



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCOOL 2000 COOLING TREATMENT

Emergency Telephone Number
Medical (312) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCOOL 2000 COOLING TREATMENT
DESCRIPTION: An aqueous solution of borates, silicates, nitrates, nitrites and mercaptobenzothiazoleNFPA 704M RATING 2 HEALTH 0 FLAMMABILITY 0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Sodium nitrite	7632-00-0	1-10
Sodium mercaptobenzothiazole	2492-26-4	1-10
Sodium tetraborate	1330-43-4	1-10

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Harmful or fatal if swallowed in large doses. Contains sodium nitrite. Causes blood system disorders when swallowed. Do not take internally. May cause irritation to skin and eyes. Avoid contact with eyes, and prolonged or repeated contact with skin.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Flush with water for 15 minutes.
INGESTION: Induce vomiting. Give water. Call a physician at once.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

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SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

(CONTINUED)

FLASH POINT: None

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: N-nitrosamines, many are cancer causing agents to laboratory animals, may be formed when certain amines are mixed with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations.

Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂, NOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles (ANSI Z 87.1 requirements and selection of gloves, goggles, shoes, etc.) when attaching feeding equipment or doing maintenance.

If clothing is contaminated, remove clothing and thoroughly wash the

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SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause transient irritation.
SKIN CONTACT: Can cause transient irritation.
INGESTION: Can cause kidney damage. Can be harmful or fatal.

SYMPTOMS OF EXPOSURE: Sodium nitrite. Causes formation of methaemoglobinemia leading to cyanosis and possible death if ingested. Repeated ingestion of small amounts causes blood pressure to drop, rapid pulse, headaches and visual disturbances. Causes central nervous system effects (eg. headaches, tremors, drowsiness and convulsions).

AGGRAVATION OF EXISTING CONDITIONS: Sodium nitrite. Pregnant women are particularly sensitive to methaemoglobinemia.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but acute studies have been conducted on a similar product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD₅₀ = 3,362 mg/kgPRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):
SKIN IRRITATION INDEX DRAIZE RATING: 0.5/8.0 Minimal irritationPRIMARY EYE IRRITATION TEST (ALBINO RABBITS):
EYE IRRITATION INDEX DRAIZE RATING: 16.7/110.0

CHRONIC TOXICITY RESULTS: Sodium nitrite. Experimental animal studies have shown reproductive effects in the offspring of the treated parents. These effects are non-transmissible. Bacterial assay mutation studies have been positive. Tumorigenic data is equivocal.

Sodium mercaptobenzothiazole. Chronic feeding laboratory animal study of 120 ppm in the diet showed no effects.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Red	FORM: Liquid	ODOR: None
SOLUBILITY IN WATER: Completely		
SPECIFIC GRAVITY: 1.13 @ 60 Degrees F		ASTM D-1298
pH (NEAT) = 11.5 - 11.8		ASTM E-70
BOILING POINT: 212 Degrees F @ 760 mm Hg		ASTM D-86

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SECTION 10 PERSONAL PROTECTION EQUIPMENT

(CONTINUED)

affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (312-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, (i.e. D001 through D017) nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified before disposal to a sanitary landfill. Can be deep-well injected in accordance with local, state and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
ORM-E NA 9188
CONTAINS - SODIUM NITRITE

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

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MATERIAL SAFETY DATA SHEET

PRODUCT NALCOOL 3000 WITH STABIL-AID

Emergency Telephone Number
Medical (312) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCOOL 3000 WITH STABIL-AID

DESCRIPTION: An aqueous solution of nitrates, nitrites, silicate, borate and mercaptobenzothiazole

NFPA 704M RATING 2 HEALTH 0 FLAMMABILITY 0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Sodium hydroxide	1310-73-2	1-10
Sodium nitrite	7632-00-0	1-10
Sodium tetra borate	1330-43-4	1-10
Sodium mercaptobenzothiazole	2492-26-4	1-10

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: May be harmful if swallowed. May cause irritation to skin and eyes. Contains sodium nitrite/nitrate. May cause eye or skin irritation or allergic contact dermatitis in susceptible individuals.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Flush with water for 15 minutes.
INGESTION: Induce vomiting. Give water. Call a physician at once.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician at once.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

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Emergency Telephone Number
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SECTION 6 TOXICOLOGY INFORMATION

(CONTINUED)

a sensitizer in laboratory animal tests.

CHRONIC TOXICITY RESULTS: Sodium nitrite. Experimental animal studies have shown reproductive effects in the offspring of treated parents. These effects are non-transmissible. Bacterial assay mutation studies have been positive. Tumorigenic data is equivocal. Sodium mercaptobenzothiazole - chronic feeding laboratory animal study of 120 ppm in the diet showed no effects.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Red	FORM: Liquid	ODOR: None
SOLUBILITY IN WATER: Completely		
SPECIFIC GRAVITY: 1.14 @ 70 Degrees F	ASTM D-1298	
pH (HEAT) = 11.6	ASTM E-70	
VISCOSITY: 3.9 cps @ 70 Degrees F	ASTM D-2983	
FREEZE POINT: 18 Degrees F	ASTM D-1177	
BOILING POINT: 212 Degrees F @ 760 mm Hg	ASTM D-86	
FLASH POINT: None (PMCC)	ASTM D-93	

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx or SOx under fire conditions.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: N-nitrosamines, many are cancer causing agents to laboratory animals, may be formed when certain amines are mixed with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂, NOx, SOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

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SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: May cause irritation with prolonged contact.
SKIN CONTACT: May cause irritation with prolonged contact.
INGESTION: Can cause kidney damage. Can be harmful or fatal.

SYMPTOMS OF EXPOSURE:

ACUTE: Sodium nitrite causes formation of methaemoglobinaemia leading to cyanosis and possible death if ingested. Repeated ingestion of small amounts causes blood pressure to drop, rapid pulse, headaches and visual disturbances. Causes central nervous system effects (e.g. headaches, tremors, drowsiness and convulsions).

AGGRAVATION OF EXISTING CONDITIONS: Sodium nitrite. Pregnant women are particularly sensitive to methaemoglobinaemia.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have been conducted on this product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): LD₅₀ = 2,884 mg/kg

95% Confidence Limit = (2,532 - 3,236 mg/kg)

Rating: Slightly toxic

ACUTE DERMAL TOXICITY (ALBINO RATS): LD₅₀ = Greater than 2,000 mg/kg

Rating: Practically non-toxic

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):
SKIN IRRITATION INDEX DRAIZE RATING: 0.0/8.0 Non-irritatingPRIMARY EYE IRRITATION TEST (ALBINO RABBITS):
EYE IRRITATION INDEX DRAIZE RATING: 8.7/110.0

Rating: Slightly irritating

COMMENTS: One hour after contact transient, redness and swelling of the conjunctival was noted along with blistering of the mucous membrane. Seven days after contact all eyes were normal.

SKIN SENSITIZATION: Sodium mercaptobenzothiazole has been shown to be

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SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists or aerosols are generated, wear a NIOSH approved or equivalent respirator, (ANSI Z 88.2, 1980 for requirements and selection).

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles (ANSI Z 87.1 requirements and selection of gloves, goggles, shoes, etc.). A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (312-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource

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