



MATERIAL SAFETY DATA SHEET

PRODUCT NALCO 5002 METALS PASSIVATOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

GS707

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 5002 METALS PASSIVATOR

DESCRIPTION: An aqueous solution of an antimony oxide, ethylene glycol, morpholine and methanol

NFPA 704M/HMIS RATING: 3/3 HEALTH 1/1 FLAMMABILITY 0/0 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. %
Ethylene glycol	107-21-1	10-20
Diethylene glycol	111-46-6	1-5
Antimony pentoxide	1314-60-9	10-20
Morpholine	110-91-8	5-10
Methanol	67-56-1	1-5

SECTION 3 PRECAUTIONARY LABEL INFORMATION

DANGER!: Harmful or fatal if swallowed. Causes irritation to skin and eyes. Prolonged or repeated breathing of vapor or mists may be harmful. Contains Ethylene Glycol - causes birth defects in laboratory animals. Do not get in eyes, on skin, or on clothing. Wear goggles and face shield when handling. Avoid breathing vapor. Use with adequate ventilation.

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

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.
SKIN: Immediately flush with water for at least 15 minutes. Call a physician.
INGESTION: Induce vomiting immediately. Give water. Call a physician at once.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be



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SECTION 4 FIRST AID INFORMATION

(CONTINUED)

used to control symptoms and clinical condition.

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

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Can cause moderate to severe irritation.
SKIN CONTACT: Can cause moderate to severe irritation.
INGESTION: Can cause blindness from methanol. Can be harmful or fatal due to ethylene glycol. Lethal dose of ethylene glycol for humans is 3-3 1/2 fluid ounces.
INHALATION: Prolonged inhalation of mist or vapor may be harmful.

SYMPTOMS OF EXPOSURE:

ACUTE: Inhalation of high concentrations of methanol can cause nausea, dizziness, vomiting, stupor or unconsciousness.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but toxicity studies of the ingredient(s) in Section 2 have been reviewed. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):

Ethylene glycol LD50 = 6 g/kg

Methanol LD50 = 9,100 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS):

Ethylene glycol LD50 = 9.5 ml/kg

Methanol LD50 = 15,800 mg/kg (1-hour exposure)

ACUTE INHALATION TOXICITY (ALBINO RATS):

None of the rats died when exposed for 8-hours to air saturated with ethylene glycol vapors.



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SECTION 6 TOXICOLOGY INFORMATION

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Methanol LC50 = 14,500 ppm

OTHER TOXICITY RESULTS: Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations.

Mutagenicity tests on morpholine provided the following results: Ames test, negative; sister chromatid exchange, equivocal; cell transformation, positive; mouse lymphoma, positive; and DNA repair, negative.

CHRONIC TOXICITY RESULTS: Ethylene glycol: Two chronic feeding studies, using rats and mice, have not produced any evidence that the chemical causes dose-related increases in tumor incidence, or a different pattern of tumors when compared to untreated controls. The absence of a carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce chromosomal breakage or mutagenic effects.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear yellow	FORM: Liquid	ODOR: Amine
SOLUBILITY IN WATER:	Completely	
SPECIFIC GRAVITY:	1.13 @ 60 Degrees F	
pH (NEAT) =	7.4	ASTM E-70
VISCOSITY:	Less than 32 SUS @ 100 Degrees F	ASTM D-445
POUR POINT:	0 Degrees F	ASTM D-97
FLASH POINT:	212 Degrees F (TCC)	ASTM D-56
VAPOR PRESSURE:	53 mm Hg @ 100 Degrees F	ASTM D-323
PERCENT VOLATILE		
BY WEIGHT:	37 @ 75 Degrees F	

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

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: 212 Degrees F (TCC) ASTM D-56

EXTINGUISHING MEDIA: Based on the NFPA guide, use dry chemical, alcohol foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

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



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SECTION 8 FIRE AND EXPLOSION INFORMATION (CONTINUED)

Contact with reactive metals (eg. aluminum) may result in the generation of flammable hydrogen gas.

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 oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

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.

FEEDING EQUIPMENT: Do not use with aluminum, copper or copper alloys.

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

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent respirator is recommended.

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. Additionally, local exhaust ventilation is recommended where vapors or mists may be released.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles. 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.



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SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

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 with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated 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 - PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Ethylene glycol - Systemic toxic effects, ingestion can cause birth



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SECTION 14 REGULATORY INFORMATION

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defects based on tests with laboratory animals (refer to Section 6)

Morpholine - Flammable, corrosive

Methanol - Flammable, systemic effects

Antimony pentoxide (as Sb) = TWA 0.5 mg/m3 ACGIH/TLV

Methanol = TWA 200 ppm, STEL 250 ppm (skin) ACGIH/TLV

260 mg/m3, 310 mg/m3 ACGIH/TLV

Ethylene glycol (vapor) = Ceiling 50 ppm, 125 mg/m3 ACGIH/TLV

Morpholine = TWA 20 ppm, STEL 30 ppm (skin) ACGIH/TLV

70 mg/m3, 105 mg/m3 ACGIH/TLV

Antimony pentoxide (as Sb) = TWA 0.5 mg/m3 OSHA/PEL

Methanol = TWA 200 ppm, STEL 250 ppm (skin) OSHA/PEL

260 mg/m3, 310 mg/m3 OSHA/PEL

Ethylene glycol (vapor) = Ceiling 50 ppm, 125 mg/m3 OSHA/PEL

Morpholine = TWA 20 ppm, STEL 30 ppm (skin) OSHA/PEL

70 mg/m3, 105 mg/m3 OSHA/PEL

Diethylene glycol = TWA 50 ppm (total), 10 mg/m3 AIHA/WEEL

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 ingredients 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:

XX Immediate (acute) health hazard

XX Delayed (chronic) health hazard

-- Fire hazard

-- Sudden release of pressure hazard

-- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

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

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

Ethylene glycol	107-21-1	10-20
Antimony pentoxide	1314-60-9	10-20
Methanol	67-56-1	1-5

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

If this product becomes a waste, it does not meet the criteria of a hazardous waste.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

This product contains the following ingredients covered by the Clean Water Act:

Antimony pentoxide - Section 307

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:

This product contains the following ingredients covered by the Clean Air Act:

Ethylene glycol - Section 111
Morpholine - Section 111
Methanol - Section 111
Diethylene glycol - Section 111

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:

This product contains the following substance(s) identified on the Michigan Critical Materials Register:



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

Antimony pentoxide

STATE RIGHT TO KNOW LAWS:

The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Antimony pentoxide	1314-60-9
Diethylene glycol	111-46-6
Ethylene glycol	107-21-1
Methanol	67-56-1
Morpholine	110-91-8
Water	7732-18-5

INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill C-70. The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredient(s):

Chemical Name	CAS #	% Concentration Range
Ethylene glycol	107-21-1	10-20
Diethylene glycol	111-46-6	1-5
Antimony pentoxide	1314-60-9	10-20
Morpholine	110-91-8	5-10
Methanol	67-56-1	1-5

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

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 ensure safe workplace operations. Please consult your local sales representative for any further information.



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SECTION 17 BIBLIOGRAPHY

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