	1.09
SOLUBILITY IN WATER	Complete
pH (100%)	5 - 8
VISCOSITY	1050 cPs
FREEZING POINT	-9.9 °C
INITIAL BOILING POINT	100 °C
VAPOR PRESSURE	Same as water
VOC CONTENT	0 %

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 oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS

Under fire conditions:

- Oxides of carbon
- ammonia
- Oxides of nitrogen
- HCl

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA :

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).

HUMAN HAZARD CHARACTERIZATION :

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

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12. ECOLOGICAL INFORMATION**ECOTOXICOLOGICAL EFFECTS :**

The tests for the product were performed in clean water as set forth by USEPA (EPA/600/4-90/027). In order to evaluate the potential toxicity mitigation, the tests for representative polymers were performed in environmentally relevant water with dissolved organic carbon (DOC: 4.5 mg/L). The toxicity of this product is due to an external mode of action, e.g., suffocation or immobilization. In the presence of suspended material, e.g., DOC, the polymers are bound to suspended material and the bioavailability is substantially reduced. As a result, the toxicity is expected to be lower.

Acute Fish Results :

Species	Exposure	LC50	Test Descriptor
Rainbow Trout	96 hrs	0.85 mg/L	Product tested in clean water
Inland Silverside	96 hrs	> 5000 mg/L	Product tested in clean water
Zebra danio	96 hrs	10 - 100 mg/L	Representative polymers tested in water with DOC

Acute Invertebrate Results :

Species	Exposure	LC50	Test Descriptor
Ceriodaphnia dubia	48 hrs	2.5 mg/L	Product tested in clean water
Daphnia Magna	48 hrs	2.06 mg/L	Product tested in clean water
Daphnia magna	48 hrs	10 - 100 mg/L	Representative polymers tested in water with DOC

Acute Fish Results :

Species	Exposure	LC50	Test descriptor:
Inland Silverside	96 hrs	> 5000 mg/L	Product

Acute Invertebrate Results :

Species	Exposure	LC50	EC50	Test descriptor:
Ceriodaphnia dubia	48 hrs	2.5 mg/L		Product

MOBILITY :

The product is eliminated from aqueous phase via abiotic process (adsorption on suspended material) to a large extent (> 95 %).

BIOACCUMULATION POTENTIAL :

No bioaccumulation will occur. The large size of the polymer is incompatible with transport across the cellular membranes.

ADDITIONAL ECOLOGICAL INFORMATION :

AOX information: Product contains no organic halogens.

ENVIRONMENTAL HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential environmental hazard is: High
(This hazard characterization is based on the impact of the product on pristine receiving waters. This enables the end user to assess the "worst case scenario" in a risk assessment.)

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13. DISPOSAL CONSIDERATIONS

Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sewer or with normal garbage.

Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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 (ADG):

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**AUSTRALIA:**

Not classified as hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC).

CLASSIFICATION: This product is not classified as hazardous, however, we recommend the following safety instructions:

SAFETY PHRASES:

S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water.
S37/39 Wear suitable gloves and eye/face protection.

NICNAS:

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

SUSDP SCHEDULE Not Listed

General Approvals

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The National Health and Medical Research Council approved the use of polydimethyldiallyl ammonium chloride for treatment of drinking water in Australia subject to certain conditions [NHRMC June 1982, 93rd Session pp19-20].

When dosed at less than 54mg/L, NALCOLYTE 8103 PLUS meets these conditions and is suitable for potable applications.

Polydimethyldiallyl ammonium chloride has also been approved by the National Food Authority for use as a processing aid used in packaged water and in water used as an ingredient in other foods [NFA Standard A16, Table VI].

NEW ZEALAND:

NZ SCHEDULE Not Listed

INTERNATIONAL REGULATIONS :

NSF INTERNATIONAL :

This product has received NSF/International certification under ANSI/NSF Standard 60 in the coagulation and flocculation category. The official name is "Poly (Diallyldimethylammonium Chloride) (pDADMAC)." Maximum product application dosage is: 57 mg/L.

This approval only applies to products whose container label bears the ANSI/NSF Mark.

INTERNATIONAL CHEMICAL CONTROL LAWS

TOXIC SUBSTANCES CONTROL ACT (TSCA)

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

EUROPE

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

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.

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Ministry of International Trade & Industry List (MITI).

KOREA

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

CHINA

All substances in this product comply with the Chemical Control Law and are listed on the Inventory of Existing Chemical Substances China (IECSC).

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

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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(tm) CD-ROM Version), Ariel Research Corp., Bethesda, MD.

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

Ariel Insight(tm) (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(tm) CD-ROM Version), Ariel Research Corp., Bethesda, MD.

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

Prepared By Nalco Asia Pacific SHE, Regulatory Chemist

Date issued: 27-Sep-04

Replaces: 16-Sep-04

Reason for change: Change to brand name.